

## ORIGINAL RESEARCH ARTICLE

# Effect of Spanish language proficiency on acculturative stress and access to sexual and reproductive health and rights services among sub-Saharan African women immigrants in Spain

DOI: 10.29063/ajrh2025/v29i8s.4

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## Abstract

Despite growing African immigration to Spain, research that examines how language barriers affect acculturative stress and access to sexual and reproductive health and rights (SRHR) services by sub-Saharan women is scarce. This study addresses this gap in knowledge by investigating the relationships between proficiency in Spanish language, acculturative stress and access to SRHR services among 384 African immigrant women in Spain using a cross-sectional, quantitative design. Data were collected via online snowball sampling, employing validated measures of Spanish proficiency (CEFR), acculturative stress (RASI), and SRHR access (WHO/UNFPA). Structural equation modeling (SEM) revealed that higher Spanish proficiency reduced acculturative stress ( $\beta = -0.50$ ,  $*p < 0.01$ ) and directly improved SRHR access ( $\beta = 0.56$ ,  $*p < 0.01$ ), with stress mediating this relationship (indirect effect:  $\beta = 0.24$ ,  $*p < 0.05$ ). Findings highlight language proficiency as a dual pathway for mitigating stress and enhancing healthcare access. The findings of this study are important for immigration and re-settlement policies to promote cultural integration, access to social services, as well as culturally sensitive care, especially for minority women in order to address systemic disparities. (*Afr J Reprod Health* 2025; 29 [8s]: 31-42).

**Keywords:** Spanish Language Acquisition, SRH, Acculturative Stress

## Résumé

Malgré l'augmentation de l'immigration africaine en Espagne, les recherches examinant l'impact des barrières linguistiques sur le stress d'acculturation et l'accès aux services de santé et droits sexuels et reproductifs (SDSR) des femmes subsahariennes sont rares. Cette étude comble cette lacune en explorant les relations entre la maîtrise de la langue espagnole, le stress d'acculturation et l'accès aux services SDSR chez 384 femmes immigrantes africaines en Espagne, à l'aide d'une conception quantitative transversale. Les données ont été collectées via un échantillonnage en boule de neige en ligne, utilisant des mesures validées de la maîtrise de l'espagnol (CEFR), du stress d'acculturation (RASI) et de l'accès aux SDSR (OMS/UNFPA). La modélisation par équations structurelles (SEM) a révélé qu'une meilleure maîtrise de l'espagnol réduisait le stress d'acculturation ( $\beta = -0,50$ ,  $p < 0,01$ ) et améliorait directement l'accès aux SDSR ( $\beta = 0,56$ ,  $p < 0,01$ ), le stress jouant un rôle médiateur dans cette relation (effet indirect:  $\beta = 0,24$ ,  $p < 0,05$ ). Ces résultats soulignent la maîtrise linguistique comme une double voie pour atténuer le stress et améliorer l'accès aux soins de santé. Les conclusions de cette étude sont cruciales pour les politiques d'immigration et de réinstallation afin de promouvoir l'intégration culturelle, l'accès aux services sociaux et des soins culturellement sensibles, en particulier pour les femmes issues de minorités, afin de réduire les disparités systémiques. (*Afr J Reprod Health* 2025; 29 [8s]: 31-42).

**Mots-clés:** Acquisition de l'espagnol, SRH, Stress d'acculturation

## Introduction

According to the International Organization for Migration (IOM), the past two decades have seen a rapid increase in the number of migrants from 153 million in 1990 to 281 million in 2020, with women accounting for almost half of them<sup>1,2</sup>. In Spain, sub-Saharan African women constitute an increasing migrant population segment and face the most severe barriers to public health services among

migrant groups<sup>3</sup>, leading to severe sexual and reproductive health and rights (SRHR), consequences including pregnancy complications, sexually transmitted infections, STIs, unsafe abortions, and sexual violence<sup>1</sup>. Undocumented migrants across European Union, EU countries face significant restrictions in accessing complete sexual/reproductive healthcare, except for limited services like prenatal care and HIV treatment<sup>4</sup>. In Spain, Javier et al. document that 20% of

immigrants confront healthcare access barriers from language problems, bureaucratic hurdles, and COVID-19-related challenges<sup>5</sup>. However, this study only focusses on language barrier in relation to acculturative stress and access to SRHR services among immigrant sub-Saharan African women in Spain.

When immigrating to a new country, learning the language of the new country of residence is an effective step towards gaining the ability to study, find a job, use health and social care services, and apply for citizenship<sup>6</sup>. Various studies have shown that language learning significantly increases access to health services for immigrant women<sup>7-11</sup>. The results of the study by Pérez-Sánchez *et al.*<sup>12</sup> showed that the most common barrier to sexual and reproductive health services were lack of information (57%), followed by language issues (43%), cultural differences (39%), economic status (25%), administrative barriers (25%), and discrimination (14%).

Immigrant women have significantly higher rates of mental disorders and suicide rates over their lifetimes than Spanish-born women, and they have lower quality of life and self-esteem, and they rank lower than Spanish-born women in terms of access to health care<sup>13</sup>. Immigrant women often face legal and cultural discrimination and are more likely to be victims of domestic violence due to their poor social status<sup>14</sup>. In addition, the vast majority of refugees face many problems in their destination countries, such as economic and employment problems, and constraints such as lack of access to health care, intercultural families, and issues related to children and immigration. These are part of the problems refugees face in the process of assimilation in the host country<sup>15</sup>. These challenges contribute to acculturation stress, limit access to SRHR healthcare. Acculturation stress associated with immigration is not the same as general life stress, but rather a negative psychological experience that results directly from managing the ongoing demands of a bicultural environment, membership in bicultural groups, and bicultural identity throughout an individual's life<sup>16</sup>. Acculturation stress encompasses multiple psychosocial problems and stressors that can be summarized into four factors: (a) perceived discrimination, (b) familiar acculturation gaps, (c)

stress related to learning the new language, and (d) a reduced sense of belonging to school and community due to challenges in the structured school environment<sup>17</sup>. Acculturation stress is associated with negative mental health outcomes, such as depression, anxiety, psychological distress, and suicidal ideation (SI)<sup>18</sup>.

Acculturation also shapes how immigrants balance traditional beliefs and new norms and influences their acceptance of health information, especially on sensitive topics<sup>19</sup>. Various research findings suggest that cultural differences and acculturative stress are another barrier to accessing sexual and reproductive health services<sup>7,12,20,21</sup>.

One of the effective factors in reducing acculturation stress among African immigrant women in Spain is learning Spanish, and this has been confirmed by the findings of various studies that learning a language (English, Spanish, etc.) has a positive effect on acculturation and reducing acculturation stress among immigrants<sup>22-28</sup>. In general, when learning a new language, people do not only learn vocabulary and grammar; they also absorb cultural norms and practices associated with that language<sup>29</sup>.

This study addresses a critical gap in the literature by examining the interplay of Spanish language proficiency, acculturative stress, and access to SRHR services among sub-Saharan African immigrant women in Spain. While previous studies have explored language barriers or acculturative stress among Latino or Asian migrants in Europe<sup>30-34</sup>, few have focused on African women, despite their unique socio-cultural challenges, such as heightened discrimination and lower social integration<sup>3</sup>. Moreover, existing research often examines these factors in isolation, neglecting their combined impact on SRHR access<sup>7,35</sup>. The innovation of this study lies in the integration of three key components: language proficiency as a determinant variable, acculturation stress as a psychological outcome, and access to SRHR services as an indicator of health equity. By focusing on a less studied population and analyzing these variables simultaneously, this research opens new horizons in interdisciplinary studies of migration, health, and language, and can serve as the basis for policymaking that is sensitive to linguistic-cultural differences in the provision of

health services in immigrant-receiving communities.

## Methods

### Study design

This study employed a cross-sectional research design with a descriptive-analytical quantitative approach to examine the effect of Spanish language proficiency on acculturative stress and access to SRHR services among sub-Saharan African women immigrants in Spain.

### Participants

The statistical population includes all immigrant women born in sub-Saharan Africa and residing in Spain. Based on official data, the number of sub-Saharan African migrants is estimated at 650,000, nearly half of whom are women<sup>36</sup>. Eligibility criteria included: (1) self-identified women born in sub-Saharan Africa, (2) residing in Spain for  $\geq 6$  months (to ensure adequate exposure to acculturative stressors and SRHR services), and (3) aged 20–50 years. The age range of 20 to 50 years was purposefully selected to cover the reproductive age group most relevant to the study's focus. Although the reproductive age is typically defined as 15 to 49 years<sup>37</sup>, the lower age limit was set at 20 to exclude adolescent pregnancies, as this group has distinct psychosocial characteristics and healthcare needs that could introduce confounding variables beyond the study's objectives<sup>38</sup>. The upper age limit was extended to 50 years to account for the variability in the onset of menopause among African migrant women. This age range ensures the study focuses on women for whom acculturation stress and access to SRHR services are most critical for public health planning. Participants with  $>20\%$  missing data were excluded.

### Sampling and recruitment

Using Cochran's formula for finite populations ( $N = 325,000$ ), with a 95% confidence level ( $Z = 1.96$ ) and 5% margin of error ( $e = 0.05$ ), the minimum sample size was 384. To account for potential non-response, 450 questionnaires were distributed. Of these, 400 were completed (response rate = 88.9%),

and 16 were excluded due to incomplete data, yielding a final sample of 384. Study participants were recruited through established African immigrant community platforms in Spain, including: (1) Facebook groups ('Africans in Barcelona', 'All Nigerians in Spain', 'African in Spain', and 'South African in Spain'); (2) Telegram channels ('Grupo Emigrantes', 'Inmigrantes Spain', and 'Africanstudentsfurom'); (3) online forums (InterNations and Expatica African communities); and (4) snowball sampling through African community networks. These platforms represent well-known gathering spaces for sub-Saharan African immigrant populations in Spain. For snowball sampling, initial participants (seeds) were selected from active and influential members in digital platforms, such as Facebook group administrators or highly engaged users in Telegram channels and online communities, representing women from diverse Sub-Saharan African regions (West, East, and Southern Africa). These seeds shared the questionnaire link via private messages or group posts on platforms like WhatsApp, Telegram, or Facebook with eligible peers. To ensure diversity, seeds were chosen from different countries (e.g., Nigeria, Kenya, South Africa) and varied ages and lengths of residence. Each participant was advised to refer up to three eligible peers to prevent over-reliance on specific networks.

### Measures

The data collection instrument consisted of three standardized questionnaires: the Spanish language proficiency questionnaire (self-assessment based on the common European framework of reference for languages framework, CEFR)<sup>39</sup>, the revised acculturative stress inventory RASI, Scale<sup>40</sup>, and the access to SRHR services questionnaire based on validated WHO and UNFPA instruments<sup>41</sup>. Table 1 summarizes the measurement indicators for each questionnaire. The research questionnaires were originally developed in English and systematically translated into four key languages: (1) Spanish (host country language), (2) French (official language of 21 African countries including Senegal and Cameroon), (3) Portuguese (official language in Angola and Mozambique), and (4) Swahili (East African lingua franca). This selection was based on

three criteria: (a) official status in healthcare systems of origin countries, (b) educational use in schools/universities, and (c) broad comprehension across multiethnic populations. The quality assurance protocol involved: (i) back-translation by native speakers, (ii) pilot testing with 20 participants per language group, and (iii) final review by a five-member panel of bilingual experts (linguists and health specialists with Africa-region experience). Ultimately, questionnaires were administered according to participants' stated preferences: Spanish (68%), French (22%), Portuguese (8%), and Swahili (2%). The validity of the questionnaire was confirmed by 5 experts in Spanish and psychology, and internal consistency was excellent for all scales: Spanish proficiency ( $\alpha = 0.89$ ), RASI acculturative stress ( $\alpha = 0.91$ ), and SRHR access ( $\alpha = 0.87$ ), exceeding the 0.70 threshold. Table 1

### **Procedure**

Data collection was conducted online from January to April 2025, focusing on reaching Sub-Saharan African migrant women. Participants accessed questionnaires via secure links shared through Facebook groups, Telegram channels, online communities (InterNations and Expatica), and snowball referrals. The self-administered questionnaire took approximately 20–30 minutes to complete. Responses were collected anonymously using Google Forms, a simple and accessible online survey platform. Questionnaire links were shared via private messages and group posts on Facebook, Telegram, WhatsApp, and online communities. To prevent duplicate responses, IP address verification was used. Follow-up reminders were sent after one week via WhatsApp messages or group notifications on Facebook and Telegram to non-respondents. To support the snowball sampling process, initial participants received a standardized invitation message outlining the study's purpose and eligibility criteria (being female, born in Sub-Saharan Africa, and residing in Spain). This ensured consistency in study introduction. To minimize potential bias in snowball sampling, recruitment was monitored to ensure representation from diverse Sub-Saharan African regions (West, East, and Southern Africa), with no single network comprising more than 30% of the final sample.

### **Data analysis**

A preliminary analysis was conducted using Structural Equation Modeling (SEM) with LISREL software (version 8.72) to test hypothesized pathways: Spanish language proficiency as a predictor of acculturation stress, which in turn affects access to SRHR services among sub-Saharan African migrant women. SEM was chosen for its ability to handle latent variables and simultaneously test mediating effects. Model fit was evaluated using indices such as chi-square ( $\chi^2$ ), Comparative Fit Index (CFI), Incremental Fit Index (IFI), Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), and Root Mean Square Error of Approximation (RMSEA < 0.08). Demographic characteristics were included in descriptive analyses but excluded from structural equation modeling to preserve model parsimony, consistent with methodological recommendations for multivariate analysis<sup>42</sup>.

### **Ethical considerations**

This study adhered to the principles of the Declaration of Helsinki to ensure ethical conduct and protect Sub-Saharan African migrant women, a vulnerable population, during online data collection. No formal ethics committee approval was required due to the study's low-risk, anonymous, and online nature, which involved self-administered questionnaires with no direct intervention or collection of identifiable data, aligning with Helsinki provisions for exempt studies<sup>43</sup>. Key Helsinki principles applied included informed consent, confidentiality, minimizing harm, non-coercion, and respect for vulnerable participants. Before accessing the questionnaire, participants received digital informed consent forms in Spanish, French, Portuguese, and Swahili. These forms clearly explained the study's purpose, the sensitive nature of SRHR topics, the right to withdraw at any time without consequences, and the assurance of anonymity; participants had to confirm consent to proceed. To ensure confidentiality, no identifying information (e.g., names or email addresses) was collected, and responses were stored securely on Google Forms servers. IP address verification was used solely to

**Table 1:** Questionnaire details table

Questionnaire Name	Dimensions	Items	Scale	Reference
<b>Acculturative Stress</b>		36	5-point	Revised
	• Acculturation Process	14	Likert	Acculturative
	• Social Stress	13		Stress Inventory
	• Perceived Discrimination	9		
<b>Spanish Language Proficiency</b>		34	5-point	CEFR-based
	• Listening	7	Likert	
	• Reading	7		
	• Speaking Interaction	7		
	• Speech Production	7		
	• Writing	6		
<b>SRHR</b>		16	5-point	WHO/UNFPA
	• Awareness	4	Likert	tools
	• Financial Access	4		
	• Staff Attitudes	4		
	• Cultural Accessibility	4		

prevent duplicate responses and not for identification. To minimize harm, considering the potential psychological distress from SRHR topics among migrant women, contact information for free counseling services (e.g., health helplines in Spain) was provided at the questionnaire's end. Participation was voluntary, with no financial or other incentives offered to avoid coercion. Data are used solely for this study's purposes and will be securely deleted after analysis, respecting the rights and dignity of participants.

## Results

In this study, 384 African migrant women residing in Spain, aged between 20 and 50, were surveyed. As shown in Table 2, the demographic characteristics of the participants show the average age of the sample was 36 years, and their length of residency in Spain ranged from 6 months to 10 years. In terms of education level, 52% held a bachelor's degree, 28% a master's degree, and 20% a high school diploma. About 58% of the respondents lived in major cities such as Madrid and Barcelona, while 42% resided in smaller towns. Regarding employment status, 51% were employed, 32% were homemakers, and 17% were seeking work. The participants' Spanish language proficiency ranged from beginner to intermediate, and the majority (68%) had been learning Spanish for between 6 months and 2 years. Notably, 72% of participants reported residing in Spain for >2 years,

suggesting established migrant experiences. However, data on legal status (e.g., visa type) were not collected, which may limit generalizability to recent or undocumented migrants.

To evaluate and analyze the structural relationships between latent and observed variables in the proposed structural model, SEM was employed. The theoretical structural model was estimated using LISREL statistical software based on observed data from the study sample. Parameter estimation in the proposed structural model was conducted using Maximum Likelihood (ML) method. In structural equation modeling, the analysis of relationships between constructs is based on the covariance matrix. Accordingly, the first step involved computing the covariance matrix, with results presented in Table 3. As shown, the covariances between constructs in the proposed structural model were statistically significant.

The structural and conceptual model fit of the research in the LISREL software environment in the standard estimation mode (factor loading and standard path coefficient) and the test of significance of the paths (T-test) are shown in Figures (1) and (2), respectively.

In Figure 1, which shows the structural equation modeling of the research in the standard estimation state, it can be seen that the factor loading of all observed variables (items or indicators) in each construct is greater than 0.5. Also, the standardized path effect coefficients show that the direct effect of the Spanish language

**Table 2:** Demographic characteristics of participants

Variable	Category	Number (n=384)	Percentage (%)
Age (years)	20-25	20	5.2%
	26-30	76	19.8%
	31-35	115	30.0%
	36-40	96	25.0%
	41-45	48	12.5%
	46-50	29	7.5%
Mean age ( $\pm$ SD)	36 ( $\pm$ 6.8)	-	-
Length of residence	6 months - 1 year	58	15.1%
	1-2 years	50	13.0 %
	2-5 years	173	45.1 %
	5-10 years	103	26.8 %
Education	High School	77	20.0%
	Bachelor's	200	52.0%
	Master's	107	28.0%
Residence area	Major cities (Madrid/Barcelona)	223	58.0%
	Small towns	161	42.0%
Employment status	Employed	196	51.0%
	Homemaker	123	32.0%
	Job seeker	65	17.0%
Spanish proficiency	Beginner	115	30.0%
	Intermediate	231	60.0%
	Advanced	38	10.0%
Language learning duration	6 months - 1 year	154	40.0%
	1-2 years	107	28.0%
	>2 years	123	32.0%

**Table 3:** Covariance matrix of the constructs present in the structural model of the research

Variables	Fluency in Spanish	Cultural stress	Access to SRHR services
Fluency in Spanish	1		
Cultural stress	** - 0.55	1	
Access to sexual and reproductive health services	** 0.61	** - 0.49	1

\*\*Significant at the 1 percent error level,

\*Significant at the 5 percent error level

proficiency variable on cultural stress and access to SRHR services is -0.50 and 0.56, respectively, and the direct effect of the cultural stress variable on access to SRHR services is -0.43.

In Figure 2, which shows the structural equation model of the study in the T-test mode (or critical ratio mode), it can be seen that the t-statistic values related to all factor loadings are greater than the critical value of 1.96 ( $t < 1.96$ ), meaning that in each case of the constructs, the factor loading values are significant at the 5% error level and none of the indicators (components) will be removed from the structural model. The estimation of the t-statistic values shows that the t-statistic values of

the software are not between the two critical values of 1.96 and -1.96 ( $1.96 < t$  or  $1.96 > t$ ), which means that the expected relationships between the variables of the presented structural model are significant at the 5% error level.

In traditional statistical methods, researchers often base their decision to reject or accept a hypothesis on a single criterion. However, in SEM and testing theoretical research models, no such single criterion exists that alone can determine whether the theoretical model is acceptable. The issue of model fit in inferential statistics is highly diverse and complex, with numerous goodness-of-fit indices available—so many that there is no

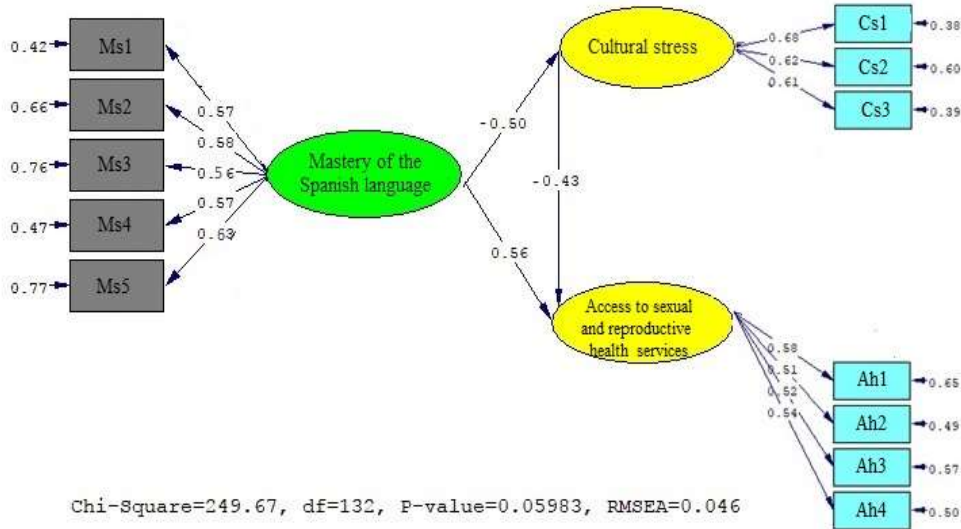


Figure 1: Fitting the research structural model in standard estimation mode

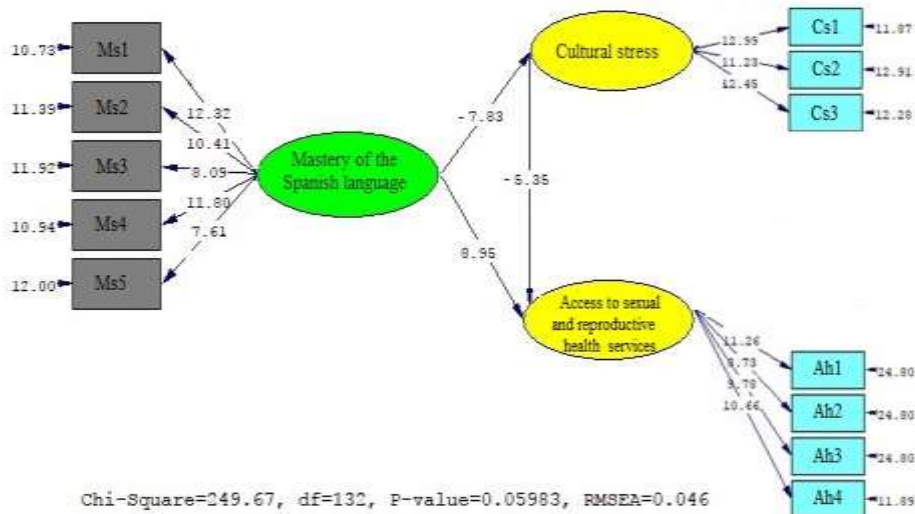


Figure 2: Fitting the structural model of the research in the T-test mode

Table 4: Estimation of fitness indices to measure the suitability of the research structural model

INDEX	Approximate acceptance range	Estimated Value
Chi-squared over degrees of freedom (CMIN/DF)	Less than 3	1.89
Root Mean Square Error of Estimate (RMSEA)	Less than 0.08	0.046
Comparative Fit Index (CFI)	0.8 to 1	0.95
Incremental Fit Index (IFI)	0.8 to 1	0.94
Goodness of Fit Index (GFI)	0.8 to 1	0.91
Adjusted goodness-of-fit index (AGFI)	0.8 to 1	0.88

**Table 5:** Results of parameter estimation in structural equation modeling to test research hypotheses

Path	Direct impact	t	Indirect impact
The effect of Spanish language proficiency on cultural stress	- 0.50	-7.83	-
The impact of cultural stress on access to SRHR services	- 0.43	- 5.35	-
The impact of Spanish language proficiency on access to SRHR services	0.56	8.95	0.24

universal agreement on an optimal test. As a result, researchers in different studies have reported varying sets of fit indices. The most important fit indices for measuring the appropriateness of the structural and conceptual model fit, as well as the approximate acceptable range of each index, are listed in Table 4. As can be seen, the goodness-of-fit indices obtained by the LISREL software for measuring the suitability of the structural model are in the approximate acceptance range. This means that the data observed in the statistical sample under study largely conforms to the structural model of the research. In other words, the values of the goodness-of-fit indices obtained indicate a proper fit of the structural model of the research. It can be said that overall, the presented structural model is a relatively appropriate model and has the ability to explain the structural relationships between the variables present in the presented model.

The results of parameter estimation in structural equation modeling to test the research hypotheses based on Figures (1) and (2) are given in Table 5. As observed, Spanish language proficiency has a significant negative direct effect on cultural stress ( $t < -1.96$ ) and a significant positive direct effect on access to SRHR services ( $t > 1.96$ ). Additionally, cultural stress itself has a significant negative direct effect on access to SRHR services ( $t < -1.96$ ). Furthermore, given the significant negative effect of Spanish proficiency on cultural stress and the negative effect of cultural stress on access to SRHR services, it can be concluded that Spanish proficiency indirectly and positively influences access to these services among African immigrant women by reducing cultural stress. Thus, cultural stress plays a mediating role in the relationship between Spanish language proficiency and access to SRHR services among African immigrant women. As Spanish proficiency increases, cultural stress decreases significantly, while access to SRHR services increases significantly. Moreover, a one standard deviation increase in Spanish

proficiency leads to an indirect improvement in access to SRHR services through the reduction of cultural stress.

## Discussion

The results of data analysis showed that Spanish language proficiency has a negative and significant effect on access to SRHR services with the mediating role of cultural stress. Spanish language proficiency has been identified as a key factor in facilitating communication, understanding health information, and building mutual trust between immigrants and health care providers. In this study, findings suggest that language proficiency not only directly improves access to SRHR services among African immigrant women, but also indirectly strengthens this relationship by reducing levels of cultural stress. Cultural stress, often caused by cultural conflicts, unfamiliarity with social norms, and communication limitations, can lead to feelings of isolation, anxiety, and avoidance of interaction with formal institutions, including health centers. Meanwhile, mastering the official language of the host country helps reduce cultural stress by reducing misconceptions, increasing a sense of belonging and psychological control over the environment, and strengthening self-efficacy in everyday interactions. Consequently, women who experience less cultural stress are more likely to seek health services, especially sensitive and trust-based services such as sexual and reproductive health. This bimodal causal pattern suggests that linguistic and psychosocial policies can simultaneously reduce structural and psychological barriers to access to health services.

The results of the data analysis indicated that Spanish language proficiency has a significant negative effect on acculturation stress. This finding aligns with the results reported by previous studies<sup>22-28</sup>. This effect can be attributed to the fact that acquiring Spanish enhances migrants'

understanding of social and Acculturative norms, reduces feelings of alienation, facilitates access to healthcare, legal, and employment services, enables better comprehension of employment contracts and communication of symptoms to medical professionals, expands social networks, and strengthens cultural identities. Collectively, these factors promote smoother cultural adaptation and consequently alleviate acculturation stress.

The results of the data analysis showed that Spanish language proficiency has a positive and significant impact on access to SRHR services. This is consistent with the findings of another researchers<sup>7-13</sup>. Fluency in Spanish, the official and dominant language in Spain, plays a key and determining role in the access of African immigrant women to SRHR services. This is important because language is the main means of communication between health care providers and patients; better fluency in the host language allows immigrant women to better understand medical information, receive specialized advice, and express their needs and concerns. Several studies have shown that lack of native language proficiency creates serious barriers to accessing health services, including the inability to book appointments, understand medical orders, and follow treatment recommendations. Furthermore, poor language ability is associated with increased stress and anxiety from dealing with a complex and non-native health system, which in turn reduces willingness and ability to access these services. Therefore, increasing language skills can reduce cultural and linguistic distance, improve the quality of health communication, and ultimately improve access to and utilization of sexual and reproductive health services.

The results of the data analysis showed that acculturative stress has a negative and significant effect on access to SRHR services. This is consistent with the findings of other researchers<sup>7,12,20,21</sup>. Cultural stress, which results from the challenges and psychological pressures associated with adapting to and adapting to a new culture, plays an important role in limiting immigrant women's access to SRHR services. This type of stress can lead to feelings of insecurity, anxiety, and distrust of host health systems, especially when women face cultural incongruence,

discrimination, or social bias. It can argue that higher cultural stress is associated with a tendency to use health services less, including sexual and reproductive health services, because it can lead to reduced motivation to seek help, increased fear of judgment or discrimination, and disruption of health decision-making processes. Furthermore, cultural stress can impair an individual's ability to communicate effectively with health care providers, thereby reducing the quality of care received. Therefore, reducing cultural stress through psychosocial supports and increasing cultural awareness in the health system can contribute significantly to improving immigrant women's access to and utilization of SRHR services.

## Study strengths

This study has several notable strengths. First, the use of validated, multilingual instruments (e.g., CEFR-based Spanish proficiency scale, RASI, and WHO/UNFPA-based SRHR access questionnaire) ensured reliable and culturally sensitive data collection. Second, the inclusion of participants from diverse sub-Saharan African backgrounds, recruited through multiple platforms (e.g., social media, community networks), enhanced the representativeness of the sample. Third, the translation of questionnaires into Spanish, French, Portuguese, and Swahili, with rigorous back-translation and pilot testing, minimized language barriers and improved response rates. These methodological strengths bolster the validity of the findings for studying SRHR access in a vulnerable population.

## Limitations

This study has four primary limitations. First, the use of purposive sampling may limit generalizability. Second, reliance on self-report instruments introduces potential response biases, including social desirability and recall biases. Third, the sample may not fully represent all sub-Saharan African immigrant groups due to recruitment challenges. Fourth, although we controlled for key demographic variables, unmeasured confounders (e.g., immigration status,

prior healthcare system familiarity) could influence the observed relationships.

## Recommendations for future research

Future studies should employ mixed-methods approaches, combining quantitative surveys with qualitative interviews to capture nuanced experiences of SRHR access. Stratified sampling could ensure inclusion of marginalized groups with limited digital access. Additionally, longitudinal designs are recommended to track changes in language proficiency and SRHR access over time, particularly as women adapt to Spain's cultural and healthcare systems. Exploring intersectional factors (e.g., education, ethnicity, immigration status) could further elucidate moderators of these relationships.

## Implications for policy and practice

To enhance access to SRHR services for sub-Saharan African women immigrants in Spain, aged 20–50 years, several actionable steps should be implemented. First, Spanish language training programs for migrants should include SRHR-specific terminology to improve health literacy, enabling women to confidently navigate healthcare systems and articulate their needs. Second, healthcare providers should undergo mandatory training in culturally sensitive and trauma-informed care to better address the unique challenges faced by these women, fostering trust and reducing barriers caused by acculturative stress. Third, partnerships with African diaspora organizations should be established to deliver targeted SRHR outreach, using multilingual resources such as infographics, videos, and community workshops tailored to the reproductive and perimenopausal needs of this population. These strategies can directly address linguistic and psychosocial barriers, ensuring equitable access to SRHR services and supporting better health outcomes.

## Conclusion

This study highlights the pivotal role of Spanish language proficiency in reducing acculturative stress and improving access to SRHR services

among sub-Saharan African women immigrants in Spain, aged 20–50 years. The findings reveal that fluency in Spanish not only facilitates direct communication with healthcare providers but also mitigates the psychosocial barriers that hinder engagement with SRHR services. By demonstrating the mediating role of acculturative stress, this research underscores the interconnectedness of linguistic, cultural, and health-related challenges faced by this population. These insights contribute to a deeper understanding of health disparities among migrant women and emphasize the need for targeted interventions to promote equitable healthcare access. The study lays a foundation for future research to explore additional factors influencing SRHR access and to develop comprehensive strategies that empower migrant women to achieve better health outcomes.

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