

Health accessibility

Quality of life and physical, psychological and social health in the migrant population

Cristina Belén Sampedro Palacios
University of Jaén, Spain, [ORCID 0000-0003-0595-7699](https://orcid.org/0000-0003-0595-7699), cbsamped@ujaen.es

Yolanda María de la Fuente Robles
University of Jaén, Spain, [ORCID 0000-0002-2643-0100](https://orcid.org/0000-0002-2643-0100), ymfuente@ujaen.es

Jesús Hernández Galán
ONCE Foundation for Cooperation and Social Inclusion of People with Disabilities, Spain,
[ORCID 0000-0002-7939-1213](https://orcid.org/0000-0002-7939-1213), jhernandez@fundaciononce.es

Virginia Fuentes Gutiérrez
University of Jaén, Spain, [ORCID 0000-0001-6876-067X](https://orcid.org/0000-0001-6876-067X), vfuentes@ujaen.es

Received: 2023-04-18 | Accepted: 2024-02-16 | Published: 2024-05-11

Abstract: Health and migration are vital parts of the development cycle. Health should be understood not only as a state of physical and psychological well-being, but also of social well-being. Social determinants play a major role in health and, therefore, also in physical and cognitive accessibility. The aim of this study is to link both realities (migration and health), in order to study the variables of quality of life and physical, psychological and social health in the migrant population. There are three main objectives: 1) To understand the perceptions of quality of life and physical, psychological and social health of the migrant population; 2) To identify and describe pathologies and disabilities among migrants; and 3) To determine if there is accessibility to the health system (treatments and control). A quantitative methodology comprising descriptive and correlational analysis was employed. The main tool was a descriptive questionnaire, supported by three scales (The Quality of Life and Health Scale [WHOQOL-BREF]; Depression, Anxiety and Stress Scale [DASS-21]; and Multidimensional Scale of Perceived Social Support [EMAS]) previously validated and proposed by international organizations, such as the World Health Organization. The main results were that levels of quality of life, psychological health and social support are moderate in the migrant population. In addition, 47.3% of the migrant population has a health pathology, with only 29% having access to health resources. The main conclusion is that the presence of pathologies and the lack of disease control among the migrant population is a sign of the need to review the actions implemented by government institutions, such as the Common European Asylum System. In addition, there is a need to make health resources accessible to the entire population regardless of social class.

Keywords: Health, Accessibility, Quality of Life, Disability, Migration.

1. Introduction

It is said that the ability to move, or mobility, is one of the most fascinating human behaviours. Migration is an indispensable part of human evolution, survival and diversity. Since time immemorial, humans have moved to other places in search of better food, better climatic

conditions and even better defensive terrain. Human mobility, therefore, is one of the main driving forces of the development of societies and their inhabitants, both in the past and in the present (Peña and Ausín, 2015; Lotero-Echeverri and Pérez- Rodríguez, 2019; Nagurney and Daniele, 2021). There are many reasons for initiating a migratory process, such as economic, employment or health reasons. Moreover, there is no time or place in history that has not been involved in events that encourage the mobility of its citizens, such as wars or armed conflicts. Therefore, migratory flows are a constant reality at the international level (Abu-Warda, 2007; García, 2017).

In addition to migration, health is one of the factors that determines the development of people's lives, as well as the evolution of societies. Historically, health issues have slowed down or accelerated social evolution. In Spain, some examples of the slowing down of growth and development are, among others, the Spanish flu pandemic that occurred during the First World War, the smallpox epidemics and the current COVID-19 pandemic (Tió, 2022). An example of acceleration of social evolution in Spain is provided by technological development and its application to the creation of smart and accessible cities (Villar, 2007; Piñones-Rivera, 2021). Combining aspects of health and migration, armed conflicts are one of the main catalysts of the migratory process. In all cases, wars have a negative impact on people's health (Mellese, 2022). Moreover, they often have after-effects, i.e., they can lead to death or the acquisition of a disability that accompanies people during their subsequent migration.

A good example of this is the case of Nujee Mustafa, who fled the Syrian civil war by travelling 5,600 km in a wheelchair with the help of her sister. She reached Germany, where she was able to receive the necessary health care (Rojas, 2022). Another example is the situations experienced by people with disabilities in the current war in Ukraine. These people require specialised humanitarian aid measures to be provided effectively by third-sector institutions, such as the help being given by the ONCE Foundation towards the reception and sheltering of blind and disabled people, in order to address the problem of double vulnerability (ONCE Foundation and ILUNION, 2023).

These situations are reflected in the data provided by various government agencies. According to the Office of the United Nations High Commissioner for Refugees (UNHCR), there were an estimated 89.3 million forcibly displaced people in the world at the end of 2021, increasing by 0.6 million in the space of a year from 20.7 million refugees in 2020 to 21.3 million by the end of 2021 (UNHCR, 2022). Factors such as persecution, conflict, violence, climate change, economic mistreatment and limited access to basic resources all contribute to continually increasing human displacement. Likewise, the International Organization for Migration's World Migration Report 2022 (2022) shows that 281 million people are international migrants, which means that 3.6% of the world's population is residing in a country other than their country of origin.

In addition, figures from the World Health Organization (2022) state that 1.3 billion worldwide people suffer from disability. This means that 16% of the world's population suffers from some type of disability. Inaccessibility to health services or resources has been identified as one of the main difficulties suffered by these people. In turn, health inequalities lead to vulnerability and social exclusion. Migration and disability are two factors that combine to drive double vulnerability and increase the risk of social exclusion (Díaz, Huete, Huete and Jiménez, 2008).

According to the World Health Organization (1959), health is defined as a state of complete physical and social well-being, and not merely the absence of disease. This definition, for the first time, transcends the idea that health is only related to physical well-being. The WHO also identifies the achievement of the highest attainable standard of health as one of the fundamental

rights of every human being, regardless of race, religion, political ideology, economic or social conditions. This is why, when defining health, it is essential to take into account the three dimensions involved (physical, psychological and social), while also bearing in mind that the social aspect can be disabling.

These data make it possible to recognise migration as a social determinant of health. Social inequalities are often referred to as a determinant of health without specifically identifying what these social inequalities are. It is therefore important to acknowledge migration as a social determinant of health in and of itself due to: (I) The vulnerability experienced in the migration process, followed by potential social exclusion (Brunnet, Lobo, Silbeira, Kristensen and Derivois, 2020); (II) Language and cultural barriers (and knowledge of migrants' rights and duties), which promote inaccessibility of the resources of the Welfare State; (III) The process of assimilation and adaptation to the environment and the new culture that all migrants have to go through (Bollini and Siem, 1995; Sanz and Valenzuela, 2016); and (IV) The lack of support networks seen in most cases (Almeida, Molmar, Kawachi and Subramanian, 2009).

Vulnerability, as an element of migration, is a reality that must be taken into account (Comelles and Bernal, 2007; Mendola and Pera, 2021; Rodríguez, 2022). Vulnerability leads to a deterioration in people's mental and physical health, and therefore has a negative effect on the search for and establishment of social support (Bhugra, 2004). It could be said that vulnerability is both a cause and effect in the migration process, and it even favours the development of pathologies and disabilities (Díaz, Huete, Huete and Jiménez, 2008; Sampedro, Cano, De la Fuente and Fuentes, 2021). Moreover, this situation implies a disruption in the healthcare accessibility chain, as per the DALCO criteria (Spanish Association for Standardization, 2017), where, according to the criteria, all individual, regardless of their abilities or disabilities, should have equitable access to environments, products and services available in the community. In this case, the elements that make up the healthcare system are not accessible to the migrant population, as barriers prevent compliance with appropriate location and communication criteria in most cases. In summary, migration as a social determinant has a negative effect on people's health due to vulnerability and the factors already mentioned, such as acculturation, assimilation and differentiation of the new culture, which also create barriers to health accessibility. Life habits may gradually worsen, exerting negative effects on health (Bollini and Siem, 1995; Fajardo, Patiño and Patiño, 2008; Urzúa, Boudon and Caqueo-Urizar, 2017).

Given that there is a clear link between migration and health/disability, study of the health and disabilities of migrants is essential in order to provide a theoretical framework that can serve as a basis for the design of social policies, as well as to ensure access to the health system for the migrant population (World Health Organisation, 1959). However, the health of migrants is an unexplored phenomenon (Burgos and Parvic, 2011; Truscan, 2013), especially in relation to disability and universal accessibility. Authors such as Piñones-Rivera and Concha and Gómez (2021) have addressed the issue of health and migration as a determinant of health, taking into account the structural vulnerability that migration implies, the importance of providing a theoretical basis, as well as the need for well-designed social policies. However, disabilities and pathologies directly linked to migration continue to be overlooked, although some authors have focused on identifying and studying some of the pathologies suffered by migrants, such as Ulysses syndrome, chronic stress, depression, etc. (Loizate, 2006; Moreno, Engel and Polo, 2007). In short, the vast majority of the theoretical background focuses on the study of mental health in migrants (Rodríguez and Hervias, 2022), leaving physical health, quality of life and disability in the migrant population unexplored, in its link health accessibility.

Previous studies show that the health/disability of migrants is practically ignored. Migrants with disabilities are acknowledged in regulations and the actions of some European countries, but they are invisible in the data (Díaz, De la Fuente and Muñoz, 2019). This points to the need for scientific study of the migration phenomenon in relation to other variables in addition to mental health or sexual and reproductive health (Llanes-Díaz, Bojórquez-Chapela and Orgers-Ortiz, 2023; Ortíz, Díaz-Grajales, López-Paz, Zamudio-Espinosa and Espinosa-Mosquera, 2023), as has been done so far (Wickramage, Vearey, Zwi, Robinson and Knipper, 2018). The lack of scientific study of the phenomenon makes migrants more prone to human rights violations and consequently a lack of access to health systems (Morawa, 2003).

As has already been stated, scientific research is the missing piece with respect to ensuring the health rights of the migrant population. However, there are actions that serve as an example of good practice, such as the agreement between the European Parliament and the ONCE Foundation. Its objective is to improve the quality of life of 80 million people with disabilities in Europe. Special attention is paid to people with needs caused by humanitarian and health crises. The vast majority of these crises are caused by war and migratory processes, and actions are aimed at mitigating the negative effects of migration on people with disabilities (Mulas, 2022).

Therefore, the main objectives of this research are: (I) To describe the existence of pathologies and/or disabilities in migrants; (II) To identify the level of access to healthcare and control or lack thereof over their health; and (III) To understand the perceptions of migrants regarding their quality of life, psychological and social health. The ultimate goal is to provide relevant information about the right to health and health services of migrants with disabilities, thereby contributing to the scientific literature on migration and quality of life, as well as physical, psychological and social health, through specifically addressing the issue of disability in migrants.

2. Methodology

In this section, the research methodology is presented, divided into five subsections where the following is described: I) Study Population; II) Research Instruments; III) Procedure; IV) Ethical Considerations; V) Analysis Plan

2.1. Study Population

The sample of this study is composed of 131 migrants aged between 18 and 70 years old and currently residing in Spain. The main characteristics and distribution of the study population are as follows: 50 women (37.2%) and 81 men (61.8%) of various origins distributed in Europe (7.6%), South America (24.4%), Africa (60.3%), Asia and Eurasia (7.6%). The reasons for migration included war or persecution (37.4%), health reasons (22.9%) and other reasons (economic, work, family, studies, etc.) (39.7%).

Participants were selected for the study using non-probability and convenience sampling since the entire population of migrants is too large to be fully considered and evaluated (Salkind, 1999).

2.2. Instruments

The Google Forms tool was used to create the study instrument. More specifically, it was used to create a descriptive questionnaire divided into four sections. The first section deals with health variables. It consists of three main questions (Q1: Situation of disability, illness and health; Q2: Type of health problem; Q3: Access or lack thereof to healthcare). For the remaining three

sections, three scales previously validated and cross-culturally translated by their corresponding authors were used.

The Quality of Life and Health Scale (WHOQOL-BREF). Proposed and created by the World Health Organization (2004) to explore self-perceived quality of life, the Spanish (original research language) version of this scale has been validated by Torres, Quezada and Ducci (2008). It is a generic instrument consisting of 26 items and four dimensions: physical health, psychological health, social relationships and environment. The higher the score in each domain, the better the quality of life profile of the person assessed. The response scale ranges from 1 to 5, as follows: 1) Very bad/Very good; 2) Not at all/Extremely; 3) Not at all/Totally; 4) Very dissatisfied/Very satisfied; and 5) Never/Always.

The Depression, Anxiety and Stress Scale (DASS-21). Created by Antony, Bieling, Cox, Enns, and Swinson in 1998 and validated in Spanish by Ruiz, García-Martín, Suárez-Falcón and Odriozola-González (2017), this scale is composed of 21 items divided into three subscales: Depression, Anxiety and Stress. The higher the overall score, the more severe the symptomatology. The response scale ranges from 0 to 3, as follows: 0) It has not happened to me; 1) It has happened to me a little or some of the time; 2) It has happened to me a lot or a large part of the time; and 3) It has happened to me a lot or most of the time.

The Multidimensional Scale of Perceived Social Support (EMAS) was proposed and designed by Zimet, Dahlem, Zimet and Farley (1988) and validated in Spanish by Ruiz, Saiz, Montero and Navarro (2017). It consists of 12 items that measure perceived social support from three sources (dimensions): family, friends and significant others. The response format is Likert-type, with options ranging from 1 to 7 as follows: 1) Strongly disagree; 2) Strongly disagree; 3) Somewhat disagree; 4) Neither agree nor disagree; 5) Somewhat agree; 6) Strongly disagree; and 7) Strongly agree. The higher the score obtained, the greater the perceived social support.

2.3. Procedure

The online questionnaires were designed and structured based on the aforementioned instruments, and administered through the Google Forms tool. However, some of the questionnaires were administered in paper format and then included in the online tool. All responses were stored in an Excel spreadsheet, which facilitated subsequent statistical analysis using IBM SPSS Statistics v22 (2013).

For study implementation, contact was made with the directors and technicians of the main institutions receiving migrant populations, along with adult education centres and hostels, in order to obtain the necessary permits to access the facilities and make contact with the target sample. In order to obtain the permits, favourable ethical reports had to be presented, as well as an explanation of the objectives of the study and the fieldwork process. In most cases, permissions were obtained to gain access to the centres and to be able to offer migrants the possibility of participating in the study. Also, the snowballing technique had to be used as a way to increase the number of participants. The questionnaire was administered between October and mid-December 2022, in person and online, with a duration of between 20 and 30 minutes per respondent.

Once the data were obtained, the necessary statistical tests were applied. The final phase was to interpret the meaning of the results and produce the conclusions of the study.

2.4. Ethical Considerations

To ensure appropriate application of the fieldwork, the ethical protocols for social research with humans of the university in which the study was carried out were followed: 1) Generation of a research report; 2) Provision of information and an informed consent document for the participant; and 3) Presentation of a letter of presentation for the institutions to the Ethics Committee. The Committee's opinion was favourable, and they thus gave permission for the research to begin. The study was subject to the American Psychological Association (2017).

2.5. Analysis Plan

Quantitative data analysis was performed using IBM SPSS Statistics v22 (2013) software, including descriptive statistical analysis of the scores on the different scales used. For this purpose, various normality tests were applied to the quantitative variables to determine whether parametric or non-parametric tests should be applied. The Kolmogorov–Smirnov test (IBM Corporation, 2013) was used to assess normality. Since the number of respondents was greater than 50, a bilateral correlational analysis between variables was then carried out. To determine whether there was a positive linear relationship and/or a negative linear relationship. When the distribution of both variables was normal, Pearson's correlation was used; otherwise, Spearman's correlation was used.

Once the tests had been carried out, we selected the relevant data to be included in the results section of the study, such as the main results and the results of descriptive and correlation analyses. Finally, to conclude the analysis phase, the results were interpreted, giving rise to the conclusions of the study.

3. Results

The results are organised around two themes: (I) Descriptive analysis of the variables of health, quality of life, and psychological and social health in migrants; and (II) Interactions between variables previously studied. The results showed that, in terms of gender, there were no significant differences between the answers given by men and women.

3.1. Descriptive analysis of quality of life, psychological and social variables in relation to health

To comprehensively understand and address the findings, this section categorizes the discoveries into: I) Health Status in Migrants, and II) Migrants' Perception of their Quality of Life, Psychological Health, and Social Health.

3.1.1. Health status of migrants

The results corresponding to block 1 (Health) of the descriptive questionnaire pertain to the existence of pathologies or disabilities. In addition, the aim of this block was to determine the types of pathologies suffered by the people surveyed and whether they recognised or ignored the ailments. Finally, block 1 tried to find out whether the respondents have control over their health and access to the health system. Three questions addressed these issues: Q1) Do you have any illness, disability or health problem? Q2) What pathology, illness or disability do you identify with? and Q3) Do you have treatment or access to the necessary resources to treat/manage your

health? The questions sometimes served as filter questions. Table 1 shows the frequencies and percentages of the responses to the questions.

The results regarding the health status of migrants showed that 12% of people do not identify themselves as having any disease, disability or health problem. These results show a discordance between the results of Q1 (Do you have any illness, disability or health problem?) and those of Q2 (What is the health problem or disability you have?). Despite the fact that 65.6% of the respondents said that they do not suffer from any illness, health problem or disability, some admitted that they identify with one of the listed pathologies (chronic pathologies and disability [36.6%], acute pathologies [6.1%] and psychological pathologies [4.6%]). This shows that, from the outset, many of the people surveyed had a distorted perception of their own health.

In total, 47.3% of the migrant population had some type of illness, health problem or disability. Among these, chronic pathologies and disabilities were the most common (36.6%).

Table 1. Results of questions Q1, Q2 and Q3 pertaining to the health status of migrants. Own elaboration. Sampedro, De la Fuente, Hernández y Fuentes, 2023

Variable	Category	N	%
Q1.	YES	45	34,3
	NO	86	65,6
Q2.	Chronic Pathologies and Disability	48	36,3
	Acute Pathologies	8	6,1
	Psychological Pathologies	6	4,6
	No Pathologies	69	52,7
Q3.	NO	93	71
	YES	38	29

Finally, the data showed that only 29% of the people surveyed have access to the health system or are in control of their health. This compares with 71% of people who stated that they do not currently have access to the treatments or resources necessary to control their health. In total, 18.3% of migrants with pathologies or disabilities reported being deprived of the necessary resources for the treatment of their health conditions. This is either due to a lack of access to the health system or to a lack of economic or technical resources. Therefore, the results indicate restricted accessibility to health services, especially for migrants with disabilities or other health problems. These people often face significant barriers in obtaining the necessary health care.

3.1.2. Perception of migrants regarding their quality of life, psychological health and social health

The results corresponding to blocks 2, 3 and 4 of the descriptive questionnaires relate to migrants' perceptions of their quality of life, psychological health and social health. Table 2 shows the data for the variables studied, including their dimensions, the mean (total) scores and the scores used as a reference for interpreting the data.

The results regarding the perceived quality of life (WHOQOL-BREF) of the migrants showed that they perceived quality of life as moderate or average. In other words, they do not identify it as good or bad, but rather as normal. These inferences are based on the mean score of each dimension: physical (20.80), psychological (21.08), social relations (9.57) and environment (23.66). These average scores reflect moderate or normal perceptions, with the exception of the dimension of social relations where the mean indicates a poor perception of quality of life. This may be due to the scarcity of support networks due to the migratory situation.

Therefore, the results show that, in order to improve the quality of life of migrants, it is important to take into account the dimension of social relations, which is a key element to improve both perceived and actual quality of life.

The results for psychological health (DASS-21) were divided into three dimensions: depression had a moderate average value (6.24), as did anxiety (5.67) and stressful situations (7.43). Thus, the levels of depression, anxiety and stress were not high among the migrant population. Traits associated with the three emotional states were identified. The presence of depression, stress and anxiety episodes represents evidence of the need to improve migratory conditions (Antony, Bieling, Cox, Enns, and Swinson, 1998).

Table 2. Variables and dimensions quality of life, physical, psychological and social health. Own elaboration. Sampedro, De la Fuente, Hernández y Fuentes, 2023

Variable/Scale	Dimension	Median	Score
Quality of life (WHOQOL-BREF)	Physics	20,80	(1)
	Psychological	21,08	(1)
	Social Relations	9,57	(1)
	Environment	23,66	(1)
Psychological (DASS-21)	Depression	6,24	(2)
	Anxiety	5,70	(3)
	Stress	7,43	(4)
Social (EMAS)	Family	22,55	(5)
	Friends	21,76	(5)
	Significant Others	22,82	(5)

- (1) The average score is 30 points: 30 or more, good; 29 or less, moderate; 0–10, bad
- (2) 5–6, mild; 7–10 moderate; 11–13 severe; 14 or more, extremely severe;
- (3) 4, mild; 5–7 moderate; 8–9, severe; 10 or more, extremely severe
- (4) 8–9, mild; 10–12, moderate; 13–16, severe; 17 or more, extremely severe
- (5) The average score is 28 points: 28 or more, good; 27 or less, moderate; 0–10, bad.

The results regarding perceived social support were divided into three dimensions: the first is the support received from family, the second refers to the support given by friends and the third is the support given by significant others. The three dimensions all had moderate or average scores

(family, 22.55; friends, 21.76; significant others, 22.82). This means that the level of social support perceived by the surveyed migrants was low due to reasons such as distance from family, the non-existence or scarcity of friendships as a result of migration and the difficulty of establishing interpersonal relationships with other people who may have a special meaning in their lives.

Ultimately, good social health depends on the establishment of support networks. Migrants encounter a deficiency in this area of health because they lose their support networks when they arrive in the host country. They have to create new networks despite difficulties and cultural barriers. In addition, the results regarding quality of life coincide with the notion that social relations contribute to a good quality of life and good health.

3.2. Interactions between the variables studied (health, quality of life, psychological and social health)

The second block of data shows the correlations established between the variables studied. The aim was to identify whether the main correlations of the different determinants of health (physical, psychological and social) were positive or negative. Establishing the interrelations of the variables allows the identification of areas where scientific study and political action are required to meet the needs of the migrant population in terms of access to health.

In order to determine the correlations, non-parametric statistical tests were carried out. The correlations between variables were classified as perfect ($r=1$), very high ($r=0.8-0.99$), high ($r=0.6-0.79$), moderate ($r=0.4-0.59$), low ($r=0.2-0.39$), very low ($r=0.1-0.19$) or null ($r=0$). The results were grouped according to the type of correlation and trend.

A very high correlation was found between anxiety and stress. Thus, the presence of a state of anxiety implies the presence of a state of stress. Also, there was a very high correlation between physical health, psychological health and environmental outcomes. This indicates that deterioration in one domain of health (physical, psychological or social) leads to worsening in the others. There must always be a balance between the three dimensions in order to be able to speak of an optimal state of health.

There were strong interactions between depression, stress and anxiety. This implies that the presence of one of these issues leads to the others appearing more easily. In other words, depression is more likely to appear in people who suffer from stress and anxiety. These results indicate the need for treatment to improve the psychological state of the migrant population, especially at the beginning of the migration process.

Regarding inverse or negative correlations, these were mainly seen between the psychological dimensions of quality of life. The better the physical health, the less likely depression, anxiety and stress were to be present. This means that it is necessary to promote physical health as a key to improving psychological health among the migrant population.

The rest of the interactions between variables were considered of minor importance to the objectives of the study. There was minimal interrelation between psychological health and social networking. However, it is essential to maintain a minimum level in the social health dimension in order to maintain the balance mentioned above.

Finally, the results showed that it is important to understand the interactions between quality of life, psychological and social health outcomes in order to determine which are the main dimensions of health and quality of life, and thus to make effective interventions.

4. Discussion

To date, research on the health of migrants has been scarce or even ignored. However, there are some authors who focus on the determinants of health, including migration. This makes it possible to identify various factors relating to the health status of migrants and sheds light on the double vulnerability situation relating to migration and disability.

One of the most relevant results of this study was that more than half of the migrants surveyed (61.8% of the men and 37.2% of the women) claimed not to suffer from any illness or health problem. However, later on, they identified themselves as having some of the proposed pathologies; 47.3% of the migrants surveyed had a pathology or disability. This issue has already been highlighted in previous studies explaining that there are cultural factors and prejudices that prevent migrants from talking about their health problems. Hankivsky (2012) talks about how systemic inequalities arise through the overlapping of social categories (gender, social class, ethnicity, etc.), particularly between men and women in health studies in which the total number of pathologies affecting the migrant population was not fully elucidated (Carballo, Cottler and Smith, 2008). This can be considered as a limitation, taking into account the gender perspective.

In term of results to the pathology and disability, there are few precedents in the literature. However, there are studies that attempted to compile European regulations that take into account migrants with disabilities (Anonymous). In addition, there is a benchmark study that presents qualitative and quantitative data on migration and disability in Spain. As in this study, it tries to make the phenomenon of migrants with disabilities visible, including in terms of their health (Díaz et al., 2008). Likewise, the results of our study revealed that 71% of the migrant population surveyed have no control over or access to the health system. This fact is affirmed by previous research that highlights the factors associated with migrants' lack of access to the health system. For example, Hernández- Vásquez, Vargas-Fernández, Rojas-Roque and Bendezu-Quispe (2020) state that there are factors associated with migrants' non-utilisation of health services. These factors include language, cultural and gender barriers, etc., associated with the transcultural theory of care (Leininger, 2022). In addition, there are clear differences in access to health services between the migrant population and the autochthonous population. This makes it impossible for the migrant population to be cognisant of their right to health on an equal basis with the rest of the population (Cabises Tunstall, Pickett, and Gideon, 2012). However, there are not studies linking the inaccessibility to healthcare products and services for the migrant population with DALCO criteria (Spanish Association for Standardization, 2007). This study identifies, for the first time, the need to break down health barriers to compliance with the accessibility chain in relation to migrants. In order to discuss healthcare accessibility, it is essential to break down barriers that hinder access to healthcare system, that in this case, these barriers are social and cultural.

Similarly, our results on migrants' perceptions of their quality of life (normal or moderate) are supported by previous literature highlighting the different determinants of quality of life (physical health, psychological, environment and social relations). León-Pérez, Patterson and Coelho, (2022) stated that the legal status of migrants is a social determinant of quality of life and health (Davies, Basten and Frattini, 2009; Razum, Karrasch and Spallech, 2016). Therefore, the migration process affects migrants' quality of life and their self-perceptions. Despite this fact, migrants are indeed satisfied with the social conditions around them compared to the native population (Bălăţescu, 2007).

Finally, our results on psychological and social health were the closest to those of previous studies. There is a tendency to study the mental (depression, anxiety and stress) and social health of the migrant population as opposed to their physical health or access to healthcare. We found studies such as that of Acarturk, Cetinkaya, Senay, Gulen, Aker and Hinton (2018), which states that the predictors of the mental health of migrants are related to the vulnerability that they experience during and after the migration process (Brunnet et al, 2020). Regarding our results for social health, the data showed that the migrant population had low perceived social support. This implies a worsening quality of life. These results are supported by studies such as that of Buchcik, Borutta, Nickel, Knesebeck and Westenhöfer (2021), who established a direct interrelation between the social relations and quality of life in migrants. Likewise, various studies show the need to study the social variable in relation to the health and quality of life of migrants (Henríquez, Urzúa and López-López, 2022), as well as the need for more studies of migration and disability as a form of social diversity (Martín-Cano et al., 2020).

5. Conclusions

The main conclusions that can be drawn from this study are as follows: the presence of chronic pathologies, disability and other illnesses is a constant within the immigrant population. Therefore, administrative action and third-sector (specialised) institutions are required to maintain the interventions that are currently being applied to immigrants with disabilities. Furthermore, it is necessary to implement new actions and social policies that promote prevention of the development of pathologies in migrants, especially those caused by migration as a social determinant of health.

Secondly, it is concluded that the quality of life, psychological health and social support of migrants are moderate. Therefore, it is necessary to further study the conditions accompanying migration in order to obtain a good scientific basis for the construction of international measures for the protection of migrants, including their health. This will ensure health accessibility as a first step in the recognition of the right to barrier-free health.

Thirdly, it is concluded that migrants encounter various barriers to accessing the health system. Moreover, even when they can access the health system, they encounter cultural, linguistic, cognitive, limitations and barriers among others. It is therefore necessary to restructure and redesign healthcare protocols so that they are accessible to the entire population in accordance with a human rights approach and the DALCO criteria (Spanish Association for Standardization, 2007). To guarantee universal and equal access to healthcare for all citizens, a special emphasis should be placed on populations with more than one characteristic promoting vulnerability, such as migrants with disabilities or chronic pathologies. This requires more research on the accessibility of health care for migrants and the breaking down of barriers that hinder access to the care system, which in this case are social and cultural barriers.

Finally, it is important to emphasise that this study aimed to promote the right to universal accessible health. The factors affecting the health of migrants originate. The factors affecting the health of migrants originate from the inaccessibility of healthcare for some of the most vulnerable people. Therefore, health accessibility begins with the breaking down of existing barriers within a health system that prevent the maintenance of a good state of physical, mental and social health for some groups. To achieve this, the transformation of a traditional society into a society that is accessible and designed for all people is required, focusing on two main aspects: on the one hand, there is a need to rethink the measures adopted by the Common European Asylum System, to convert them into more humane measures; a good start would be to integrate the

Sustainable Development Goals (2015) in all measures taken by governments and health systems. On the other hand, it is the responsibility of institutions to ensure human rights and protect the most vulnerable people; society should be accessible to and designed for all people.

6. Acknowledgements

This research has received support and funding from the Ministry of Science, Innovation, and Universities, as part of the University Teacher Training Aid Contract (FPU-19/02197 "Superdiversity and Disability: design of tools for the cohesion of migrations in Spain," PDI Cristina Belén Sampedro Palacios). The researchers also express gratitude for the assistance provided by the Fundación Once, the University of Jaén, and the Gender, Dependency, and Social Exclusion Research Group (GEDEX, SEJ-484), of which they are members.

Finally, the researchers extend their heartfelt thanks to all the individuals who participated in the study. Despite the challenges they often encounter, these individuals demonstrated a willingness to contribute to the study, sharing their experiences with the world.

7. Bibliography

- Abu-Warda, N. (2007). The International Migration. *Revista de ciencias de las reliiones*, 21, 33-50. <https://dialnet.unirioja.es/servlet/articulo?codigo=2572845>.
- Acartuk, C., Cetinkaya, M, Senay, I., Gulenm B., Aker, T, & Hinton, D. (2018). Prevalence and Predictors of Posttraumatic Stress and Depression Symptoms Among Syrian Refugees in a Refugee Camp. *Journal of Nervous and Mental Disease*, 206(1), 40-45. <https://doi.org/10.1097/NMD.0000000000000693>.
- ACNUR. (2022). Informe Tendencias Globales: Desplazamiento Forzado en 2021. ACNUR. <https://www.acnur.org/media/tendencias-globales-de-acnur-2021>.
- Almeida, J., Molnar, B. E., Kawachi, I & Subramanian, S. V. (2009). Ethnicity and nativity status as determinants os perceived social support: testing te concept of familism. *Soc Sci Med*, 68(10), 1852-1858. <https://doi.org/10.1016/j.socscimed.2009.02.029>.
- Antony, M. M., Bieling, P. J., Cox, B. J., Enns, M. W., & Swinson, R. P. (1998). Psychometric properties of the 42-item and 21-item versions of the Depression Anxiety Stress Scales in clinical groups and a community sample. *Psychological Assessment*, 10(2), 176-181. <https://doi.org/10.1037/1040-3590.10.2.176>.
- Arango, J. (2003). Inmigración y diversidad Humana. *Revista de Occidente*. 286, 5-21. https://ortegaygasset.edu/wp-content/uploads/2018/07/268Joaquin_Arango.pdf.
- Association, A. P. (2017). Ethical Principles of Psychologists and Code of Conduct. APA. <https://www.apa.org/ethics/code/ethics-code-2017.pdf>.
- Bălțătescu, S. (2007). Central and Eastern Europeans Migrants' Subjective Quality of Life. A Comparative Study. *Journal of Identity and Migration Studies*, 1(2), 67-81. http://www.e-migration.ro/jims/Vol1_no2_2007/JIMS_vol1_no2_2007_BALTATESCU.pdf.
- Bhugra, D. (2004). Migration and mental health. *Acta psychiatrica scandinavica*, 109(4), 243-258. <https://doi.org/10.1046/j.0001-690X.2003.00246.x>.

- Bollini, P. & Siem, H. (1995). No real progress towards equity: health of migrants and ethnic minorities on the eve of the year 2000. *Soc Sci Med*, 41(6), 819-28.
[https://doi.org/10.1016/0277-9536\(94\)00386-8](https://doi.org/10.1016/0277-9536(94)00386-8).
- Brunnet, A. E., Lobo, N. D., Silbeira, T., Kristensen, C. H., & Derivois, D. (2020). Migrations, trauma and mental health: A literature update on psychological assessment. *Encephale-Revue de Psychiatrie Clinique Biologique et Therapeutique*, 46(5), 364-371.
<https://doi.org/10.1016/j.encep.2020.03.009>.
- Buchcik, J., Borutta, J., Nickel, S., Knesebeck, O., & Westenhofer, J. (2021). Health-related quality of life among migrants and natives in Hamburg, Germany: An observational study. *Journal of Migration and Health*, 3(100045), 1-7.
<https://doi.org/10.1016/j.jmh.2021.100045>.
- Burgos, M. & Parvic, T. (2011). Health care for migrants: an ethical challenge. *Revista Brasileira de Enfermagem*, 64(3), 587-591. <https://doi.org/10.1590/S0034-71672011000300025>.
- Cabises, B., Tunstall, H., Picjett, K. & Gideon, J. (2012). Understanding differences in access and use of healthcare between international immigrants to Chile and the Chilean-born: A repeated cross-sectional population-based study in Chile. *Journal for Equity in Health*, 11(1), 68. <https://doi.org/10.1186/1475-9276-11-68>.
- Carballo, M., Cottler, S. & Smith, C. (2008). Migrant men's occupational health. *Elsevier Ireland*, 5(22), 113-115. <https://doi.org/10.1016/j.jomh.2008.02.006>.
- Castañeda, H. H. (2015). Immigration as a Social Determinant of Health. *Annual Review of Public Health*, 36, 375-392. <https://doi.org/10.1146/annurev-publhealth-032013-182419>.
- Claghorn, K. H. (1913). FAIRCHILD, HENRY P. Immigration. New York: The Macmillan Company. *The Annals of the American Academy of Political and Social Science*, 50(1), 273-273.
<https://www.jstor.org/stable/41860149>.
- Comelles, J. M. & Bernal, M. (2007). El hecho migratorio y la vulnerabilidad del sistema sanitario en España. *Humanitas Humanidades Médica*, 13, 1-25. ISSN: 1886-1601.
https://fundacionletamendi.com/revista_humanitas_pdf/TM13.pdf.
- Comisión Española de Ayuda al Refugiado. (2021). Informe 2021: Las personas refugiadas en España y Europa. CEAR. <https://www.cear.es/wp-content/uploads/2021/06/Informe-Anual-CEAR-2021.pdf>.
- Davies, A., Basten, A. & Frattini, C. (2009). Migration: a social determinant of the health of migrants. International Organization for Migration (IOM). https://migrant-integration.ec.europa.eu/sites/default/files/2009-10/doc1_9914_392596992.pdf.
- Díaz, E. H. (2008). Las personas migrantes con discapacidad en España. . Ministerio de Trabajo e Inmigración Gobierno de España y CERMI.
<https://consaludmental.org/publicaciones/Personasinmigrantesdiscapacidad.pdf> .
- Díaz, R. M., De la Fuente, Y. M. y Muñoz, R. (2019). Migraciones y diversidad funcional. La realidad invisible de las mujeres. *Collectivus, Revista de Ciencias Sociales*, 6(1), 61-82.
<https://doi.org/10.15648/Coll.1.2019.5>.
- Fajardo, M. P. (2008). Estudios actuales sobre aculturación y salud mental en inmigrantes: revisión y perspectivas. . *Revista Iberoamericana de Psicología*, 1(1), 39-50.
<https://reviberopsicologia.ibero.edu.co/article/view/rip.1104/114>.

- Fundación ONCE e Illunion. (2023, febrero 7). Fundación ONCE. Retrieved from El Grupo Social ONCE abre sus puertas a personas ciegas o con discapacidad de Ucrania : <https://www.once.es/noticias/el-grupo-social-once-abre-sus-puertas-a-personas-ciegas-o-con-discapacidad-de-ucrania>.
- García, A. (2017). Revisión crítica de las principales teorías que tratan de explicar la migración. *Revista Internacional de Estudios Migratorios*, 7(4), 198-228. <https://doi.org/10.25115/riem.v7i4.1963>.
- Hankivsky, O. (2021). Women's health, men's health, and gender and health: Implications of intersectionality. *Social Science & Medicine*, 74(11), 1712-1720. <https://doi.org/10.1016/j.socscimed.2011.11.029>.
- Henríquez, D., Urzúa, A., and López-López, W. (2022). Social Support as a Mediator of the Relationship between Identity Fusion and Psychological Well-Being in South-South Migrant Populations. *Journal of International Migration and Integration*, 1, 1-23. <https://doi.org/10.1007/s12134-022-00996-5>.
- Hernández-Vásquez, A., Vargas-Fernández, R., Rojas-Roque, C. y Bendezu-Quispe G. (2020). Factores asociados a la no utilización de servicios de salud en inmigrantes venezolanos en Perú. *Revista Peruana de Medicina Experimental y Salud Pública*, 36, 583-591. <https://doi.org/10.17843/rpmesp.2019.360.4654>.
- Kolmogorov, A. &. (2013). One-Sample Kolmogorov-Smirnov Test (Russia). IBM Corporation. <https://www.ibm.com/docs/en/spss-statistics/29.0.0?topic=tests-one-sample-kolmogorov-smirnov-test>
- Leininger, M. (2022). Teoría de la diversidad y de la universalidad de los cuidados culturales. En M. R. Alligood, *Modelos y teorías en enfermería* (10, p. 91). Barcelona: ELSEVIER. ISBN: 978-0-323-75702-7.
- León-Pérez, G., Patterson, E. J. & Coelho, L. (2022). Legal status history, gender, and the health of Latino immigrants in the US. *International Migration*, 60, 3-22. <https://doi.org/10.1111/imig.12925>.
- Llanes-Díaz, Borjóquez-Chapela, I. & Odgers-Ortiz, O. (2023). Oferta de servicios de salud sexual y reproductiva a personas migrantes centroamericanas en Tijuana. *Revista Panamericana de Salud Pública*, 47, 56. <https://doi.org/10.26633/RPSP.2023.56>.
- Loizate, J. A. (2006). Estrés límite y salud mental: El síndrome del inmigrante con estrés crónico y múltiple (síndrome de Ulises). *Migraciones*. Instituto Universitario de Estudios sobre Migraciones, 19. <https://revistas.comillas.edu/index.php/revistamigraciones/article/view/3083>.
- Lotero-Echeverri, G. & Pérez-Rodríguez, A. (2019). Migrations in contemporary society: correlation with migration and development. *Retos-Revista de Ciencias de la Administración y Economía*, 9(17), 141-154. https://rabida.uhu.es/dspace/bitstream/handle/10272/16963/Migrations_in_contemporary_society.pdf?sequence=2.
- Martín-Cano, M. C., Sampedro-Palacios, C. B., Ricoy-Cano, A. J. y De la Fuente-Robles, Y. M. (2020). Superdiversity and Disability: Social Changes for the Cohesion of Migrants in Europe. *International Journal of Environmental Research and Public Health*, 17(18), 6460. <https://doi.org/10.3390/ijerph17186460>.

- Mellese, J. (2022, marzo 8). The war in Ukraine can have devastating long-term consequences on the mental health of children and young people. Retrieved from Mental Health Europe.: https://www.infocop.es/view_article.asp?id=20871.
- Mendola, D. y Pera, A. (2021). Vulnerability of refugees: Some reflections on definitions and measurement practices. *International Migration*, 60(5), 108-121. <https://doi.org/10.1111/imig.12942>.
- Morawa, A. H. (2003). Vulnerability as a concept of international human rights law. . *Journal of International Relations and Development*, 6(2), 139–155. https://ciaotest.cc.columbia.edu/olj/jird/jird_jun03_moa01.pdf.
- Moreno, G. P., Engel, J. L. & Polo, S. A. (2007). Diagnóstico de depresión en inmigrantes subsaharianos. . *Atención primaria*, 39(11), 609-614. <https://doi.org/10.1157/13112198>.
- Mulas, J. (2023, febrero 8). Retrieved from El Parlamento Europeo y el Grupo Social ONCE mejorarán la calidad de vida de 80 millones de europeos con discapacidad. *Parlamentos Europeo Oficina en España*: <https://portal.once.es/empleado/publicaciones/asi-somos/asi-somos-1/asi-somos-292/internacional/el-parlamento-europeo-y-el-grupo-social-once-mejoraran-la-calidad-de-vida-de-80-millones-de-europeos-con-discapacidad>.
- Nagurney, A. &. (2021). International human migration networks under regulations. *European Journal of Operational Research*,, 291(3), 894-905. <https://doi.org/10.1016/j.ejor.2020.04.008> .
- Nations, U. (2015). The 17 goals. Department of Economic and Social Affairs. Sustainable Development. Retrieved from <https://sdgs.un.org/goals>.
- Nie, N. H., Hull, H. & Bent, H. (1968). Statistical Package for the Social Sciences (SPSS) [statistical software, version22 (2013)]. Retrieved from IBM (2013). <https://acortar.link/CyFtcj>
- Organización Internacional para las Migraciones. (2022). Informe sobre las migraciones en el mundo 2022. OIM. <https://worldmigrationreport.iom.int/wmr-2022-interactive/?lang=ES> .
- Organization., W. H. (2004). The World Health Organization quality of life (WHOQOL) - BREF, 2012 revision. World Health Organization. Retrieved from <https://apps.who.int/iris/handle/10665/77773>.
- Ortíz-Ruíz, N., Díaz-Grajales, C., López-Paz, Y., Zamudio-Espinosa, D. C., y Espinosa-Mosquera, L. (2023). Necesidades en salud sexual y reproductiva en migrantes de origen venezolano en el municipio de Cali (Colombia). *Revista Panamericana de Salud Pública*, 47, 4. <https://doi.org/10.26633/RPSP.2023.4>.
- Peña, L. y Ausín, T. (2015). El valor de la Movilidad Humana. Pasando fronteras: El valor de la Movilidad Humana. Madrid: Plaza y valdez. ISBN: 9788416032419.
- Piñones-Rivera, C., Concha, N. L. & Gómez, S. L. (2021). Perspectivas teóricas sobre salud y migración: Determinantes sociales, transnacionalismo y vulnerabilidad estructural. *Saúde e Sociedade*, 30(1), 200310. <https://doi.org/10.1590/S0104-12902021200310>.
- Razum, O., Karrasch, L. & Spalleck, J. (2016). Migration: A neglected dimension of inequalities in health? . *Bundesgesundheitsblatt*, 59(2), 259-265. <https://doi.org/10.1007/s00103-015-2286-3>.

- Rodríguez, L. G. Trejo, F. B. & Hervias, R. G. (2022). Salud mental y migración política Latinoamericana. Experiencias individuales y estilos de afrontamiento. . NURE investigación: Revista Científica de enfermería(119), 5.
<https://www.nureinvestigacion.es/OJS/index.php/nure/article/view/2262/1015>.
- Rojas, C. (2022, abril 20). Migrantes y personas con discapacidad: visibles a la hora de sensibilizar, pero invisibles en los datos. Retrieved from Portal de Datos sobre migración: Una perspectiva global.
<https://www.migrationdataportal.org/es/blog/migrantes-y-personas-con-discapacidad-visibles-la-hora-de-sensibilizar-pero-invisibles-en-los>.
- Ruiz, F. J. García-Martín, M. B., Suárez-Falcón, J. C., Odriozola-González, P. (2017). The Hierarchical Factor Structure of the Spanish Version of Depression Anxiety and Stress Scale -21. International Journal of Psychology and Psychological Therapy, 17(1), 97-105.
<https://www.redalyc.org/pdf/560/56049624007.pdf>.
- Ruiz, M. T., Saiz, J., Montero, M. T. & Navarro, D. (2017). Adaptación de la Escala Multidimensional de Apoyo Social Percibido en población con trastorno mental grave. . Revista de la Asociación Española de Neuropsiquiatría, 37(132), 415-437.
https://scielo.isciii.es/scielo.php?pid=S0211-57352017000200415&script=sci_abstract.
- Salkind, N. J. (1999). Métodos de investigación (3ª ed.). Pearson Educación. ISBN: 9789701702345.
- Salud, O. M. (2022, marzo 7). Discapacidad. Retrieved from OMS.
<https://www.who.int/es/news-room/fact-sheets/detail/disability-and-health>.
- Salud., O. M. (1959). Constitución de la Organización Mundial de la Salud, firmada en Nueva York el 22 de julio de 1946. Boletín Oficial del Estado, número 116, de 15 de mayo de 1973. Retrieved from <https://www.boe.es/buscar/doc.php?id=BOE-A-1973-682>.
- Spanish Association for Standardization. (2007). UNE 170001-1:2007 Accessibility and usability of urban environments for all people. Part 1: General criteria for the built environmental for all people. <https://www.une.org/encuentra-tu-norma/busca-tu-norma/norma?c=N0040254>.
- Sampedro, C. B., Cano, L., De la Fuente, Y. M. y Fuentes, V. M. (2021). Búsqueda y análisis de herramientas utilizadas por el tercer sector en población migrante: Un estudio exploratorio-descriptivo. En Molero, M.M. Barragán, A. B., Martos, A. y Simón, M.M. (Eds.). Intervención en Contextos Clínicos y de la Salud: Un enfoque práctico desde la investigación (1ª ed). Dykinson. <https://www.dykinson.com/libros/intervencion-en-contextos-clinicos-y-de-la-salud-un-enfoque-practico-desde-la-investigacion/9788411220101/>.
- Sanz, N., y Valenzuela, J. M. (2016). Introducción. In Sanz, N y Valenzuela, J.M. Migración y Cultura (1ª ed.) (pp. 1-207). UNESCO.
<https://unesdoc.unesco.org/ark:/48223/pf0000247760>.
- Tió, J. (2022). Cuando eso no es vida: cómo afecta la pandemia en la evolución social y la salud mental de los adolescentes en edad escolar. Temas de psicoanálisis, 23, 1-10.
<https://www.temasdepsicoanalisis.org/2022/01/15/cuando-eso-no-es-vida-como-afecta-la-pandemia-en-la-evolucion-social-y-la-salud-mental-de-los-adolescentes-en-edad-escolar/>.

- Torres, M. Q. (2008). Calidad de vida de adultos mayores pobres de viviendas básicas: Estudio comparativo mediante uso de WHOQoL-BREF. *Revista médica de Chile*, 136(3), 325-333. DOI:<http://dx.doi.org/10.4067/S0034-98872008000300007>.
- Truscan, I. (2012). Considerations of vulnerability: from principles to action in the case law of the European court of human rights. *Retford Journal*, 142 (3), 64–83.
https://www.academia.edu/5908596/Considerations_of_Vulnerability_from_Principles_to_Action_in_the_Case_Law_of_the_European_Court_of_Human_Rights.
- United Nations. (2015). The 17 goals. Department of Economic and Social Affairs. Sustainable Development. Obtenido de <https://sdgs.un.org/goals>.
- Urzúa, M. A., Boudon, S., y Caqueo-Uriza, A. (2017). Salud mental y estrategias de aculturación en inmigrantes colombianos y peruanos en el norte de Chile. *Acta Colombiana de Psicología*, 20(1), 80-89. <https://doi.org/10.14718/ACP.2017.20.1.5>.
- Villar, E. (2007). Los Determinantes Sociales de Salud y la lucha por la equidad en Salud: desafíos para el Estado y la sociedad civil. *Saúde e Sociedade*, 16, 7-13.
<https://doi.org/10.1590/S0104-12902007000300002>.
- Wickramage, K., Vearey, J., Zwi, A., Robinson, C. and Knipper, M. (2018). Migration and health: a global public health research priority. *BMC public health*, 18(1), 1-9.
<https://doi.org/10.1186/s12889-018-5932-5>.
- World Health Organization. (2004). The World Health Organization quality of life (WHOQOL) - BREF, 2012 revision. World Health Organization. Obtenido de <https://apps.who.int/iris/handle/10665/77773>.
- Zimet, G. D., Dahlem, N., Zimet, S. and Farley, G. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, 52(1), 30–41.
https://doi.org/10.1207/s15327752jpa5201_2.

How to cite this article

Sampedro, C. B., De la Fuente, Y. M., Hernández, J., Fuentes, V. (2024). Health accessibility: Quality of life and physical, psychological and social health in the migrant population. *Journal of Accessibility and Design for All*, 14(1), 52-68.
<https://doi.org/10.17411/jacces.v14i1.465>



© Journal of Accessibility and Design for All (JACCES), ISSN 2013-7087, is published by the Universitat Politècnica de Catalunya, Barcelona Tech, with the sponsoring of ONCE Foundation for Cooperation and Social Inclusion of People with Disabilities. This issue is free of charge and is available in electronic format.



This work is licensed under an Attribution-Non-Commercial 4.0 International Creative Commons License. Readers are allowed to read, download, copy, redistribute, print, search, or link to the full texts of the articles or use them for any other lawful purpose, giving appropriate credit. It must not be used for commercial purposes. To see the complete license contents, please visit <http://creativecommons.org/licenses/by-nc/4.0/>.



JACCES is committed to providing accessible publication to all, regardless of technology or ability. The present document grants vital accessibility since it applies to WCAG 2.2 and PDF/UA recommendations. The evaluation tool used has been Adobe Acrobat® Accessibility Checker. If you encounter problems accessing the content of this document, you can contact us at jacces@catac.upc.edu.

