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## EDITED BY

Maria de Fátima Joaquim Minetto,  
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## REVIEWED BY

Fernando Barragán-Medero,  
University of La Laguna, Spain  
Nélia Maria Pontes Amado,  
University of Algarve, Portugal

## \*CORRESPONDENCE

David Elicerio Conchas  
✉ david.elicerio@academicos.udg.mx

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# Factors fostering the inclusion of students with disabilities during their academic career at the University Center of Health Sciences of the University of Guadalajara

David Elicerio Conchas<sup>1\*</sup>,  
Pamela Georgina Hernández Carrillo<sup>2</sup> and  
Ricardo Pérez Zúñiga<sup>1,2</sup>

<sup>1</sup>Department of Applied Psychology, University Center for Health Sciences, University of Guadalajara, Guadalajara, Mexico, <sup>2</sup>Department of Neurosciences, University Center for Health Sciences, University of Guadalajara, Guadalajara, Mexico, <sup>3</sup>Department of Computer Science, University Center for Exact Sciences and Engineering, University of Guadalajara, Guadalajara, Mexico

The results of a qualitative study whose objective was to understand, from the experience of 13 students with disabilities of the University Center of Health Sciences, the factors that favor their inclusion and the barriers they have faced during their academic trajectory are presented. The favoring factors and barriers identified for inclusion were analyzed from the ecological theory of human development and the model of inclusive schools. It was observed that they are present in the different subsystems in which students with disabilities develop: personal, family, institutional and contextual, as well as in three moments of their trajectory: access, permanence and graduation. The findings were also grouped into the three dimensions of the inclusion index (inclusive culture, policies and practices) and show that the main factors that favor the inclusion of students with disabilities are: the student's own knowledge of his or her condition and needs, family support, peer support, help and guidance from different institutional agencies, and financial support. In terms of barriers, it highlights the need to improve institutional and external infrastructure and knowledge about inclusion and people with disabilities.

## KEYWORDS

inclusion, academic path, higher education, students with disabilities, inclusive education

## 1 Introduction

Access of students with disabilities to Higher Education (HE) has increased in recent years, however, it is recognized that access in itself is not enough, since students with disabilities who manage to enter university face multiple curricular, physical, attitudinal and institutional barriers (Pérez, 2019a) at different moments of their school career, such as access, permanence and graduation from higher education (Gairín et al., 2014).

Although for decades educational inclusion throughout the academic trajectory has been a right expressed by national (ANUIES, 2002; SEP, 2020) and international (OECD, 2012; World Health Organization, 2011; 2023a,b; ONU, 2006; UNESCO, 1990; UNESCO, 2017)

organizations, difficulties have been encountered in enforcing this right at all educational levels.

In Mexico, this phenomenon has attracted the attention of educational authorities at the basic education level since the early 2000s, when public policies that favored the completion of basic and high school education by children with disabilities began to be defined with greater precision. This was particularly reflected in the National Education Program 2001–2006, which recognized the importance of providing inclusive education, with emphasis on cultural, ethnic and linguistic aspects.

However, at the higher education level, this concern became more acute recently, as by 2021, thanks to the aforementioned policies, more and more young people with disabilities had completed high school and were looking for a place at the higher education level. Therefore, it becomes relevant to study the inclusion of students with disabilities in Higher Education Institutions (HEI).

According to Mexico's 2020 Population and Housing Census, 5.69% of the population has a disability, equivalent to 7,168,178 of the country's 126,014,024 inhabitants (INEGI, 2021). However, by 2023, less than 4% of the total student enrollment in higher education have a disability (ANUIES, 2023).

In the state of Jalisco, where this study was conducted, 8,348,151 people reside, of whom 1,264,817 have a disability, representing 15.2% of the total population (INEGI, 2021). In this context, 299,139 people are enrolled in higher education, of whom 4,153 live with a disability (ANUIES, 2023).

The creation of educational strategies from a perspective of inclusion and equity that leads institutions to reduce the barriers that prevent the effective exercise of rights and favor the presence, participation and learning of all students is a priority issue on the agenda of higher education institutions, this implies carrying out processes of restructuring the culture, policies and practices of educational institutions so that they can respond to the diversity of needs of all students (Echeita and Ainscow, 2011).

The main objective of this study was to understand the factors that favor the inclusion of students with disabilities during their academic career at the University Center of Health Sciences (CUCS) of the University of Guadalajara, as well as the barriers they face to achieve their inclusion and thus document the basis for the development of specific actions to make CUCS an inclusive school.

Inclusive education is an increasingly relevant model in higher education, as it seeks to ensure that all students, regardless of their specific differences, have access to quality education without obstacles that limit their participation and full learning (UNESCO, 2017).

The Convention on the Rights of Persons with Disabilities states that, the meaning of the concept of disability is constantly changing as a result of the different interactions of persons with disabilities with the barriers they face in their environment (ONU, 2006).

In this sense, Anastasioum and Kauffman (2013) and Padilla-Muñoz (2010) define disability as the impossibility or restriction of performing an activity due to a person's functional limitations, which results in their exclusion from participation in social activities. The United Nations Children's Fund (UNICEF) defines disability as the result of a multidimensional phenomenon, that is, biopsychosocial, in relation to its impact on a person's participation and social inclusion (Hollenweger, 2019).

On the other hand, the World Health Organization (2022) defines disability as the interaction between health conditions, impairments

that a person experiences and contextual factors related to different environmental and personal factor that hinder the attainment of human rights.

All definitions agree that disability is the result of the interaction of physical, mental, and social-contextual factors, which correspond to the different models under which disability has been defined. This work is guided by two models for analyzing disability: the social model and the biopsychosocial model. The first assumes that disability is the result of conditions, structures, activities, and interpersonal relationships embedded in an environment that oppresses and excludes the individual (Aguado, 1995; Padilla-Muñoz, 2010; Peña et al., 2020).

The second argues that a person's functioning depends on the correlation of their physical, psychological, and social states. Therefore, interventions must encompass these three spheres (Padilla-Muñoz, 2010; Peña et al., 2020).

The theoretical foundations that guided the development of the work were three: Ainscow and Booth's (2000) Inclusive Education approach, particularly for the identification of cultures, practices and policies that are perceived as inclusive or as barriers to the inclusion of students with disabilities. From this theoretical perspective, attention to diversity is an opportunity to enhance ways of teaching and learning, so educational centers are committed to designing strategies to improve the learning and participation of all students in order to reduce exclusion at school and in the community (Echeita and Ainscow, 2011). Inclusive cultures involve the development of values in the community that promote a safe and welcoming space for students, while inclusive policies refer to the mobilization of support through institutional policies that increase the capacity to respond to needs. Finally, inclusive practices are those actions that promote the participation of all students.

On the other hand, the proposal of School Trajectories in HE (Casillas and Badillo, 2015), identifies three main moments for analyzing academic conditions, which are: access, permanence, and graduation from university. During these stages, diverse factors influence the type of experience a student has, including psychological, social, or contextual aspects, organizational and aspects of social interaction (Pérez, 2019b). Therefore, it is important to integrate a theoretical model that allows for the analysis of different factors. In this regard, Bronfenbrenner's (1987) ecological theory of human development assumes that students with disabilities interact and develop within different subsystems that influence their student experience in HE, their way of experiencing disability, and how they confront barriers to educational inclusion. From this theoretical perspective, the environment is an important element in the human development process and is not limited to the immediate environment in which the person participates but extends to broader environments that are interrelated and are part of the ecological environment.

## 2 Materials and methods

A qualitative research project was conducted. This methodology is appropriate because it allows for an in-depth understanding of educational phenomena, in all their situational richness. According to Denzin and Lincoln (2011), qualitative research assumes that social reality (in this case, educational reality) is constructed by the

perceptions and actions of the people involved, and therefore must be studied holistically and contextually.

The work was conducted in accordance with the Declaration of Helsinki and the Regulations of the General Health Law on Health Research in Mexico.

The design was a case study (Stake, 2007) focused on CUCS, a branch of the University of Guadalajara located in the state of Jalisco, Mexico that offers undergraduate and graduate education related to the health sciences. At the time of the study, it had an enrollment of approximately 20,000 students, of whom, through a self-administered questionnaire, 13 self-identified as having a disability at the University Center's Inclusion Unit.

The work was developed through in-depth interviews with students with disabilities enrolled in an undergraduate program at CUCS.

## 2.1 Participants

The participants were 13 students with a disability, aged between 25 and 21 years, of which 4 were women and 9 men. Regarding the type of disability, 4 were visually impaired, 3 were hearing impaired, 5 had motor disabilities and one student had autism.

Participants represent the total number of students who at the time of data collection reported having a disability to the CUCS Inclusion Unit offices. Through the Inclusion Unit, they were personally contacted and invited to participate.

The participants were studying one of the following bachelor's degrees: Psychology, Nutrition, Nursing, Podiatry, Physical Culture and Sports, or the Higher University Technician programs in Dental Prosthesis or Respiratory Therapy.

In relation to the moment of their academic trajectory, during the fieldwork 4 students were in one of the first 4 semesters of their education (considered as the entry stage), 4 were studying between the fifth and seventh semesters (considered as permanence) and 5 were in the graduation stage, of which 2 were in their last semester, 2 were doing their social service and 1 was in the process of graduation.

## 2.2 Data collection instrument

For data collection, in-depth interviews were conducted based on an interview guide that was constructed from Bronfenbrenner's (1987) ecological theory, Booth and Ainscow (2000) index for inclusion and the methodological proposals of Losada et al. (2022) and Pérez (2019b) for the study of inclusion in higher education.

The instrument was reviewed and validated by 4 experts in educational psychology, including 1 expert in educational inclusion, 1 expert in pedagogy and 2 experts in qualitative methods and educational psychology. The instrument was sent by e-mail and asked to evaluate its ability to identify factors that favor and barriers to inclusion in higher education, as well as the clarity of the questions and their consistency with the theoretical foundations.

Once the experts submitted their observations, the instrument was adjusted and piloted with a fourth-semester master's student in educational psychology with congenital visual impairment, who made recommendations during the interview to improve the clarity and coherence of the questions.

The final instrument was composed of two sections, the first one includes questions on socio-demographic data of the student and the second one includes questions grouped in 5 dimensions and categories based on the theoretical elements that support it. The dimensions are: institutional (includes the categories inclusive cultures, inclusive policies and inclusive practices), personal (addresses the categories motivation, self-perception and health conditions), social (includes the category social interaction), family (addresses the categories socioeconomic and cultural conditions) and governmental (includes the category social support programs).

## 2.3 Data collection and analysis

Prior to the interviews, participants were informed of the informed consent and confidentiality rules. All participants gave informed consent.

A Mexican Sign Language interpreter was available to interview students who required it.

Each interview was conducted face-to-face in the facilities of the University Center of Health Sciences and lasted approximately 60 min. The results were transcribed into word documents and subsequently analyzed in the qualitative data analysis software Atlas.ti, where through recursive readings of the responses, codes were assigned and subcategories, categories and analytical networks were constructed.

The selected technique was content analysis, considering the pre-established categories for the design of the instrument, but also emerging categories during the analysis. This favored the construction of units of meaning.

To ensure anonymity, all participants were assigned a name different from their real name.

## 3 Results

### 3.1 Model of analysis for the inclusion of students with disabilities during their university academic path at CUCS

Based on the theoretical foundations on which this research is based and the data obtained through fieldwork, an analysis model was designed for the inclusion of students with disabilities at CUCS (Figure 1).

The model highlights that the educational subsystem in which the work was developed is the CUCS, this being the social, educational and contextual environment in which the students interviewed live the university experience.

In this context, various factors interact that favor or act as barriers to the development of the university trajectory of students with disabilities. In addition, associated with the theory, these factors are organized in four general dimensions that are equivalent to different levels of systems proposed by the ecological theory: personal, family, institutional and contextual. These dimensions are interrelated and show that the inclusion of students with disabilities in CUCS is influenced by personal, family, institutional and contextual aspects throughout their educational trajectory.

The *personal dimension* refers to psychological aspects such as motivation and self-perception. The *family dimension* refers to the

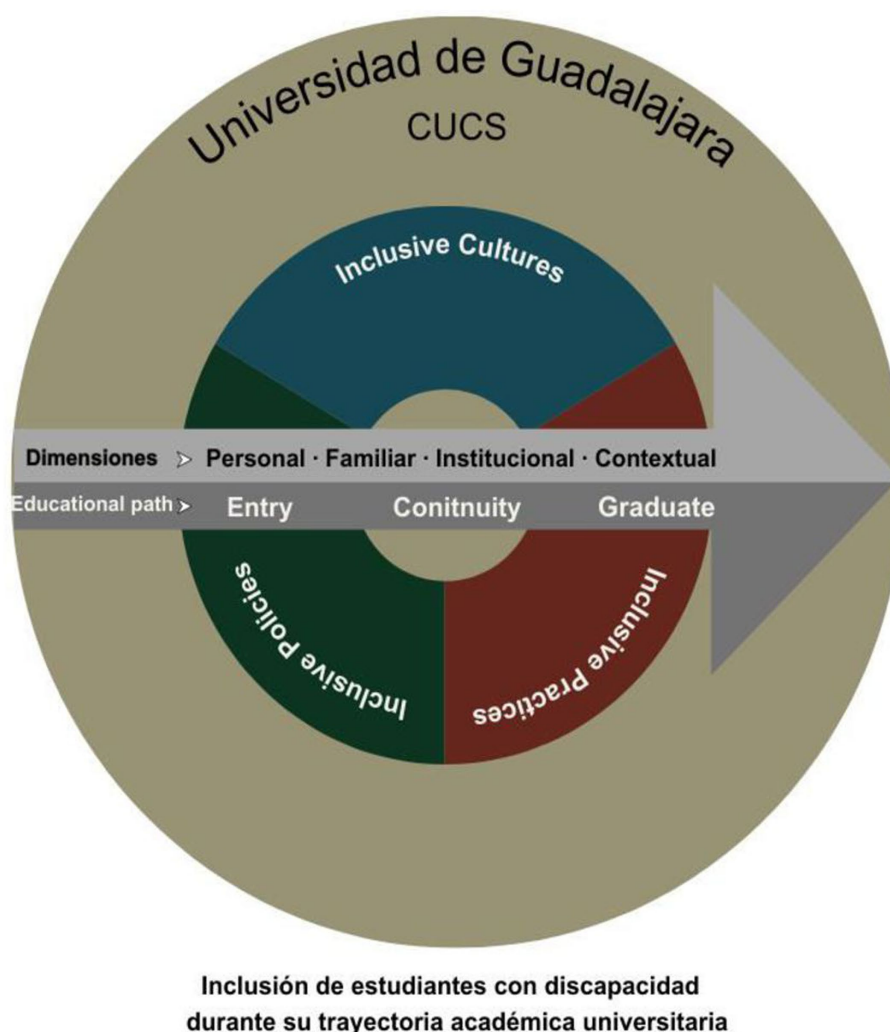


FIGURE 1

Model of analysis for the inclusion of students with disabilities at CUC. Based on Ainscow and Booth (2000), Losada et al. (2022), Pérez (2019b), and Bronfenbrenner (1987). It contains the analysis model, organized by two concentric circles. The lower one represents the educational subsystem in which the work was developed and is structured by cultures, practices and policies that favor or do not favor educational inclusion. The second represents the institution of which the subsystem is part. It also contains an arrow that crosses both systems, which indicates that the personal, family, institutional and contextual dimensions influence the subsystem and throughout the educational trajectory of students with disabilities.

social and cultural capital of the student's family. In the *institutional dimension*, the CUCS, in its meso level, and the UdeG, in its macro level, are the systems in which actions that favor or not the inclusion of students with disabilities are deployed.

Following Booth and Ainscow (2000) proposal, the model of analysis highlights that at these system levels, cultures, policies and practices that favor or do not favor educational inclusion are carried out.

Finally, the model includes the *contextual dimension*, which refers to aspects such as infrastructure, attitudes and culture regarding inclusion that they experience when moving from their home to the University Center, being this a factor that intervenes in their academic experience.

According to the model, these dimensions are present at each stage of the university academic trajectory (access, permanence and graduation), acting as facilitators and/or barriers for the inclusion of this group in the CUCS.

This resulted in several categories, which are presented below.

### 3.2 Inclusion during the admission process of students with disabilities in CUCS

According to the students interviewed, the inclusion experienced in choosing CUCS as the educational institution where they wish to pursue their higher education studies begins with the admission process, that is, the completion of the application, the admission exam and the adaptation in the first semesters of their training.

Students with disabilities refer that, among the factors that favor inclusion during admission to the University of Guadalajara in general and to CUCS in particular, are: the opportunity offered to them to carry out their admission process, to express their needs and to access or not to an examination modality with reasonable adjustments that considers the diversity of needs they may present.

Regarding the opportunity to take a test with reasonable accommodations for each condition, the University of Guadalajara has the Inclusion Unit, a unit of the general administration whose



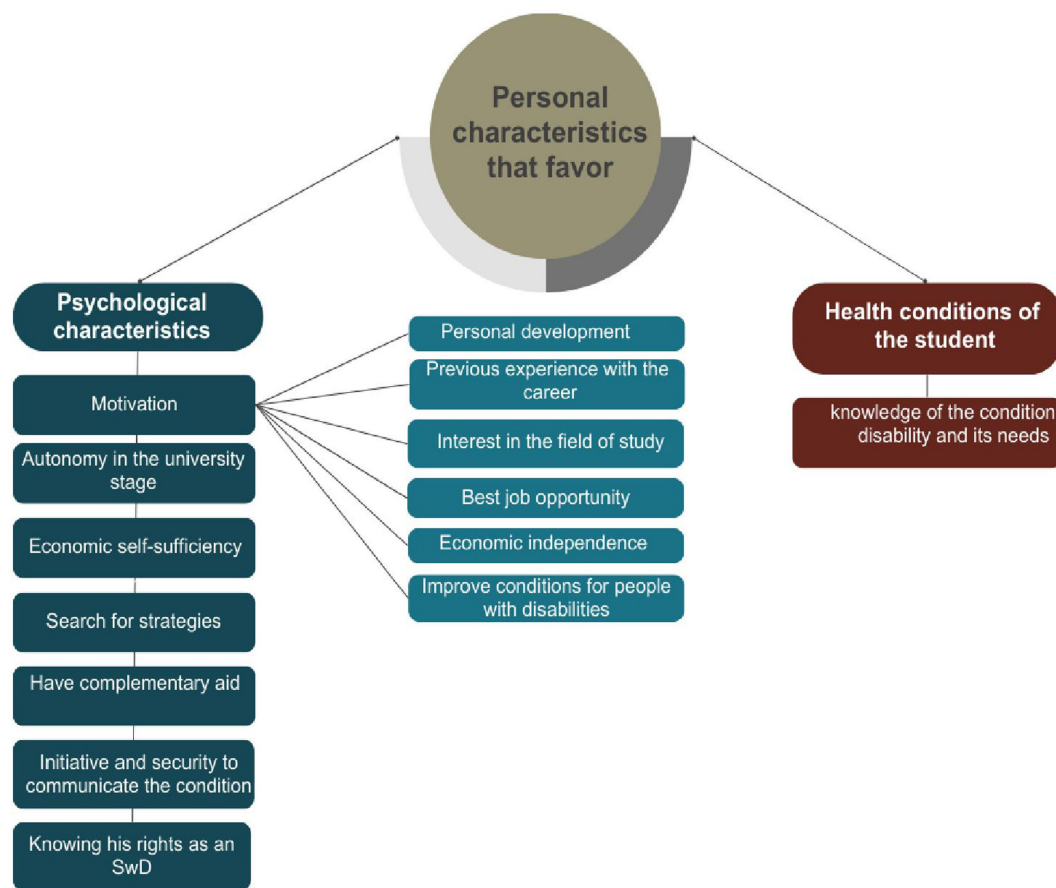


FIGURE 2

Personal factors that favor the inclusion of students with disabilities during their academic career at CUCS. It is derived from the analysis of the field work and is organized by a circle in the upper part containing the legend "Personal characteristics that favor," from which two categories emerge, (a) the psychological characteristics and, (b) the health conditions of the student body that favor inclusion. The first is organized by factors such as motivation, autonomy in the university stage, economic self-sufficiency, search for strategies, initiative and security; the second by the factor, knowledge of the condition of disability and its needs.

objective is, among other things, to offer adaptations in the application of standardized admission tests, make available support readers for people with visual disabilities, Mexican Sign Language interpreters, psycho-pedagogical support and flexibility for the application of the test (Coordination of Extension and Social Action, 2023).

In this regard, the participants in this study identified some of the aids offered by the Unit as favorable for inclusion during admission, such is the case of Carlos and Nicolás, who said:

"Yes I remember, it was an exam, it took quite a long time but ... well it was curious because I am very grateful that the people who were behind or in charge gave me the possibility to give me all the time I needed to take that exam, because I do remember that it took me a long time to finish it" (Carlos, 22 years old, psychosocial disability, TSU in dental prosthesis, in social service stage).

"They helped me to read the exam and that made my university exam much easier because otherwise it would have been impossible, I would not have been able to take it" (Nicolás, 22 years old, visually impaired, B.S. in nutrition, 2nd semester).

### 3.3 Inclusion during the permanency at CUCS

#### 3.3.1 Personal characteristics that favor the academic trajectory of students with disabilities at CUCS

Personal factors that favor the inclusion of students with disabilities in the University are related to their resilience and perseverance.

In this regard, it was possible to identify that the decision to enter higher education, as well as the self-determination to remain and complete it, are related to psychological characteristics of the student with disabilities, among them: motivation, search for security, autonomy achieved in the university stage, perception of economic self-sufficiency, search for own strategies to learn and remain in the institution, cognitive and socioemotional skills to identify and take advantage of complementary supports (Braille, use of cane, use of wheelchair), initiative and confidence to communicate the condition and request help when required, as well as knowledge of the rights of persons with disabilities (Figure 2).

In addition to health conditions, medical attention related to surgeries and medical follow-up required according to their disability

condition, may or may not influence their participation in classes because they occasionally need to be absent, however, the institutional response to this fact is what affects their inclusion in the institution through the inclusive practices and policies implemented.

Students with disabilities, when choosing their educational program, opt for programs in which they already have experience or which are a known field of study, thus avoiding possible difficulties and seeking to remain safe in the face of possible unfamiliar educational and work scenarios:

“I went for something I knew, so since I already knew that field, it wasn't so difficult for me” (Alberto, 22 years old, motor disability, B.A. in psychology, 8th semester).

### 3.3.2 Self-perception of students with disabilities as a factor fostering their academic career at CUCS

Self-perception as a student with a disability leads some to actively seek support in their environment to overcome the barriers they face on a daily basis and achieve the expected learning or, on the contrary, to limit themselves under the assumption that they will be frowned upon and not participate in the construction of knowledge.

The perception of competence that students with disabilities have is related to the assessment they make of the skills they have to face the challenges that arise throughout their academic career and these can be both cognitive and socioemotional skills.

“Society always believes that my condition is going to limit me, but, well, I personally know that I am very capable of achieving things and for example, I can prove it because right now I am in my sixth semester and well, in very personal aspects, it is my pride and it is what is making me grow in a certain way” (Oscar, 21 years old, visually impaired, B.S. in nursing, 6th semester).

The self-perception of the student with a disability as someone capable of achieving the goal of completing higher education may be influenced, either by adaptation to difficulties throughout their lives or their resilience, such that they do not perceive barriers in the environment and therefore consider themselves capable of overcoming them on their own:

“The prosthesis for me is like shoes that I have to put on, my shoes to go for a walk or so, it has never been different” (Georgina, 22 years old, motor disability, B.S. in nursing, 5th semester).

In addition to considering themselves capable of achieving their goals, some of them consider themselves privileged with respect to those who are not in this educational stage and recognize that other people with similar conditions do not have the same opportunities as they do:

“I am in a fairly privileged position within the disability, I think, because my disability is not so severe and does not influence so much how I perform in school” (David, 23 years old, motor disability, B.A. in psychology, 8th semester).

The influence of emotions on the way students with disabilities cope with the challenges posed by education is not only reflected in

their own academic performance, but even drives them to promote psychological well-being among other young people living similar situations to themselves.

### 3.3.3 The family as a factor that favors the inclusion of students with disabilities in their university academic career

The family as a factor that favors the inclusion of students with disabilities is expressed through support to solve doubts about how to cope with situations related to their university education process or how to move around the university, to economic situations, to move from home to school, adaptations to the responsibilities at home, among others.

It is important to highlight that the perception, expectations and availability of support that the family has for the student with a disability in the university stage could be influenced by the cultural and social capital they have. In this study, the parents' level of education is considered as an indicator of the family's cultural capital.

The educational level of the fathers and mothers of the students with disabilities interviewed was as follows: 1 father and 1 mother have primary education; 5 mothers and 2 fathers have secondary education; 1 mother and 1 father have high school; 1 mother has a technical university degree; 5 mothers and 4 fathers have bachelor's degrees, this being the most frequent educational level; and finally, 1 father has a master's degree (Table 1).

Half of the parents have completed basic education, which can lead to barriers in the family environment, such as a lack of understanding of the complexity of this stage of their academic life or the perception that the student will not be able to overcome the difficulties they face.

“They are not so familiar with what it implies to study a higher grade, so I have not had support as such, because they do not know what it implies. So the support that they don't burden me with a lot of homework and other chores so that I can study and so on, yes; but, as well as economic support or support to help you with your homework or help you, no. So I think they are somewhat indifferent” (Luz, visually impaired, TSU in Respiratory Therapy, in social service stage).

TABLE 1 Education level of parents of students with disabilities interviewed.

Degree of studies	Frequency
Primary	2
Secondary	7
High school	2
Technical university degree	1
Bachelor's degree	9
Master's degree	1
Total	22

It is a table with two columns, the first column shows the degree of studies of the parents of the students participating in the study and the second column shows the frequency. There are 2 parents with primary education, 7 with secondary education, 2 with bachelor's degree, 1 with university technical degree, 9 with bachelor's degree and 1 with master's degree, in total, 22.

### 3.4 The inclusion of students with disabilities in the CUCS educational environment: enabling factors and barriers

For this analysis, the three dimensions for educational inclusion of Ainscow and Booth (2000) are recovered, in that sense, a group of factors was grouped around the culture dimension, another around practices and, finally, a third group of factors were ordered around policies; understanding that within these dimensions there are both factors that favor inclusion, as well as factors that hinder it and act as barriers to learning and participation of students with disabilities throughout their academic career.

#### 3.4.1 Culture of inclusion in the CUCS educational community from the perspective of students with disabilities

The CUCS educational community is made up of students, faculty and administrative staff who perform their functions in the institution. The factors perceived by the students that favor a culture of inclusion at CUCS are: the values present in the educational environment, knowledge about disability and inclusion, the interaction and willingness of community members to offer help, and the experience of living or not living discrimination (Figure 3).

On the other hand, the willingness to know the needs and make the necessary adjustments is a fostering factor, since, regardless of the knowledge about inclusion and disability, there is openness, both from teachers and peers, to help.

“There are enough people willing to help you and to ask you what help you need and that is, that seems to me the main value to have for any disability in any context, to ask and if you want to help to adequate what that person tells you that he/she needs help, I think that is the main thing” (David, 23 years old, motor disability, B.A. in psychology, 8th semester).

The inclusive values identified by students with disabilities in the educational community are: respect, empathy, tolerance, solidarity, openness to communication and justice.

More specifically, they consider that the CUCS educational community is in the process of becoming an inclusive community as such, they recognize the efforts made, but, at the same time, they point out the existence of barriers and the need for improvement.

“It is on its way, it is not yet ready because it has some flaws, it is normal that it has them. I think there are certain flaws, it does try to be open to new things such as different types of visual, hearing

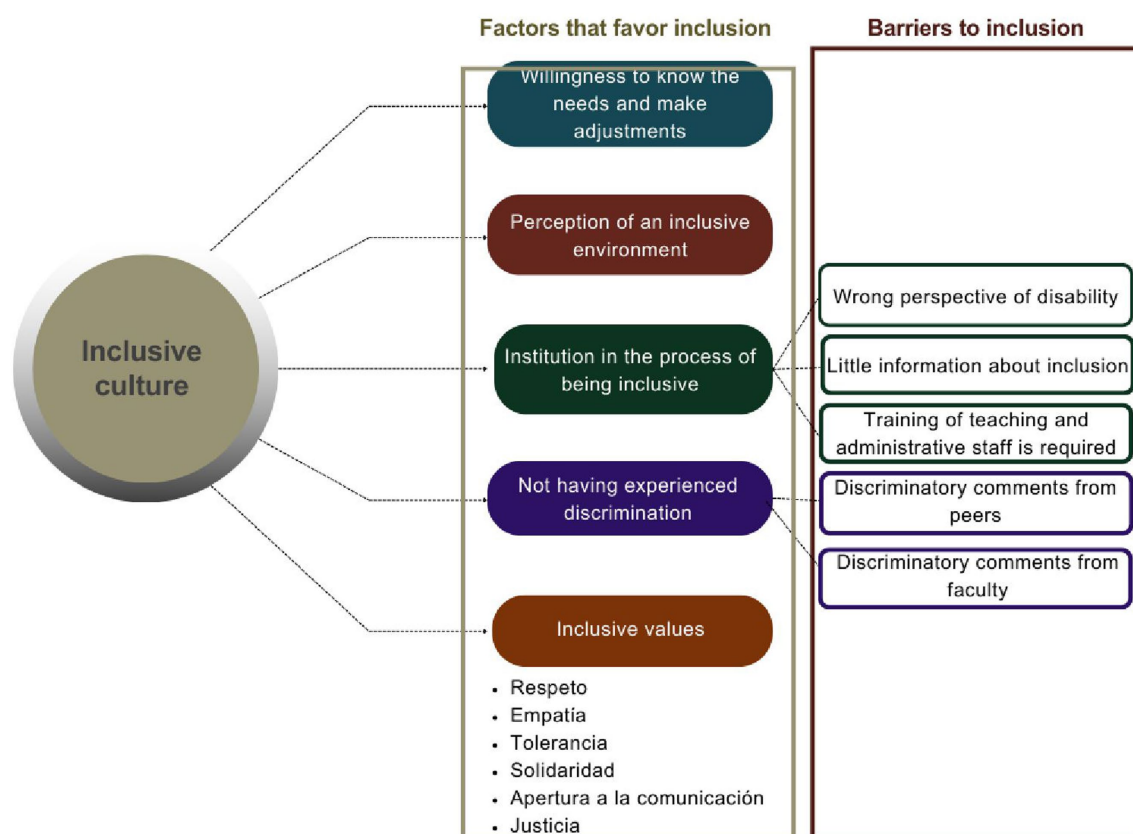


FIGURE 3

Factors that favor and barriers to the development of an inclusive culture at CUCS during the academic trajectory of students with disabilities. It is derived from the analysis of the fieldwork and is organized by a circle on the left side containing the legend "inclusive culture," from which two categories emerge to the right: (a) factors that favor inclusion and, (b) Barriers to inclusion; the first is organized by factors willingness to know the needs and make adjustments, perception of an inclusive environment, institution in the process of being inclusive, not having experienced discrimination and inclusive values such as respect, empathy, tolerance, solidarity, justice; the second by the factors, wrong perspective of disability, little information about inclusion, training of teaching and administrative staff is required, discriminatory comments from peers and faculty.

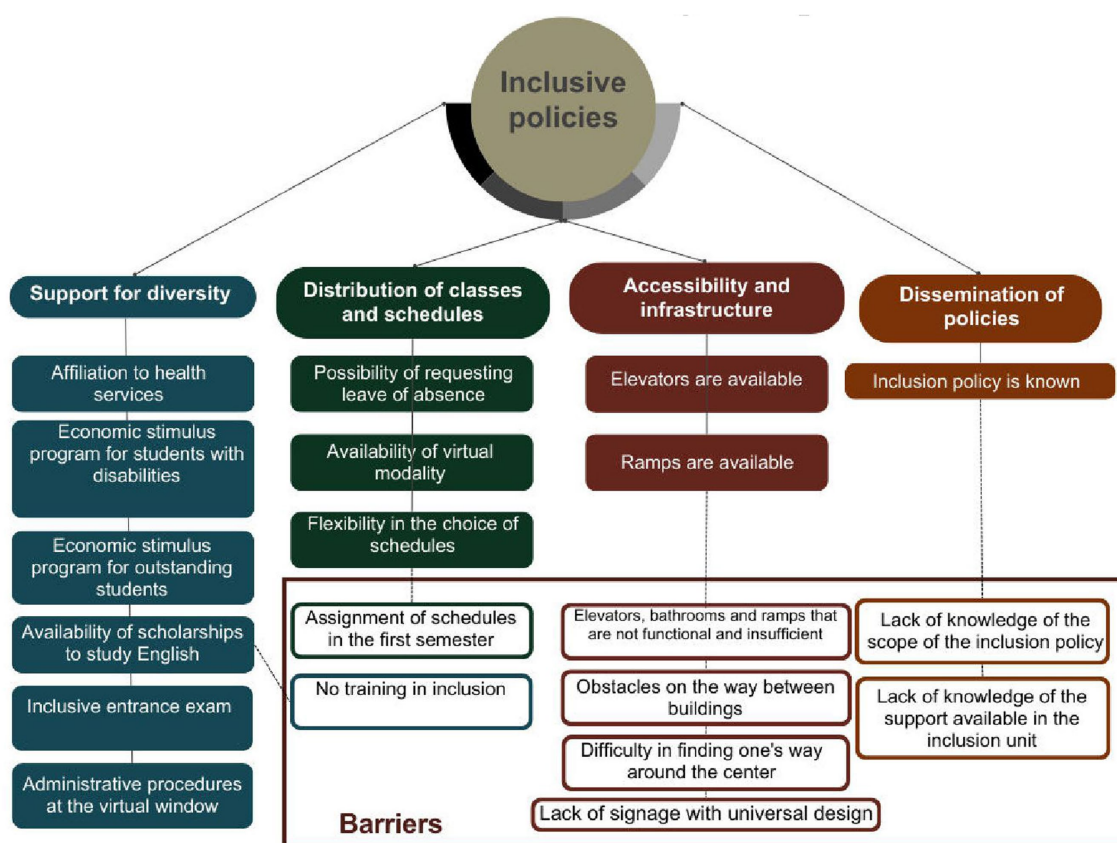


FIGURE 4

Policies that favor the inclusion of students with disabilities during their academic career at CUCS and barriers surrounding these policies. It is derived from the fieldwork analysis and is organized by a circle at the top containing the legend "inclusive policies," from which four categories that favor the implementation of inclusive policies and a table with the barriers to their implementation can be seen. The categories are: (a) support for diversity, (b) distribution of classes and schedules, (c) accessibility and infrastructure, and (d) dissemination of policies. The first category is organized by the factors: affiliation to health services, economic stimulus program for students with disabilities, economic stimulus program for outstanding students, availability of scholarships to study English, inclusive entrance exam and administrative procedures at the virtual window. The second category contains the factors: possibility of requesting leave of absence, availability of virtual modality and flexibility in the choice of schedules. The third category includes the factors: elevators and ramps are available. The fourth category includes the factor entitled, the inclusion policy is known. The table with the barriers includes: assignment of schedules in the first semester, no training in inclusion, elevators, bathrooms and ramps that are not functional and insufficient, obstacles on the way between buildings, difficulty in finding one's way around the center, lack of signage with universal design, lack of knowledge of the scope of the inclusion policy, and lack of knowledge of the support available in the inclusion unit.

and all kinds of disabilities. But yes, there are things that are missing, things for which we are not so prepared and, as I said, it is normal because we are in a complete context that is not ready. So the fact that steps are being taken in the right direction gives me a bit of hope" (David, 23 years old, motor disability, B.A. in psychology, 8th semester).

Among the institutional barriers to achieving an inclusive culture, students with disabilities mention that there is an erroneous perspective of disability and they perceive that there is a lack of information among the university community about inclusion and, particularly, they consider that training is needed for teaching and administrative staff.

Despite the factors identified as facilitators for the educational inclusion of students with disabilities, young people continue to encounter barriers that make their academic career at CUCS difficult. In this regard, it is necessary to insist on the non-tolerance of discrimination and promote that the educational community of the University Center is a safe environment for everyone, regardless of their condition.

### 3.4.2 Policies fostering the inclusion of students with disabilities at CUCS

Factors related to institutional policies that favor the inclusion of students with disabilities at CUCS, as well as policy barriers, are related to four main categories: the organization of diversity support, the distribution of classes and schedules, accessibility and infrastructure, and the dissemination of existing policies (Figure 4).

In relation to the organization of support for diversity, students with disabilities mention as factors that have favored their academic trajectory: affiliation to the Mexican Social Security Institute (IMSS) for being a student at the University of Guadalajara, the Economic Stimulus Program for Students with Disabilities, the Economic Stimulus Program for Outstanding Students, the availability of scholarships to study English in the Jobs Program, the admission process to CUCS, which is open to all applicants, whether or not they have a disability, and the school control procedures, which can be done online and thus avoid trips to the University Center.

Regarding accessibility and infrastructure, students with disabilities perceive more barriers than factors that favor their



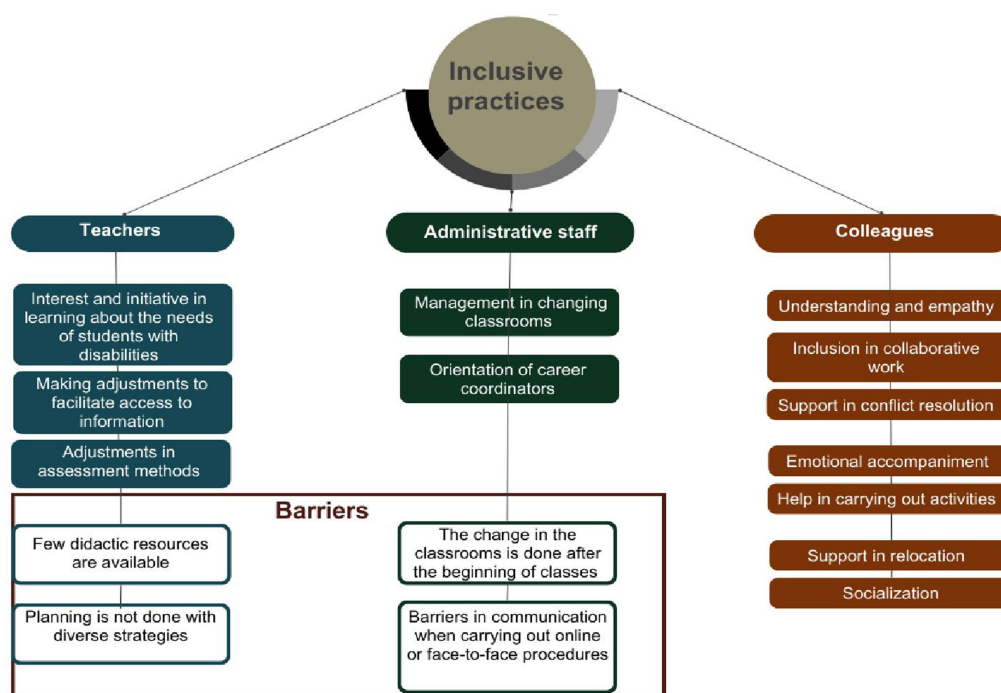


FIGURE 5

Practices that favor the inclusion of students with disabilities during their academic career at CUCS and barriers in the practices. It is derived from the fieldwork analysis and is organized by a circle at the top that contains the legend "inclusive practices," from which three categories that favor the implementation of inclusive policies and a table with the barriers to their implementation can be seen. The categories are: (a) teachers, (b) administrative staff, and (c) colleagues. The first category is organized by the factors: interest and initiative in learning about the needs of students with disabilities, making adjustments to facilitate access to information, and adjustments in assessment methods. The second category contains the factors: management in changing classrooms and orientation of career coordinators. The third category includes the factors: understanding and empathy, inclusion in collaborative work, support in conflict resolution, emotional accompaniment, help in carrying out activities, support in relocation and socialization. The table with the barriers includes: few didactic resources are available, planning is not done with diverse strategies, the change in the classrooms is done after the beginning of classes and barriers in communication when carrying out online or face-to-face procedures.

inclusion at CUCS. This is because, although they recognize that there is infrastructure such as elevators and ramps, these are not functional or sufficient for the mobility needs of students with disabilities. They also report difficulty in finding their way around the University Center due to changes in the buildings and lack of signage with universal design in classrooms and construction sites.

The supports provided by the institution through the policies designed to favor the inclusion of students with disabilities at CUCS depend on the general management and resources available to the institution. While access to these aids involves the different educational agents, i.e., the administrative staff in terms of disseminating the possibilities of support and improvement management; the teaching staff in offering and using the resources available in the institution and the student in requesting reasonable accommodations to improve their participation and achievement during their academic career.

One way to use available resources and make institutional inclusive policies work is to put inclusive practices into action.

### 3.4.3 Practices fostering the inclusion of students with disabilities at CUCS

Practices are the expression of institutional culture and policies and can directly promote or hinder the participation and learning of students with disabilities during their time at the university (Figure 5).

Regarding the role of teachers in fostering educational inclusion, one of the factors that from the perspective of students with disabilities

favors their inclusion in the classroom is the teacher's attitude in the presence of a student with a disability, that is, his or her accessibility, interest and initiative in knowing the student's needs and making the appropriate adjustments.

Another factor identified as fostering is the implementation of adjustments to facilitate access and understanding of the contents. For example: the use of different learning techniques, the use of visual materials such as images, videos or texts for students with hearing impairment, as well as the participation of MSL interpreters.

"They are patient with me, they help me explain when I have doubts, they show me images, sometimes videos, and also when my interpreter is there, everything is fine" (Mario, 22 years old, hearing impaired, TSU in dental prosthesis, 4th semester).

For the evaluation of the contents, the teaching staff also makes adjustments consisting in the allocation of more time for exams, the use of oral exams instead of written ones and the modification of rubrics to adapt them to the student's possibilities of movement.

"We were evaluated as dancing, we were put to dance and for certain positions that I could not do because of my own condition, there were certain modifications in those scores, because they were less strict so to speak" (Alberto, 22 years old, motor disability, B.A. in physical culture and sports, 8th semester).

On the other hand, the interaction between students with and without disabilities is considered one of the factors that have most favored the academic trajectory of students with disabilities, according to the expressions of the participants:

“The support of peers, in my case, I think that was the most important factor, the accompaniment and all those kinds of things. Because a teacher is fine, right? inside the classroom he can make adjustments, but when you leave the classroom it is very different to have someone who you know supports you, who you know, for example, serves as a guide” (Alberto, 22 years old, motor disability, B.A. in physical culture and sports, 8th semester).

The support provided by classmates arises inside and outside the classroom and is based on attitudes such as understanding and empathy in the face of difficulties, inclusion in collaborative work activities, support in the search for solutions, emotional accompaniment, socialization, help in carrying out activities, as well as in accessing information by reading subtitles, describing images and sharing notes, they also offer support in transportation within the University Center. They even report having established bonds of friendship with their classmates.

Finally, with respect to administrative personnel, two factors that have favored the academic trajectory of students with disabilities have been identified. On the one hand, the management of the change of classrooms for students with motor disabilities who have difficulty going up and down stairs and, on the other hand, the participation of career coordinators as liaison with different instances that offer assistance to students with disabilities.

Although the change of classrooms is considered a factor that favors inclusion, at the same time, this management acts as a barrier, due to the fact that, as the students point out, the change of classrooms takes place sometime after the beginning of the semester.

#### 3.4.3.1 The Inclusion Unit as inclusive policy and practice

The main objective of the CUCS Inclusion Unit is to favor the inclusion of students with disabilities during their academic career at the University Center and this is how the participants in this study perceive it.

The Inclusion Unit collaborates in the management of support such as: support to carry out administrative procedures, such as the request for grade report, the management of the change of classrooms that were located on higher floors for others with greater accessibility, support in the registration of schedules that adapt to their commuting, work or family routines, mediation between the student and the faculty for the request of adjustments or the solution of conflicts. One student even requested support from the Inclusion Unit to request authorization for the use of complementary aids.

Based on the contact and follow-up carried out by the Inclusion Unit with students with disabilities at CUCS, they perceive this unit as a place where they can go when they have any difficulty, and which is willing to offer them help to promote their participation and learning. In addition, during their stay at the university, they report feeling accompanied by the constant follow-up provided to them.

“In the Inclusion Unit they give you this follow-up, whenever there is a problem you know that you can go there. I didn't always have these problems to go and look for them, but I knew that if

something got stuck, they were there” (David, 23 years old, motor disability, B.A. in psychology, 8th semester).

#### 3.4.3.2 Inclusion in the extracurricular context and its impact on the academic trajectory of students with disabilities at CUCS

Regarding contextual factors that favor their inclusion in the university, students with disabilities refer to government policies, such as financial support for using public transportation and maintenance scholarships for students with disabilities.

On the other hand, CUCS students with disabilities identify other barriers they face outside the University Center, some of them are related to cultures that do not favor inclusion, since they have faced non-inclusive treatment due to the prejudices that exist in society about people with disabilities and this influences them to perceive the environment as a hostile, complicated and unempathetic environment towards disability, which leads them to feel insecure even in the exercise of their profession.

On the other hand, policies related to inaccessible infrastructure make it difficult to reach the University Center, because when leaving the University Center and on their way to their homes or practice scenarios, there are significant barriers, for example, in public transportation, which most of the participants use, They are not all adapted to the needs of people with disabilities for the transportation of wheelchairs or signage for people with visual impairment, besides being an inefficient service, because they are usually full, do not pass at the usual times or make frequent changes at the stops, so that their arrival at the university may be affected, as well as their participation in classes.

Also, students with disabilities refer to the infrastructure of the practice scenarios, specifically, hospitals. They mention that these are not adapted to the needs of professionals with disabilities, for example, in the use of software or in the accessibility of buildings or spaces for patient care (Figure 6).

### 3.5 Perception of inclusion of students with disabilities at CUCS at the time of graduation from higher education

Among those who participated in the study, there are those who are already aware of the modalities available for graduation and access to the degree of their university studies. In this regard, some consider that the different modalities to achieve this, by themselves, are a factor that favors inclusion in this final stage of their university career.

In addition, institutional efforts to promote the mastery of a second language (a requirement for graduation) and inclusion do not go unnoticed by the student body and in some cases become a factor that favors educational inclusion for the achievement of the degree.

Students with disabilities also identify barriers after graduation, such as job placement and the challenges they may face in practicing their profession.

## 4 Conclusion and discussion

The findings derived from this research work correspond to the experiences of students with disabilities in the specific context of CUCS, so it is not considered relevant to make comparisons with

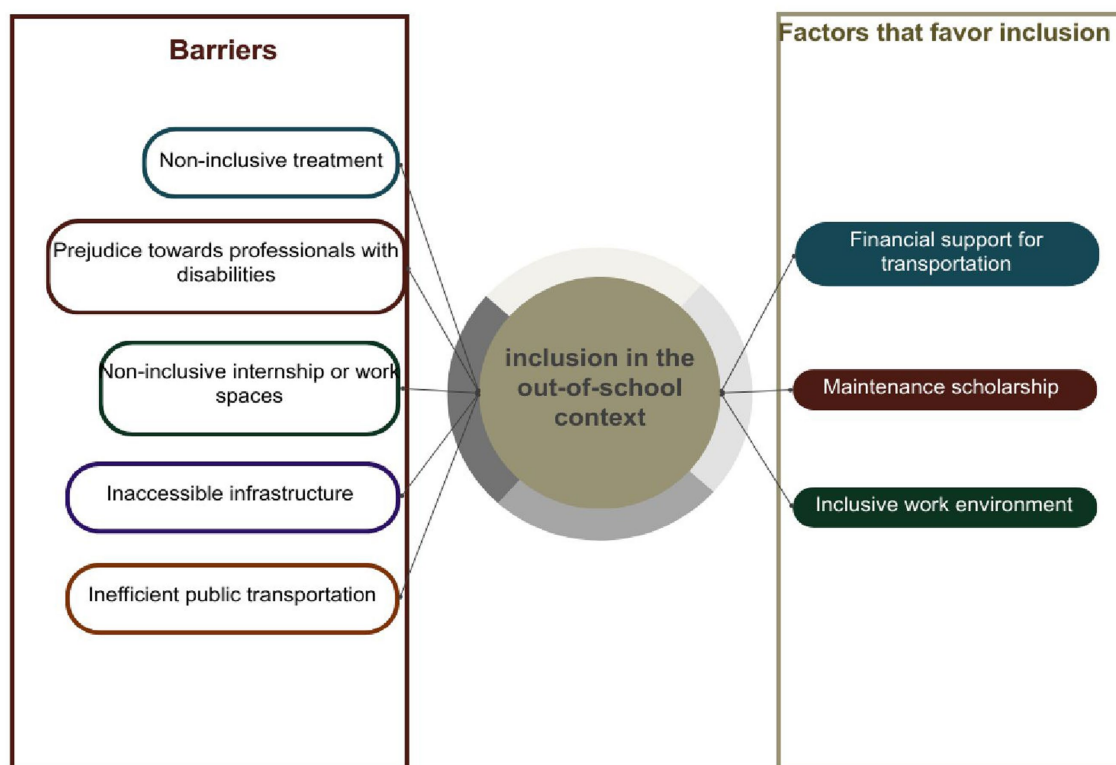


FIGURE 6

Factors that favor and barriers faced by students with disabilities in the extracurricular context during their academic career at CUCS. It is derived from the fieldwork analysis and is organized by a circle in the center containing the legend "inclusion in the out-of-school context," from which there are two memories, one on the left with barriers and the other on the right with factors that favor inclusion. The barriers include: non-inclusive treatment, prejudice towards professionals with disabilities, non-inclusive internship or work spaces, inaccessible infrastructure and inefficient public transportation. The table with the factors that favor inclusion includes: financial support for transportation, maintenance scholarship and inclusive work environment.

other studies related to the topic that are conducted in other environments with different characteristics.

However, in relation to the objectives of this research it can be concluded that students with disabilities perceive, in the different moments of their academic trajectory at CUCS and in the different systems in which they develop, factors that favor their inclusion, as well as barriers that they have to face and that hinder their university experience.

Regarding the CUCS admission stage, the opportunity to take the admission process is recognized, regardless of their condition; the possibility of taking the admission exam with reasonable adjustments for their disability and the availability of aids provided by the Inclusion Unit for the application of the exam.

During the permanence in the university, there are different dimensions of analysis that are interrelated and that are part of the university experience of the student with disabilities (personal, family, institutional and contextual).

Regarding the personal dimension, psychological characteristics of the student were identified that favor their inclusion in the university, such as motivation to seek greater security in their future, the autonomy achieved in the university stage, the search for strategies to learn and remain in the institution, the use of complementary aids, the knowledge of the rights of people with disabilities, the confidence to communicate their condition and the initiative to ask for help.

In addition to this dimension, the students' perception of themselves is fundamental to favor educational inclusion throughout their academic trajectory. It is important to mention that the self-perception of students with disabilities influences their emotional state and their active search for support to achieve a satisfactory academic career. In this sense, CUCS students with disabilities refer to perceiving themselves as capable of pursuing their chosen career, since they consider that they have the necessary skills to complete their university studies. In addition, they identify with the group of people with disabilities, which favors their sense of identity and recognition of their needs and rights.

Regarding the family dimension, the family subsystem and the factors that interact within it (parents' level of education, motivation, inclusive attitudes, actions and support provided, development expectations) are recognized as a primary factor in the educational inclusion of students with disabilities at different stages of their university careers.

The institutional dimension is based on the educational inclusion model that considers three aspects in the educational environment: culture, practices and policies.

First, students with disabilities perceive as factors that favor the culture of inclusion at CUCS the values present in the educational environment, the knowledge about disability and inclusion, the interaction and willingness of community members to offer help, and the experience of living or not living discrimination.

Despite the factors perceived as fostering the construction of an inclusive educational community, students with disabilities still identify barriers during their academic career at CUCS. In this sense, actions to improve inclusive cultures and policies are a way to develop inclusive practices.

An example of effective educational policy and practice in the development of an inclusive educational environment is the creation of the Inclusion Unit, which is identified by students as an instance of accompaniment and support during the three stages of the university academic career.

The last of the dimensions analyzed is the contextual dimension, that is, the social context to which the student with a disability belongs, in which society in general and government authorities are involved. In this context, economic support for maintenance and use of public transportation stands out as factors that favor inclusion in the academic trajectory.

On the other hand, barriers are identified as the erroneous perception that society has about disability, i.e., there is no inclusive culture in the extracurricular context, in addition to the architectural barriers that make it difficult for students to move from their homes to the University Center and other establishments for their professional development.

From the results obtained, we have an overview of the strengths and weaknesses of CUCS to achieve educational inclusion in the university community. It is essential to highlight that the results of this work arise from the experience of students with disabilities who are in different moments of the academic trajectory, with different conditions of disability and with diverse situations of vulnerability.

The limitations of this study are, on the one hand, the historical moment in which some of the students were studying at university, since those participants who were in the graduation period at the time of the interview, would have gone through the change from face-to-face to virtual mode caused by the COVID-19 pandemic.

On the other hand, only the factors that favor and barriers to the inclusion of the group of students with disabilities in general were considered and those that are particular to each type of disability are not specified.

It is suggested that further research be conducted on each of the dimensions analyzed (personal, family, institutional and contextual) in order to define more precisely the strategies to be implemented to promote the inclusion of students.

## Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

## Ethics statement

Ethical approval was not required for the studies involving humans. The research was conducted with the highest ethical standards, ensuring the protection of students' rights at all times and contributing to the advancement of knowledge in inclusive education. Furthermore, the team acted at all times based on the provisions of Articles 13 and 14 of Chapter I, Title Two, of the Ethical Aspects of the Regulations of the General Health Law on

Health Research in Mexico. All participation was voluntary, and informed consent was obtained from all participants before beginning the interviews and they could withdraw from the process at any time without any consequences. We also ensured that data confidentiality was maintained and information was protected so that it was only accessible to the person responsible for the research. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation was not required from the participants or the participants' legal guardians/next of kin in accordance with the national legislation and institutional requirements. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

## Author contributions

DE: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. PH: Conceptualization, Formal analysis, Investigation, Methodology, Writing – original draft, Writing – review & editing. RP: Investigation, Visualization, Writing – review & editing.

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## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Generative AI statement

The authors declare that no Gen AI was used in the creation of this manuscript.

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