

Gender bias in pediatric care: Health professionals' opinions and perceptions

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Abstract

Introduction: Gender bias in healthcare is understood as a misconception of the differences between males and females that may generate healthcare disparities and discrimination against one sex. However, it is not well known how this implicit bias is manifested in pediatric clinical praxis. Thus, the goal of this study is to explore and analyse the attitudes of health personnel toward a possible gender bias in pediatric care in Catalonia.

Methods: We undertake a descriptive and exploratory study applying a qualitative research methodology based on hermeneutic phenomenology and Grounded Theory using the focus group technique. The opinions collected were classified into four categories and 22 subcategories, and subsequently analyzed.

Results: Three main ideas stood out regarding situations that might be affected by gender bias: (1) attitudes of health personnel and perceptions with regard to mental health problems and (to a lesser extent) to physical health problems; (2) the role of the child's family and the professional's assessment of this role; and (3) the professional's attention to children of the opposite sex, especially in the case of genital examinations.

Discussion: The results stand out that differential attitudes depending on the gender of the child have been observed in clinical practice in pediatrics, which may have an impact on health inequality. Hence, academic training that includes the study and prevention of implicit biases in professional activity, campaigns aimed at the general population on how to detect implicit biases and promoting gender equity in education, should help to avoid the negative consequences of these misconceptions.

KEYWORDS

gender, pediatrics and adolescent medicine

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1 | INTRODUCTION

Healthcare professionals are constantly making important decisions that affect the future of their patients. Studies that have analyzed this decision-making process have detected systematic errors or biases, some of them related to the gender of the patient: for example, when deciding to perform a bypass,¹ a cholecystectomy,² or a transplant.³ Although the terms *sex* and *gender* are often used as synonyms, *sex* refers to the individual's biological and physiological characteristics, while *gender* is a social and cultural construct based on sex that refers to an individual's roles, behaviors, and identities.⁴

Gender bias in healthcare is understood as a misconception of the differences between males and females that can generate unequal treatment and discrimination against one sex.⁵ This bias is manifested *explicitly* through negative beliefs that may lead to behaviors such as sexual harassment, lack of respect, or a lack of awareness of sexism; or *implicitly*, in the form of unawareness and possible opposition to declared beliefs and values.⁶ In the health domain, gender bias manifests itself in three areas:

1. In the production of knowledge due to the exclusion of women as experimental subjects and in the analysis design; in the choice and definition of problems to be studied; in the methods and approaches used in data collection; and in the theories and conclusions deriving from these studies.⁷
2. In the dissemination of knowledge; gender inequality is observed in the power structures in scientific research and in specialist journals. For its part, pharmaceutical advertising promotes stereotypes that associate biological sex with specific diseases.⁷
3. In clinical practice, following on from the production and dissemination of knowledge.^{8,9}

Thus, gender bias primarily affects two dimensions of healthcare. The first is diagnosis, in so far as bias may influence the medical history, physical examination, and performance of complementary tests.⁷ The second is therapy, in that the communication style and the professional–patient relationship differ according to whether professionals and patients are of the same gender.¹⁰

Studies on gender bias in healthcare generally focus on adults rather than on children and adolescents.¹¹ However, pediatric care is a service that covers several key stages in the development of the individual that require exhaustive control, and so it is important to analyse gender bias in the relationship between health professionals and minors.

The health professional–minor relationship involves a number of protagonists: the minor as the patient, the parents who interpret the symptoms and assess the clinical severity (and have their own relationship with the health professional), and the health professional who interprets and manages all the information to make a diagnosis and prescribe treatment.¹²

In a review of gender disparity in pediatric care,¹³ the following information was recorded on biological aspects that may generate gender biases:

1. The prevalence of obesity is higher in boys, but perceived obesity is higher in girls; therefore, the approach to this condition should differ according to sex.
2. The prevalence of autism spectrum disorders is 15 times higher in boys than in girls, but the clinical manifestations are different.
3. During adulthood, the incidence of tuberculosis is higher in men; however, in childhood it is similar in girls and boys.
4. Migraine has the same prevalence in prepubertal boys and girls, but after puberty it diverges, with figures of 18% in girls and 6% in boys.
5. In addition, girls report having recurrent headaches more than boys, but the level of pain is similar when it is musculoskeletal.

In a study at the level of health professionals,¹⁴ it was analyzed the attitudes of pediatric residents in relation to implicit bias and attention to population diversity. Their study suggests that areas in which residents need to improve their skills and training include the management of implicit gender bias and the interaction with lesbian, gay, transgender, bisexual, and intersex youth.

In view of the above, incorporating and reviewing gender perspectives and the rights of minors, inclusive development, and interculturality in the field of health raises questions about the relationship between health providers (i.e., the health system itself) and users (minors and their families). In fact, this approach goes further and requires all health professionals to self-explore and to reconsider and reformulate their clinical practices.

Applying a psychological perspective, this study aims to analyse the possible gender biases observed in a group of pediatricians practising in Catalonia.

2 | DATA AND METHODS

2.1 | Study design

This descriptive, exploratory study applies a qualitative research methodology, characterized by an inductive approach and the application of a holistic, open and flexible perspective. It is based on hermeneutic phenomenology¹⁵ and Grounded Theory.¹⁶ The focus group technique was used to assess participants' perceptions and to develop ideas relevant to the objectives. This technique fosters carefully designed discussion with the aim of gaining insights into a particular area of interest.¹⁷

2.2 | Participants

The study participants comprised two groups of professionals who work in the public health service of Catalonia, namely nurses and pediatricians.

The inclusion criteria were:

1. Health professionals with more than 2 years of experience in the field of pediatric care either in a primary care setting or hospital.
2. Professionals from urban and rural health areas in Catalonia.

In terms of the group composition, attempts were made to obtain a balance between the sexes, but this turned out to be impracticable given the higher proportion of women in pediatric care and in nursing.

The following exclusion criteria were applied:

1. Medical and nursing residents.
2. Professionals not currently active in the pediatric sector.

Initially, 68 practitioners were contacted. Although most expressed an interest in participating, the final sample comprised 22 nurses (all women) and 21 pediatricians (17 women and 4 men).

2.3 | Variables and instruments

An initial bibliographical review of the issue of gender bias identified three main questions to examine in the study; the determinants of biology, the types of bias, and the influence of families.

The interview comprised three key questions focusing on the main issues and several cluster questions (derived from, or expanding on, the answer provided) (see Supporting Information: Appendix A), to record the opinions of the participants in the focus group. Data saturation is reached when there is little further to learn, opinions are recurrent, the interviewer has heard "everything" and the understanding is complete.¹⁸

2.4 | Procedure

Six focus groups (three groups of nurses and three groups of pediatricians) were created based on the parameters of availability and intergroup homogeneity (i.e., in terms of professional position, number of participants, and sex). Table 1 shows the composition of groups in each segment.

The groups were created in February 2022 (Table 1), a time of some uncertainty following the COVID-19 pandemic. Due to the healthcare staff's workload, it was decided to hold the meetings by videoconference through the Microsoft Teams platform. Before commencement, participants gave written and oral informed consent to participate and to record the sessions to be able to transcribe the participants' observations, and to avoid missing any nuances.

The focus groups were moderated by two members of the research group. Whenever possible the same researcher moderated, but when the groups coincided in time both researchers took on this role.

The duration of the sessions ranged from 74 to 99 min (Table 1). The time was divided between the three key questions, and the focus moved on to a new question when data saturation was reached. Once the focus groups were completed, all the recordings were pseudonymized and transcribed in a Word document. Participants were identified as a man or a woman and were assigned a number at the time of their first intervention (e.g., Woman 1, Woman 2, Man 1).

2.5 | Data analysis

The researcher triangulation strategy¹⁹ was used to analyse the transcriptions. The research group carried out repeated readings to select and code the opinions of the participants (see the summary in Supporting Information: Appendix B). The coding was carried out in three phases:

Phase 1: in this phase, the relevant opinions of the participants in each focus group were segmented. The selected phrases were coded into categories and subcategories (see Table 2).

Phase 2: the categorized segments were reread together to verify that they were consistent with their taxonomy. Some segments were moved to other subcategories. Each segment was assigned only to the most representative category.

Phase 3: After analyzing each group of segments as a whole, some subcategories were redefined by others that more accurately represented the ideas provided by the set of segments.

TABLE 1 Composition, date, and duration of the focus groups.

Segment	N°	Code	Date	Start	Duration (min)	Participants		
						Women	Men	Total
Nurses	1	N1	15/02/2022	13:00	95	9	0	9
	2	N2	15/02/2022	13:00	99	4	0	4
	3	N3	10/02/2022	16:00	91	9	0	9
Pediatricians	1	P1	09/02/2022	13:00	91	5	2	7
	2	P2	09/02/2022	13:00	74	5	2	7
	3	P3	08/02/2022	16:00	88	7	0	7

Abbreviation: min, minutes.

TABLE 2 Taxonomy of the segments.

Category Subcategory	Description (related to...)
Biology	Genetics, physiology, and endocrinology.
Biological development	Development of the stages and developmental milestones in each sex.
Genital anatomy	Anatomical differences in the excretory and reproductive systems.
Physical activity and sport	Strength and resistance during physical activity.
Sexual health	Sexually transmitted infections and pathologies of the reproductive system.
Other health areas	Other physical pathologies.
Biases	Cognitive errors related to gender.
Health professional–child dyad	Changes in the health professional–patient relationship when the two are of different sexes.
Physical examination	Differences in the attitude toward examination depending on the child's sex.
Differences in treatment	Differences in treatment according to the child's sex.
Encouragement of emotions	Reinforcement of certain emotions according to the child's sex.
Use of different labels and descriptions	Use of different labels and descriptions depending on the child's sex.
Mental health	Differences in psychological disorders depending on the child's sex.
Pain treatment	Differences in pain treatment.
Differences in communication strategies	Differences in elements of communication depending on the child's sex.
Reporting of sexual abuse	Differences in communication, formulation of questions, and comments about abusive sexual practices depending on the child's sex.
Communication between families and professionals	Differences in communication between professionals and parents depending on the child's sex.
Facilitators of bias	Behaviors that facilitate inaccurate or biased interpretations.
Lack of training	Need to acquire knowledge to detect and avoid bias.
Preponderance of women among pediatricians	The influence on biases of the preponderance of female practitioners in the profession.
Group influence	Thoughts reinforced by influential groups.
Sociocultural	Cultural and social differences.
Different social models	Social references that serve as models for young people.
Families	Parents, grandparents, guardians, or caregivers.
Parent–child relationships	Differences in treatment (prescribed by professionals) and in the role of parents as caregivers.
Family participation	Differences in the role of families in child care.

After completing the categorization, the transcripts were transferred to the MAXQDA Analytics Pro 2022 program for the treatment and analysis of qualitative data. With the digitized transcripts, the categories and subcategories established were created in the program and assigned to the previously selected segments.

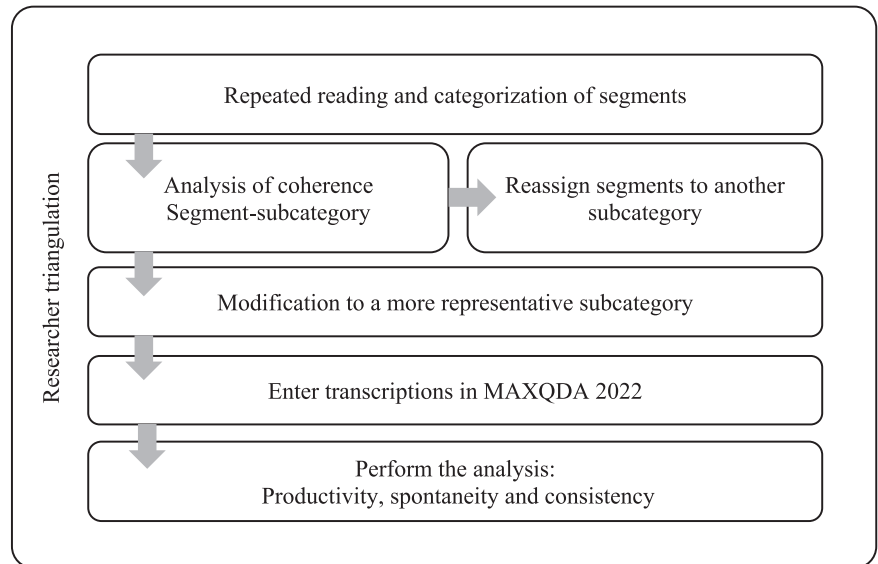
Once the texts had been analyzed and the opinions segmented and classified by category, the following assessments were carried out using MAXQDA 2022:

Individual productivity: number of opinions relating to each category and subcategory for each focus group.

Total productivity: number of opinions relating to each category and subcategory according to group.

Spontaneity: absolute frequency of each subcategory with respect to the total number of focus groups and the corresponding percentage.

Consistency: correlation of contributions between the focus groups calculated by the Jaccard method ($a/[a + b + c]$) considering only existence and ignoring nonexistence: that is, when there are segments associated with the same category, the similarity increases, but if they coincide in not providing any comment in the same category, the correlation does not increase or decrease (Figure 1).²⁰

FIGURE 1 Data analysis flowchart.

3 | RESULTS

Forty-three health professionals (39 women and 4 men) participated, of whom 22 were nurses and 21 pediatricians.

3.1 | Individual productivity

The productivity data for the segments categorized according to focus group are depicted in Table 3. The two focus groups with the highest participation were N3 and P3. The most productive group in the Biology category was N1 with 13 opinions; in the Bias category the most productive group was P3 with 37; in the Facilitators of bias category, it was N1, with six; and in the Families category it was P3 with 13.

3.2 | Total productivity

Table 3 shows a difference table in total productivity between nurses and pediatricians in the detection of Biases and a lower productivity in Facilitators of bias. Both groups of professionals had similar productivity with respect to the Biology and Families categories.

3.3 | Spontaneity

Supporting Information: Appendix C shows the spontaneity data of the taxonomy. In all the groups the subcategories Health professional–child dyad and Mental health were related to gender bias. The Facilitators of bias category was the least homogeneous.

3.4 | Consistency

Supporting Information: Appendix D shows the data for consistency from the correlation between all the focus groups in the study. The data suggest a higher intragroup similarity among pediatricians than among nurses.

3.5 | Generation of ideas

The classification of opinions makes it easier to find relationships that reflect the manifestation of gender biases. Below are some representative opinions of each subcategory, and the possible relationships with other categories are analyzed. Figure 2 shows a tag cloud with all the subcategories.

3.6 | Biology

This section includes comments regarding perceived differences between boys and girls, related to their biology (genetic factors, physiology, or endocrinology).

Biological development: the respondents stated that changes during the stages of development and the developmental milestones of each sex were possible generators of bias.

"[...] with early puberty in girls, perhaps we put more emphasis on this, looking out for short stature, or other problems. And in boys, sometimes, when they go through puberty they may no longer be seeing the paediatrician and so we don't monitor them."
(Nurse)

TABLE 3 Productivity of segments for each focus group.

Taxonomy	Nurses				Pediatricians				Total N + P
	IP			TP N	IP			TP P	
	N1	N2	N3		P1	P2	P3		
Biology	13	3	9	25	6	9	7	22	47
Biological development	4	1	2	7	0	1	2	3	10
Genital anatomy	1	2	1	4	1	0	1	2	6
Physical activity and sport	1	0	0	1	2	3	3	8	9
Sexual health	4	0	0	4	0	0	0	0	4
Other health areas	3	0	6	9	3	5	1	9	18
Biases	17	8	19	44	17	19	37	73	117
Health professional–child dyad	2	1	3	6	4	4	1	9	15
Physical examination	2	0	1	3	0	6	5	11	14
Differences in treatment	0	2	6	8	0	0	0	0	8
Encouragement of emotions	2	1	3	6	0	0	4	4	10
Use of different adjectives	0	1	0	1	4	0	5	9	10
Mental health	9	2	5	16	2	4	11	17	33
Pain treatment	0	1	0	1	1	1	3	5	6
Differences in communication according to sex	2	0	1	3	2	0	3	5	8
Reporting of sexual abuse	0	0	0	0	2	2	5	9	9
Family-professional communication	0	0	0	0	2	2	0	4	4
Facilitators of bias	6	1	4	11	2	0	3	5	16
Lack of training	0	1	0	1	2	0	2	4	5
Preponderance of women among pediatricians	0	0	1	1	0	0	1	1	2
Group influence	1	0	3	4	0	0	0	0	4
Sociocultural	3	0	0	3	0	0	0	0	3
Different social models	2	0	0	2	0	0	0	0	2
Families	7	0	9	16	2	9	13	24	40
Parent–child relationships	0	0	6	6	0	9	3	12	18
Family participation	7	0	3	10	2	0	10	12	22
Total segments	43	12	41	96	27	37	60	124	220

Abbreviations: E + P, total sum of segments of the nurse and pediatrician groups; IPI, individual productivity; N1, N2, and N3, nurse focus groups; P1, P2, and P3, pediatrician focus groups; TP, total productivity.

“When a one-year-old boy or a one-year-old girl comes with a fever, the differences between them are minor. I don't know if at four or ten years old it's the same... in fact I think it would be slightly different.”
(Paediatrician)

“If you examine a boy and see there's no phimosis and there's no doubt about it. But when you examine a girl with a labial fusion, when you talk about these issues ... no one had ever told me about it... a labial fusion is very common, it's the same as phimosis, but it's not something people talk about.” (Nurse)

Genital anatomy: the respondents mentioned differences between boys and girls regarding the genital anatomy that might affect the examination.

“[...]the genital area is monitored much more closely in boys than in girls, people are on the lookout for phimosis, but with girls there's less control than with

FIGURE 2 Tag cloud with all subcategories.



boys, there isn't the same kind of systematic review."
(Paediatrician)

Physical exercise and sport: the general opinion was that boys perform more physical exercise than girls and as a consequence receive more medical attention related to this activity.

"Girls are more sedentary." (Nurse)

"Nearly all boys play sports, but when you ask girls they don't do much sport in their extra school activities." (Paediatrician)

Sexual health: this is a key biological aspect related to gender bias; according to professionals, gender bias could affect the approach in the treatment of genital infections or other pathologies related to the reproductive system.

"Genital infections, [...], girls who, for example, tend to masturbate a lot. And very often, this can cause irritation in the vulva... And then, it is true that, culturally, attempts are made to stop girls doing it. [...] And if their hands are dirty, it can also produce an infection. But, in boys, it isn't looked down on so much ... they are not judged as much." (Nurse)

Other health areas: this category includes many observations related to physical pathologies other than the ones mentioned above, such as endocrine problems, genetic alterations, and headaches.

"Many rare pathologies present different pathological processes and yes, I would say that there is indeed a difference in relation to sex – for example, in the rare pathologies that are precisely related to being XX or being XY." (Nurse)

"Brain tumours are more common in boys."
(Paediatrician)

3.7 | Biases

This category includes aspects in which respondents found implicit biases in the relationship between the health professional and the child.

Health professional–child dyad: the health professionals emphasized that the treatment of patients, especially in genital examinations, can be biased when professional and patient are of different sexes, especially in minors who are approaching adolescence.

"I've noticed that, being a woman, in health and school matters, you connect in a different way with girls."
(Nurse)

"In the case of a girl and if the family doctor is male, the mother often quietly asks whether she could have a female doctor." (Nurse)

"[...] I always try to carry out the examination, but it is true that in many cases for a young male paediatrician

having to examine the genitals of an adolescent or preadolescent girl is quite awkward." (Paediatrician)

"I don't examine girls as well as boys, because the atmosphere is less relaxed." (Paediatrician)

Physical examination: according to the participants, the physical examination they carry out may differ according to the sex of the patient. Despite the fact that the physical examination includes many more aspects than the genital examination, the male pediatricians once again pointed out that it is more difficult in girls than in boys.

"I still meet young male paediatricians who don't examine girls, that is, when they do the revisions, they ignore the girl's genitals. This seems to me to be a terrible state of affairs." (Paediatrician)

"It also happens to female pediatricians, we sometimes avoid examining teenage girls ... it's much easier for us to examine a male." (Paediatrician)

"Genital examinations are not carried out as thoroughly as in males, whether the doctor is a man or a woman." (Paediatrician)

Difference in treatment: the nurse group felt that the way health staff deal with minors may be biased according to the patient's sex. Girls are expected to take more responsibility for their healthcare. Nurses also report that relatives are more permissive toward their sons or grandsons than toward their daughters or granddaughters, and are more attentive to the symptoms of males than of females in the case of a possible illness.

"Yes, it's true that sometimes when it's a boy you think "poor thing", and when it's a girl maybe you're a little more demanding." (Nurse)

"A little boy suddenly kicks his mother and it's just a tantrum. Or he hits her on the hand, and interrupt her all the time. In this situation there is a bias because boys are allowed get away with it but girls have to obey the rules." (Nurse)

Encouragement of emotions: some professionals reported that their verbal behavior is affected by the emotions displayed by

the child. Emotions in boys such as anger are tolerated; the aim seems to be that boys should not cry. It is more accepted that girls express emotions such as sadness.

"From the moment they're born, boys aren't allowed to show their emotions. They aren't allowed to show any weakness, they have to be strong because they're boys." (Nurse)

"They're always hiding their emotions, "they say there's no problem", they mustn't cry." (Paediatrician)

Use of different labels and descriptions: the participants stated that they use adjectives that are more related to emotions when they talk to girls and more related to behavior when they talk to boys ("brave," "strong," being a "champion").

"The emphasis is on achievement in boys (e.g., being a "champion") and on looking pretty in girls (e.g., being a "princess"). (Nurse)

"Yes, I admit that a few years ago I personally went along with this [...] and treated them differently, not because there was a lack of affection but because he was a big strong boy, a macho, a champion and my daughter was the princess of our house." (Paediatrician)

Mental health: this is the most prominent category, with 33 comments. The participants noted the presence of psychological problems that manifest themselves more in girls (self-injury, eating disorders) and others in boys (attention deficit, hyperactivity, or autism spectrum disorder).

"There are some diseases that are rare in males, like anorexia, eating disorders, etc." (Nurse)

"Boys are always diagnosed with impulsivity earlier than girls; girls very often remain underdiagnosed, until time goes by and someone says "oh! What's wrong with this girl, she's distracted all the time?" (Paediatrician)

"With a very bad attention disorder, or a delayed behaviour disorder, then an antipsychotic might well be given sooner to a boy who presents certain symptoms than it would to a girl." (Paediatrician)

Respondents also reported problems which used to be much more frequent in one sex, but that this was no longer the case: examples were bullying (physical in boys and verbal in girls), eating problems, and excessive use of technology (video games in boys and use of social networks in girls).

"Today, we have almost the same percentage of male and female video game addiction, although when you look a little closer you see there are differences in the games they play, for example, more racing games among boys than among girls." (Nurse)

"There is more physical bullying among boys; among girls there may be more verbal bullying; as for cyberbullying on the internet, the victims tend to be girls, and in the case of grooming as well." (Nurse)

Pain treatment: some professionals think that in consultation the idea is encouraged that boys should resist pain and that girls express it more (in the form of headaches or period pains). Sometimes, parents also exhibit these behaviors toward their children.

"Girls are braver and endure much more pain than boys." (Paediatrician)

"With acute abdominal pain, which may be more a perception of the parents rather than of the children, but many parents, especially fathers but mothers too, describe their sons as being able to withstand a lot of pain." (Paediatrician)

"Headaches are much more frequent in girls." (Paediatrician)

Differences in communication according to sex: some nurses and pediatricians stated that the way they communicate with their patients is influenced by the patient's gender. Girls are given fuller explanations, because they are regarded as being cognitively more mature.

"Very often we give more complete explanations to girls, because we believe that they are more mature." (Nurse)

In contrast, boys are more likely to be told that they need to toughen up, that they must be strong and hide their emotions, because expressing emotions is regarded as a sign of oversensitivity.

"I've heard this so often: "Boys don't cry."
(Paediatrician)

Reporting sexual abuse: The pediatricians stated that they addressed the issue of sexual abuse more frequently with girls than with boys. They said that they explain the difference between a genital examination carried out by a health professional and any other type of touching by other people, including parents.

"Yes, it is a problem that we face in general, yes, sometimes you find a little girl acting strangely and you might suspect that she's been sexually abused or mistreated; it happens with boys too, but we are less attuned to it." (Paediatrician)

"[...] no one should look at or touch you under your panties; in this case it's different because I'm the doctor and I'm going to carry out a medical examination." [Moderator: Do you also give that message to boys: don't let anyone touch you under your underwear...?] "Perhaps not as much." (Paediatrician)

Communication between family and professionals: the pediatricians felt that communication with the family tends to be focused on the figure of the mother, who generally occupies the role of caregiver. This becomes evident in telephone calls from the health service, where the father usually refers to the mother to give an answer. They also report that this trend is beginning to change.

"It is nearly always the mothers who come with their children, and more so now than during the pandemic when we made the phone calls; the fathers ended up getting angry because the first phone listed was theirs, and they would say "no, no, don't ask me, call the other phone because I don't know anything."" (Paediatrician)

3.8 | Facilitators of bias

This category comprises variables in the relationship between health staff and minors that may lead to a mistaken or biased interpretation of events.

Lack of training: the respondents stated that they were not trained to detect and avoid gender biases. They emphasized the need to broaden their knowledge regarding, for example, the examination of the sex organs.

"We also need a lot of training on the concept... I mean, these stigmas, that we all have tattooed on our skin and are so hard to shake off... If a boy appears effeminate, does it automatically mean he's homosexual? Well, no." (Nurse)

"We haven't received training and I think it's something we need ... the training shouldn't be to differentiate in terms of sex because that would introduce a bias, but we need to be aware of the different connotations that a person's sex has for certain diseases; it would be useful to receive training in, for example, the symptoms that males with a disease present but females don't." (Paediatrician)

The preponderance of women in pediatrics: the participants stated that the preponderance of women in the nursing and pediatric professions may bias their treatment of patients.

"The fact that there are so many female paediatricians may or may not mean that we treat boys and girls differently, because along with nursing it is one of the medical specialities with the highest contingent of women. I don't know if this may be a determining factor in the study of gender equality." (Paediatrician)

Group influence: The nurse group felt that the pressure of influential groups, generally the peer group and especially in adolescents, may reinforce biased thoughts in the minors that eventually affect their health.

"The link between the emotions and acceptance of others and others' acceptance of you is very strong, especially in girls, in whom there is a strong link with eating disorders because the physical appearance is so important. And this is a social pressure and it is well recognized." (Nurse)

Sociocultural: the nurses mentioned the cultural and social differences that allow boys to carry out more risky behaviors than girls. Religion is another factor that has an influence in this regard.

"For a boy to have a circumcision is one thing: for a girl, it is quite another – a mutilation. There is a gender difference here, a biological difference, and a difference in the intervention performed. It isn't the same, perhaps because of religion, what they do to a man or to a girl or a boy." (Nurse)

Different social models: the nursing group stressed the importance of social references (athletes, youtubers, etc.) who shape the behavior of minors and may generate bias for society as a whole.

"Obesity, and these diseases..., is that they also depend a lot on the references the children have, because boys and girls have different reference points. Boys tend to look up to athletes, people who take part in risky sports, youtubers and so on, while girls admire singers and TikTokers, who all have fantastic figures and know all the dance steps and everything. And of course, this changes a lot, because a male youtuber might be sitting in the chair and be physically unimpressive, but a female TikToker has to be attractive." (Nurse)

3.9 | Families

Comments on perceived differences related to gender biases and family roles are included in this section. Adults, as role models for minors, can contribute to the perpetuation of this problem.

Parent-child relationships: the professionals highlighted the importance of the mother's role as caregiver and, on occasions, how health staff themselves participate in maintaining this role. They stress the difficulty they have in persuading parents to agree to follow the instructions they give regarding health. They note that parents are more permissive with boys and more demanding with girls.

"We realize that we treat fathers and mothers differently." (Nurse)

"Because fathers think about their child's health in one way and mothers in another. And this may be the difference between activating and not activating a resource, or taking a long time to do so." (Nurse)

"We find it so natural that it's the mothers that bring their children to the consultancy ... at first, maybe you insist that both parents come, but very often you just give up." (Paediatrician)

Family participation: this is the second most commented subcategory, with 22 contributions. The health professionals pointed out the differences in the role that families occupy in the care of the minor. They stressed that, with the increase in paternity leave in recent years, the participation of fathers is now greater, and more fathers now accompany mothers to the doctor's office.

"It tends to be the mothers that come, but on some occasions this is because the mother has appropriated this role, and the father says that if he was allowed to he would come more often." (Nurse)

"One thing that has made it much easier for fathers to become more involved is the increase in paternity leave." (Nurse)

"The caregivers in the end are the mothers." (Paediatrician)

"I'd say that, at the emergency service, in say 70-80% of cases, when both parents come and when we tell them: "sorry, only one of you can come in, it's usually the mother that comes in with the child." (Paediatrician)

4 | DISCUSSION

The aim of this exploratory study is to analyse and describe the ways in which gender biases manifest themselves in the field of pediatric health, by examining the view of a sample of 43 nurses and pediatricians employed by the Catalan health system.

The idea that emerges most strongly from the analysis is the relationship between mental and physical health problems and gender bias based on biological differences. This finding is in line with the review by Piccini et al. who corroborated the view put forward by Artazcoz according to which there was a misconception of the differences between males and females that leads to discrimination between the sexes.^{5,13}

The idiosyncrasy of the family is the second important concept involved in the manifestation of bias, and is related to other categories assessed in this study. For example, the way parents participate in health processes; the importance of promoting different emotions in minors; the use of labels when communicating between adults and children; the difference in approach to possible situations of abuse; or cultural and religious influences are all attitudes that directly affect the behavior of health staff.

Parents' attitudes are a product of their style of parenting and the values and goals (or expectations) they have for their children's development, which in turn are informed by cultural, social, and societal images.^{21,22}

It is also relevant to consider the gender double standard in attitudes toward children's health issues, suggesting that adults evaluate differently the same behavior depending on whether children are girls or boys.²³

Some studies underlined this differential behavior in parents toward their children. Mothers and fathers retain some distinct gender role attitudes that may vary depending on the sex of the child leading to a differential attitude, judgment, and an unequal treatment.²⁴⁻²⁶ To some extent, we hypothesize those differential

attitudes could also be observed in the evaluation on medical symptoms and their severity—for instance in pain—by both parents and healthcare providers.²⁷⁻²⁹

Our findings highlight the need to improve the training of professionals in concordance with other evidence.¹⁴ Thus would enable them to identify and prevent errors due to implicit bias, both in diagnosis and in clinical care. This training would prepare them to understand and manage their own behaviors and attitudes and also those of the patients and their relatives. This might be reflected, for example, in improvements in the physical examination of minors regardless of their sex, thus normalizing this situation at a social level. It might even encourage more male medical graduates to choose pediatrics as their specialization.

The limitations of this study are to do with the problems inherent in the use of the focus groups: (a) group pressure, which may influence the views that participants express; (b) the use of open questions, which may not be suitable for the measurement of phenomena; (c) the limited amount of data collected, and the low contribution of each participant; (d) the difficulty of forming homogeneous groups; and (e) the low statistical representativeness of the data. Furthermore, the classification and categorization may be affected by the bias introduced unintentionally by the researchers, although the triangulation technique was used to avoid or minimize it.

However, this study has the purpose of broadening the understanding of a phenomenon innate to human beings, since cognitive errors are produced automatically as mental shortcuts that facilitate decision-making.³⁰ The capacity to detect these errors enables us to use strategies, both exogenous and endogenous, to minimize their impact. Our findings suggest as other studies do that to effectively tackle implicit bias within the field of pediatrics it is essential to approach solutions with a recognition that the process goes beyond personal feelings. It revolves around how individuals process information, a factor that can significantly influence clinical decision-making and, consequently, affect overall health outcomes.³¹ Academic training that includes the study and prevention of biases in professional activity, and promotional campaigns for the general population on how to detect these biases and how to foster equality, can help to avoid the negative consequences of these cognitive errors.

At the research level, more qualitative, quantitative, and mixed studies are required that address gender biases in healthcare, especially in pediatrics—an area in which gender bias has not been studied in depth, but one that represents the first gateway to the healthcare system for a population that may be especially vulnerable. In addition, in the field of health psychology it is important to continue this research applying qualitative methodologies and interview techniques to analyse and interpret these cognitive biases.

AUTHOR CONTRIBUTIONS

Neus Carrilero: Conceptualization; funding acquisition; investigation; writing—original draft. **Virtudes Pérez-Jover:** Data curation; formal analysis; investigation; methodology; writing—original draft. **Mercedes Guilabert-Mora:** Data curation; formal analysis;

investigation; methodology; writing—original draft. **Anna García-Altés:** Conceptualization; investigation; project administration; writing—review and editing.

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CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interest.

DATA AVAILABILITY STATEMENT

Data are available on request from the authors.

ETHICS STATEMENT

The study was approved by the Ethics Committee for research involving medication (CEIm) of the IDIAP Jordi Gol with CEIm code: 21/250-P.

TRANSPARENCY STATEMENT

The lead author Virtudes Pérez-Jover affirms that this manuscript is an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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REFERENCES

- Olenski AR, Zimmerman A, Coussens S, Jena AB. Behavioral heuristics in coronary-artery bypass graft surgery. *N Engl J Med.* 2020;382(8):778-779. doi:10.1056/NEJMc1911289
- Dalmacy DM, Diaz A, Hyer M, Pawlik TM. Age-based left-digit bias in the management of acute cholecystitis. *J Gastrointest Surg.* 2021;25(12):3239-3241. doi:10.1007/s11605-021-05065-3
- Husain SA, King KL, Mohan S. Left-digit bias and deceased donor kidney utilization. *Clin Transplant.* 2021;35(6):e14284. doi:10.1111/ctr.14284
- Canadian Institutes of Health Research: Institute of Gender and Health. What a difference sex and gender make Vancouver, British Columbia (Canada): Canadian Institutes of Health Research. 2012. Accessed March 10, 2023. https://cihr-irsc.gc.ca/e/documents/What_a_Difference_Sex_and_Gender_Make-en.pdf
- Artazcoz L. La salut des de la sensibilitat de gènere. *Barcelona: Quaderns de l'Institut núm. 2, Institut Català de les Dones.* 2007. https://dones.gencat.cat/web/.content/03_ambits/docs/publicacions_quaderns02.pdf
- Carnes M, Bartels CM, Kaatz A, Kolehmainen C. Why is John more likely to become department chair than Jennifer? *Trans Am Clin Climatol Assoc.* 2015;126:197-214.
- Criado C. *Invisible Women. Part IV Going to the Doctor.* Harry N. Abrams Inc.; 2019.
- Llovet-Valls C. *Mujeres Invisibles para la medicina. Patologías invisibles: los sesgos de género en el diagnóstico.* Capitan Swin; 2020.
- Glezerman M. *Gender Medicine.* Abrams Press; 2016.
- Ruiz Cantero MT. Gender bias in health care. *Escuela Andaluza de Salud Pública* 2009;10. <https://www.easp.es/project/sesgos-de-genero-en-la-atencion-sanitaria-serie-nueva-salud-publica/>
- FitzGerald C, Hurst S. Implicit bias in healthcare professionals: a systematic review. *BMC Med Ethics.* 2017;18(1):19.
- Ruiz Cantero MT. *Perspectiva de género en medicina* Barcelona Fundació Dr. Antoni Esteve. 2019. Accessed March 10, 2023. <https://www.esteve.org/capitulos/perspectiva-de-genero-en-medicina/>
- Piccini P, Montagnani C, de Martino M. Gender disparity in pediatrics: a review of the current literature. *Ital J Pediatr.* 2018;44(1):1. doi:10.1186/s13052-017-0437-x
- Barber Doucet H, Ward VL, Johnson TJ, Lee LK. Implicit bias and caring for diverse populations: pediatric trainee attitudes and gaps in training. *Clin Pediatr.* 2021;60(9-10):408-417. doi:10.1177/00099228211035225
- Heidegger. *Ser y tiempo.* Trotta; 2012.
- Glase BG, Strauss AL, Strutzel E. *Discovery of Grounded Theory: Strategies for Qualitative Research.* Aldine Publishing; 1967.
- Krueger RA. *El grupo de discusión. Guía práctica para la investigación aplicada.* Pirámide; 1991.
- Morse JM. *Asuntos críticos en investigación cualitativa.* Universidad de Antioquia; 2003.
- Amezcuza M, Gálvez Toro A. Los modos de análisis en investigación cualitativa en salud: perspectiva crítica y reflexiones en voz alta. *Rev Esp Salud Pública.* 2002;76(5):423-436.
- Real R, Vargas JM. The probabilistic basis of jaccard's index of similarity. *Syst Biol.* 1996;45(3):380-385.
- Iruka IU, Durden T, Kennel P. Changing faces: parenting, culture, and child learning and development. *Zero to Three J.* 2015;35(4):10.
- Okagaki L, Bingham GE. *Parenting: An Ecological Perspective. Parents' Social Cognitions and Their Parenting Behaviors.* Lawrence Erlbaum Associates; 2005:3-33.
- Eichler M. *The Double Standard: A Feminist Critique of Feminist Social Science.* St. Martin's Press; 1980.
- Conrade G, Ho R. Differential parenting styles for fathers and mothers: differential treatment for sons and daughters. *Aust J Psychol.* 2001;53:29-35.
- Mammen K. Fathers' time investments in children: do sons get more? *J Popul Econ.* 2011;24:839-871. doi:10.1007/s00148-009-0272-5
- Gervai J, Turner PJ, Hinde RA. Gender-related behaviour, attitudes, and personality in parents of young children in England and Hungary. *Int J Behav Dev.* 1995;18(1):105-126. doi:10.1177/016502549501800106
- Miller MM, Williams AE, Zapolski TCB, Rand KL, Hirsh AT. Assessment and treatment recommendations for pediatric pain: the influence of patient race, patient gender, and provider pain-related

- attitudes. *J Pain*. 2020;21(1-2):225-237. doi:10.1016/j.jpain.2019.07.002
28. Cohen LL, Cobb J, Martin SR. Gender biases in adult ratings of pediatric pain. *Children's Health Care*. 2014;43:87-95. doi:10.1080/02739615.2014.849918
 29. Earp BD, Monrad JT, LaFrance M, Bargh JA, Cohen LL, Richeson JA. Featured article: gender bias in pediatric pain assessment. *J Pediatr Psychol*. 2019;44(4):403-414. doi:10.1093/jpepsy/jsy104
 30. Kahneman D. *Pensar rápido, pensar despacio*. Debate; 2012.
 31. Greenwald AG, Banaji MR. Implicit social cognition: attitudes, self-esteem, and stereotypes. *Psychol Rev*. 1995;102(1):4-27.

SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

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