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The acceptance of xenotransplantation among African immigrants living in Spain[☆]



Aceptación del xenotrasplante de órganos entre los inmigrantes Africanos residentes en España

Despite the improvement in donation rates,¹ human organs are insufficient to cover basic transplantation needs. In recent months and after overcoming various immunological problems, xenotransplantation has been growing in importance since the first clinical xenotransplantation was performed.² This unlimited source of organs could be the definitive solution for transplantation.

However, xenotransplantation involves genetic manipulation of animals as well as ethical and moral factors that may lead to social rejection.³ In countries like Spain that have preclinical xenotransplantation programs, social acceptance among the existing population is quite favourable,⁴ but the same is not true of immigrant population groups.^{5,6} This is important in southern Europe, where the percentage of the immigrant population is increasing, specifically Latin American and African immigrants. The attitude of the Latin American population towards xenotransplantation has been shown to be less accepting than the Spanish population.⁶ The attitude of the African population, which is the largest immigrant population group in Spain and Europe, has not yet been studied.

The objectives of this study are to determine the attitude towards solid organ xenotransplantation among the population born in Africa residing in Spain and to analyze the associated psychosocial variables.

The project was carried out in the population ≥ 15 years of age born on the African continent and residing in Spain, taking advantage of the infrastructure of the project 'Organ donation among the African immigrant population' carried out by the

International Donor Collaborative Project.⁷ The sample was stratified based on the nationality of origin of the respondent, age and sex.⁷ Their attitude was analyzed using the validated Xenotransplantation attitude questionnaire 'PCID - XenoTx Rios' (Questionnaire of the International Collaborative Donor Project on the attitude towards Xenotransplantation, developed by Dr Ríos)⁸ with a total explained variance of 61.18% and a Cronbach's alpha internal consistency reliability coefficient of 0.72.

The questionnaire was self-completed anonymously. In each of the population centers where the sampling was carried out, the cooperation of immigrant associations was necessary to locate potential participants. For each case, we verified that the potential survey subject met the stratification criteria, and the participants were explained that the opinion survey was completely anonymous.

For the statistical analysis, the Student's t test, chi-squared test, and a logistic regression analysis were applied.

The degree of completion of the questionnaire was 87% (3618 surveys completed by 4145 selected participants). Regarding the attitude towards xenotransplantation, if the results were comparable to those achieved with human donors, 15% (n = 548) would be in favor, 40% (n = 1431) undecided, and the remaining 45% (n = 1639) against. Regarding the attitude if the results were worse than those achieved with human donors, 10% (n = 373) would be in favor, 42% (n = 1527) undecided and the remaining 48% (n = 1718) against.

After completing the bivariate analysis (Table 1), a logistic regression analysis was carried out, which obtained the

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Table 1 – Factors associated with the attitude towards xenotransplantation between the African population residing in Spain; Bivariate analysis.

Variable	Attitude in favor of xenotransplantation	Attitude against xenotransplantation	P
Geographical variables			
Country of birth	Cameroon	Mali	<0.001
	Ivory Coast	Gambia	
Continental zone	Central Africa	North Africa	<0.001
Traditional African areas	Central Africa	North Africa	
		West Africa	0.005
Socio-Personal variables			
Age	31 ± 8 yrs	33 ± 9 yrs	<0.001
Sex	–	–	0.560
Marital status	–	–	0.852
Children?	–	–	0.092
Level of education	University studies	No studies	<0.001
Religious variables			
Religion	Christian	Muslim	<0.001
Opinion of religion about organ transplantation	Know that it is favorable	Believe that it is against	<0.001
Social Interaction Variables			
Discuss organ donation and transplantation with the family	Yes	No	<0.001
Opinion of spouse/partner about donation and transplantation	Favorable	Unfavorable	<0.001
Cooperate in prosocial activities	Yes	No	<0.001
Variables related with donation and human organ transplants			
Attitude towards human organ donation	In favor	Not in favor	<0.001
Personal experience with organ donation and transplantation	–	–	0.135
Believe that one might need a transplant in the future	Yes	No	<0.001
Attitude towards related living donor	In favor	Not in favor	<0.001

independent variables associated with the attitude towards xenotransplantation (Table 2): (1) country of origin; (2) level of education; (3) religion of the respondent; (4) having discussed organ donation and transplantation with her/his family; (5) attitude towards human organ donation; (6) thoughts of possibly needing a transplant oneself in the future; and (7) participation in prosocial activities.

The new social reality that migratory flow is causing worldwide has implications in healthcare. Therefore, it is necessary to take these groups into account for any activity with a social implication if they are to be successful. For xenotransplantation, in addition to overcoming immunological and technical barriers, social acceptance must also be achieved. Nonetheless, xenotransplantation acceptance rates vary greatly in population studies, ranging from 40% to 75%.^{4–6,9}

In the African population residing in Spain, no studies have been published in their countries of origin that would allow us to compare the results obtained. In this study, it is observed that their attitude is not favorable, and in the Western world it is only comparable to the data obtained from the Latin American immigrant population residing in Florida, where only 10% are in favor.⁹ Compared to other studies that use this same questionnaire, this group presents the most negative attitude.^{4–6} In the Spanish population, however, the attitude in favor is around 70%.⁴

It should be noted that healthy persons find it difficult to imagine themselves so sick as to require xenotransplantation. In contrast, this situation is quite different in patients awaiting transplantation. Thus, some authors have reported greater willingness to receive xenotransplants among patients than

among the general population due to their pragmatic viewpoint, where survival prevails over other ethical concerns.¹⁰

Finally, the close relationship observed between the attitude towards human organ donation and xenotransplantation can be used as indirect promotion, as this group preferentially requires campaigns promoting human organ donation due to their unfavorable attitude.⁷ Specific campaigns about xenotransplantation awareness are complex to design for this population, especially considering that they require a specific approach, and there is generally a language barrier. However, working groups with preclinical xenotransplantation projects must keep this population in mind as a priority group when designing information and social awareness activities, as this group is often not well informed.

In conclusion, we can say that the attitude towards xenotransplantation of Africans residing in Spain is unfavorable and is influenced by several psychosocial factors.

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Table 2 – Factors associated with the attitude towards xenotransplantation among the African population living in Spain; Multivariant logistic regression analysis.

Variable	Regression coefficient (β)	Error Standard	Odds Ratio (Confidence Interval)	P
Country of Origin:				
Mali (n = 402)			1	
Algeria (n = 441)	1.097	0.246	2.994 (4.854–1.848)	(0.001
Morocco (n = 1188)	1.033	0.218	2.808 (4.310–1.831)	(0.001
Senegal (n = 468)	1.180	0.239	3.257 (5.208–2.036)	(0.001
Nigeria (n = 362)	1.056	0.249	2.873 (4.672–1.763)	(0.001
Ghana (n = 237)	0.327	0.290	1.386 (2.450–0.784)	0.260
Cameron (n = 41)	1.267	0.417	3.546 (8.064–1.567)	0.002
Ivory Coast (n = 24)	0.928	0.536	2.531 (7.246–0.884)	0.083
Mauritania (n = 22)	1.932	0.597	6.896 (22.222–2.145)	0.001
Guinea (n = 337)	1.150	0.251	3.154 (5.154–1.930)	(0.001
Gambia (n = 30)	1.425	0.609	4.149 (13.698–1.259)	0.019
Other countries (n = 66)	1.462	0.399	4.310 (9.433–1.972)	(0.001
Level of education:				
None (n = 1269)			1	
Primary (n = 1674)	0.065	0.129	1.067 (1.375–0.828)	0.613
Secondary (n = 580)	0.025	0.164	1.025 (1.412–0.744)	0.878
University (n = 95)	1.780	0.264	5.917 (10–3.533)	<0.001
Religion:				
Islam (n = 2.816)			1	
Christianity (n = 475)	0.712	0.156	2.040 (2.770–1.503)	<0.001
Other Religions (n = 80)	0.303	0.345	1.353 (2.659–0.688)	0.380
Atheist – Agnostic (n = 247)	0.423	0.201	1.526 (2.262–1.029)	0.035
Discuss organ donation and transplants with family members:				
No (n = 2550)			1	
Yes (n = 1068)	0.458	0.120	1.582 (1.250–2.202)	<0.001
Attitude towards human organ donation:				
Not in Favor (n = 2506)			1	
In favor (n = 1112)	1.069	0.119	2.915 (3.676–2.304)	<0.001
Believe that one may need a transplant in the future:				
Doubt (n = 2399)			1	
Yes (n = 871)	0.461	0.121	1.584 (2.012–1.251)	<0.001
No (n = 348)	0.664	0.173	1.941 (2.724–1.383)	<0.001
Collaborate in pro-social activities:				
No, and won't (n = 681)			1	
Yes (n = 1.290)	1.288	0.187	3.623 (5.235–2.512)	<0.001
No, but would like to. (n = 1626)	0.034	0.190	1.035 (0.712–1.503)	0.858

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Menopausal in breast cancer and the effectiveness of a dietary supplement: Serotomama project[☆]



Menopausia en el cáncer de mama y la efectividad de un complemento alimenticio: proyecto Serotomama

Menopausal symptoms in the context of breast cancer patients are closely related to different treatments and impact the quality of life (QoL) of breast cancer patients,¹ and add to the already difficult experience associated with the diagnosis and management of breast cancer. Safe and effective therapies are needed that do not stimulate breast cell proliferation, avoid interference with cytochrome P450 metabolism.^{2,3}

In this context, the SEROTOMAMA project hoped that this research would lead to the establishment of standard management practices that include the evaluation of menopausal symptoms in breast cancer patients, and aimed to establish the utility and safety of a food supplement for relieving menopausal symptoms. Secondary endpoints included impact on QoL and treatment compliance.

Principal considerations and conceptual framework enrolled 56 participants with breast cancer and climacteric symptoms such as hot flushes and/or sleep disturbances between February 2019 and February 2020. Patients without hot flashes and/or with active chemotherapy treatment and/or stage IV cancer at the time of the study were excluded.

For assessment of menopausal symptoms, we used the Spanish version of the menopause rating scale (MRS),⁴ and the frequency of hot flashes; and patients' perception of QoL and health status were measured using the EORTC QLQ-C30 questionnaire⁵ in relation to the patient's experience. The survey was carried out at baseline, at day 45 and day 90 (see Supplemental Appendix 1).

The treatment was started with two capsules per day divided into one capsule every 12 h with Serotogyn capsules (SeCap). The formula mixes ingredients that increase serotonin synthesis and inhibit serotonin reuptake is composed of L-Tryptophan (600 mg), vitamin B6 (4.2 mg), GABA (200 mg) and magnesium (56.4 mg).⁶

For the statistical analysis quantitative variables were described using the mean and standard deviation (SD), while frequency and percentage were used for qualitative variables. The Chi-square test was used to compare qualitative variables and Student's t-test was used for matched pairs.

Statistical analysis was performed using the IBM SPSS version 22.0. A p value below 0.05 was considered statistically significant.

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