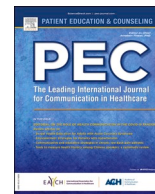




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## Reflexivity as a tool for medical students to identify and address gender bias in clinical practice: A qualitative study

Elisa Geiser<sup>a,\*</sup>, Léa Violette Schilter<sup>a</sup>, Jean-Michel Carrier<sup>b</sup>, Carole Clair<sup>a</sup>, Joëlle Schwarz<sup>a</sup>

<sup>a</sup> Center for Primary Care and Public Health (Unisanté), Lausanne, Switzerland

<sup>b</sup> Medical Education Unit, Faculty of Biology and Medicine, University of Lausanne, Lausanne, Switzerland

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## ABSTRACT

**Objectives:** Gender bias interferes with medical care for both men and women, leading to health inequalities. Reflexivity is used in medical education to improve health provision. This study aims to understand if a reflective approach integrated in medical practice enables raising awareness of gender bias during medical school teaching. **Methods:** We conducted this study in general ambulatory medicine in Lausanne Hospital, Switzerland with 160 Master's students. Through group discussions and reflection questionnaires, students were asked to discuss clinical cases they encountered focusing on potential gender bias. We analyzed the data using a thematic analysis approach.

**Results:** The reflection on the clinical reasoning steps from a real case identified gender bias at each stage of the clinical case management. The analysis revealed two factors that facilitated gender reflexivity: guidance from a gender expert and peer-to-peer exchange.

**Conclusions:** Our study shows that a reflective approach integrated in medical practice enables raising awareness of gender bias during medical teaching. It provides students with a systematic method they can apply in their future clinical work, thus improving care processes and experiences towards more equitable care.

**Practice implications:** All gender and medicine curricula should include teaching such as this linking theory and practice through reflexivity.

### 1. Introduction

Men and women are not equal in terms of health and illness. Some of the differences are sex-related, that is they are based on biological differences between men and women; and some are gender-related, based on social characteristics that define men and women. [1] As extensively discussed in recent literature, these two components are intertwined. [1–3] Within health systems, medical doctors can perpetuate health disparities between sexes/genders, notably through gender bias in clinical management. [4] There are two main gender biases in medicine: *gender stereotypes* whereby men and women are managed differently when not clinically relevant; and *gender blindness* leading to disregarding existing differences that have clinical implications. [5] Gender bias in medicine interferes with optimal medical care for both men and women, leading to risks for patients including excess mortality. [4] Evidence has shown for example, that gender bias leads to underdiagnosis and mismanagement of coronary heart disease in women [6,7], or of depression in men. [8].

Several studies have brought to light gender bias and stereotypes in medical students. [9–12] Since the mid-1990 s, initiatives addressing gender bias in the medical field have been implemented mainly in the form of integrating a gender perspective in medical education. [13,14] It has been shown that a combination of standalone courses and clinically-integrated teaching is effective for improving medical knowledge, as well as skills, attitudes and behaviors, to address bias owing to stereotyped ideas about men and women, especially when repeated and prolonged. [15] By self-reflecting on one's own and others' gender perceptions and how they interfere with clinical practice, gender bias can be identified, deconstructed and minimized in clinical practice. [16].

At the Lausanne School of Medicine, Switzerland, students follow theoretical lectures on basic aspects of gender medicine in the first three study years. Introduced in 2019 as a pilot project, a clinically-integrated module takes place in the fourth and fifth years, aimed at enhancing reflexivity on how gender influences clinical management.

\* Correspondence to: Route de Berne 113, 1010 Lausanne, Switzerland.

E-mail address: [elisa.geiser@unisanté.ch](mailto:elisa.geiser@unisanté.ch) (E. Geiser).

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### 1.1. Reflexivity as a tool to identify and address gender bias

As defined by Nguyen et al. in the field of medical education, reflection is “the process of engaging the self in attentive, critical, exploratory and iterative interactions with one’s thoughts and actions, and their underlying conceptual frame, with a view to changing them and with a view on the change itself”. [17] Reflective practice in medical education is described as an essential approach to building competence and professionalism of healthcare providers, for instance in reflecting on clinical decisions that involve power dynamics that may interplay with healthcare delivery. [18–21] Thus, reflective practice contributes to improving service provision and patient care-experiences [18, 20, 22, 23], and leads towards more equitable care. [18, 19, 21, 24].

In medical education, there is a broad variety of reflective activities – e.g. reflective journals, critical incident reports, group discussion [20, 25] – which lead to an array of reflective practices. These practices range from reflection – critical thinking that focuses on certain aspects of practice – to reflexivity – personal introspection related to one’s own personality and social identity and their impact on equity and justice in a self-transformative manner. [17–19] A recent systematic review on effective teaching methods for developing reflexivity in medical students concluded that guidelines (prompting questions or templates) for reflective writing and feedback were the main drivers of improved student reflexivity. [25].

We hypothesized that reflexivity is a relevant approach to help students identify gender bias in clinical practice, and to act on it in the future. A few studies exist using reflexivity to mitigate general implicit bias in medical students [26,27], or specifically, on gender reflexivity among medical doctors [28,29]; yet to our knowledge, none were conducted on gender bias in medical students. This article thus contributes to filling this gap. This study aimed to understand if a reflective approach integrated in medical practice enables raising awareness of gender bias during medical school teaching. Our subsequent aim was to identify what factors facilitated reflective practice on gender bias.

## 2. Methods

To meet our research aims we adopted a qualitative study design using observations and students’ written reflections.

### 2.1. Setting and study population

The gender reflexivity project, conducted between March and August 2019, was incorporated into the clinical internship in general ambulatory medicine at Unisanté (Lausanne University Centre for General Medicine and Public Health), Switzerland. Study participants were all 1st year Master’s students undergoing their internship in the outpatient clinic over the period (total=160), in groups of eight to ten students per week. The original teaching activity of the internship was clinical reasoning, structured in three steps:

- 1) On day one, students received an introduction to systematic clinical reasoning;
- 2) Over the week, students were immersed in clinical practice under supervision by a medical intern;
- 3) On day four, students met in groups of four to five with a chief resident, and each student presented a clinical case they had observed during their internship, applying a systematic clinical reasoning through anamnesis (patient history), clinical examination, diagnosis, and management.

Within this existing setting, the gender reflection exercise was integrated with a short theoretical refresher on day one, of previous gender medicine lectures, including gender bias, specifically gender blindness and stereotypes. Students were invited to reflect on the influence of gender in clinical practice over the forthcoming week. On day four, a

gender medicine expert – either a medical doctor (EG) or a health sociologist (JS) from the Gender Medicine Unit – took part in the discussion, and for each clinical case the question was systematically asked: “had the patient been of the opposite gender, would the medical consultation have been different?” The group discussed the answer collectively. Last, on day five, each student filled in an on-line reflection questionnaire with open questions, presenting their clinical case, reflecting individually on their potential gender bias, on what they had learned about gender bias and gender medicine and finally, on what they would change in their future clinical practice. The gender medicine expert provided written feedback to each student.

The individual reflective exercise was integrated into the curriculum and mandatory for certification of the academic year.

### 2.2. Data collection and instruments

We developed a reflection questionnaire (Fig. 1) based on a literature review of reflexivity in medical education. It was stored on an electronic portfolio [30] that students use throughout their curriculum to track their clinical experiences, any important feedback, formative evaluations and personal reflections. We extracted the reflection questionnaires answers (full sample, no exclusion) from the portfolio and coded them to mask identification. Observation notes taken by EG or JS during the case discussion sessions and notes taken during the debriefing session with the chief resident who facilitated the group discussion at the end of the academic year further constituted our dataset. We obtained participants’ consent via the charter that students’ accept when registering on their electronic portfolio, stipulating that their anonymized data may be used for research and development purposes. The study was submitted to the Cantonal Ethics Committee for Research on Human Beings (CER-VD), who stated that ethical approval was not required (Req-2020-00996).

### 2.3. Data analysis

We analyzed the students’ texts and observation notes using a thematic analysis approach [31] with the MAXQDA Version 18 software (Verbi GmbH, Berlin, Germany). To get familiarized with the data, EG first read all questionnaires and notes, recording initial ideas (writing memos). Three researchers (EG, LVS and JS) generated the initial codes independently, coding interesting features of the data in a systematic fashion across 20 rich reflection questionnaires, collating data relevant to each code. Then researchers searched for categories by collating codes into potential categories. Findings were discussed jointly and reconciled looking for inconsistency over absence/presence of codes, and between researchers’ interpretations. Finding agreement on a consistent analysis was performed through refinement of a codebook, generating clear definitions and codes for each category. Categories mirroring the research questions were added to the codebook to ensure that they were captured and analyzed. Finally, EG coded the full dataset in a systematic fashion, applying the codebook and collating data relevant to each code, and codes into categories. We started interpreting the data iteratively through memo writing during coding and linking observation notes to the students’ texts. To benefit from multiple discipline perspectives (medicine, sociology, psychology, gender studies), we presented preliminary findings to the wider Gender Medicine Unit at Unisanté to refine the specificities of each categories and the overall story of the analyzed data. Triangulation of our interpretations allowed establishing trust and confidence in our analysis.

We analyzed data in original language (French) and selected quotes were translated into English and checked by a native speaker.

## 3. Results

Overall, students completed 160 reflection questionnaires (92 female and 68 male students), and 35 group discussions took place. The

**1. INDIVIDUAL OBSERVATIONS AND SELF-REFLECTION BASED ON AN ENCOUNTERED CLINICAL CASE**

*Briefly describe a clinical case encountered during the internship: ...*

*Anamnesis: Would the anamnesis have been different if the patient had been of the opposite gender?*

Yes  No

*Clinical exam: would the clinical exam have been different if the patient had been of the opposite gender?*

Yes  No

*Differential diagnosis: Would the differential diagnosis assumptions have been different if the patient had been of the opposite gender?*

Yes  No

*Management: Would the proposed diagnostic and/or therapeutic measures have been different if the patient had been of the opposite gender?*

Yes  No

*Using your previous answers, describe for each step related to the clinical consultation (anamnesis, etc.) the elements that support an identical or different approach depending on the gender of the patient: .....*

**2. COLLECTIVE REFLECTION**

*Following the group session, are there any important points (agreement or disagreement) that were raised from your presented clinical case?*

**3. PERSONAL SYNTHESIS AND SELF-REFLECTION**

*What are the most important elements I have learned?*

*What aspects have been most difficult for me?*

*What will I integrate into my medical practice?*

**Fig. 1.** Reflection questionnaire (Accessed by students via their electronic portfolio).

thematic analysis revealed different categories that we grouped into three large themes to best address the study aims (Fig. 2): (3.1) outcomes of the reflective exercise: was awareness raised?; (3.2) the form and content of reflective practice: a systematic reflective practice structured on clinical reasoning steps from real clinical cases; and (3.3) factors facilitating reflexivity: what were the elements that students identified as useful to become aware of their own or others' gender bias?

### 3.1. Reflective practice outcomes

Overall, the gender reflection exercise was very well accepted by the

students. Many reported that they found it useful to get aware of gender bias in their medical practice. The proposed reflective practice allowed the majority of students to identify either their own gender bias or/and that of others (group members or physicians observed during their internship). The following excerpts illustrate how awareness was raised: [Text box 1].

Only seven students out of 160 did not engage in gender reflection in their questionnaires. They answered all questions purely from a medical point of view without mentioning gender. We could hypothesize that these students were not sensitized to gender bias despite group reflection or were not motivated by the exercise.

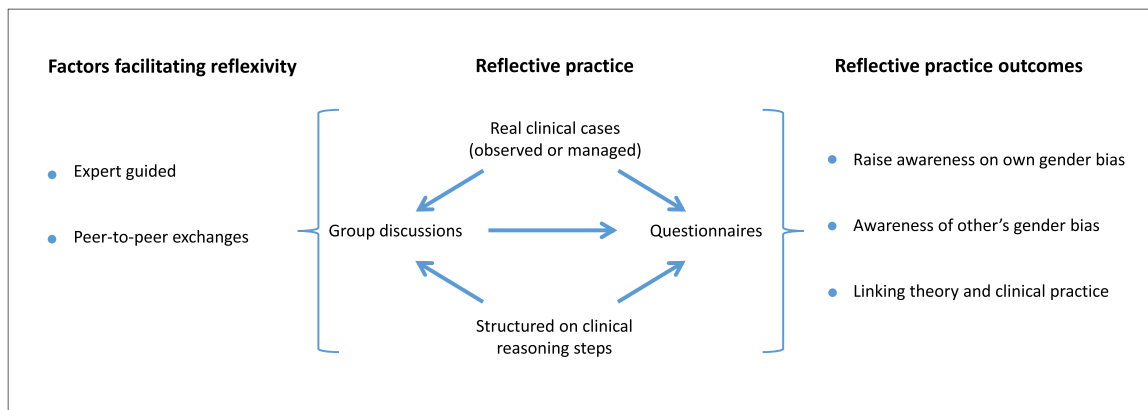


Fig. 2. Main themes enabling and emerging from reflective practice to identify gender bias.

### Text box 1

*“This session made me realize that in any medical situation, regardless of the reason for consultation, gender issues may be present. You always need to ask yourself how you would manage the patient if they were a different gender. This reflection helps us avoid a missed diagnosis that one might rule out for a particular gender.”* [ID\_109, man].

*“I really appreciated being sensitized to the influence of gender in medical practice, especially through group discussions. Also, challenging myself by analyzing possible gender bias and handling undesirable and harmful subjectivity as much as possible.”* [ID\_142, man].

Some students mentioned they acquired gender bias awareness through the lectures they had in their medical course. In these lectures, notions of sex and gender were defined; their influence on health explored and the two main gender biases (stereotypes and blindness) explained and developed. In the first year of the Master’s degree, a 1-hour lecture on pain and gender is included in the curriculum covering sex/gender differences in pain onset and management. Some students reported the usefulness of the theoretical lectures and related to them during the clinical reflective activity:

[Text box 2].

Some expressed that continual sensitization about gender over their medical studies was valuable:

[Text box 3].

One student noted the usefulness of the practical exercise included in the clinics that complemented the theory of the lectures. Reflective practice in clinical situations seems to maintain awareness levels for the ever-present gender bias:

[Text box 4].

Inversely, one student expressed he didn’t see the value of discussing gender medicine that was already covered in lectures again in clinical practice as he felt other clinical aspects were more important:

[Text box 5].

### 3.2. The form and content of reflective practice

Through the combined approach of group discussions and individual

reflection, we guided student reflection on gender bias along the defined steps of systematic clinical reasoning, in real, either observed or managed clinical cases. The step-by-step thinking alongside anamnesis, clinical examination, differential diagnosis and/or therapeutic measures allowed questioning clinically-relevant gender differences or equality at each stage of the clinical reasoning rather than only at the final diagnosis. At the anamnesis stage, for example, students became aware that they tended to appraise the psychosocial context differently depending on the gender. Several of the reflection questionnaires reported that for female patients, anamnesis questions likely focused on family situations, while for male patients it mainly concerned their work, as illustrated in the reflection of this male student:

[Text box 6].

Regarding the clinical examination, some students reported that sometimes the patient gender influenced the way they examined the patient. This was seen frequently in the discomfort felt by male students when examining female patients, relating to the intimacy of patients. A female student described a consultation with a woman wearing a veil, for example, consulting for lumbar pain and who was not asked to remove her clothes:

[Text box 7].

Concerning diagnosis and medical care, students also identified gender bias such as insufficient analgesic dosage for women, or delays in diagnosis for women, as described in this reflection:

[Text box 8].

These quotes illustrate that reflection along the clinical reasoning

### Text box 2

*“To tell the truth, I didn’t encounter any particular difficulties [with this exercise], as, since [] the lecture on gender medicine in my first year, I’ve become sensitized to the issue and so in my diagnostic process, I try to think about whether there’s bias in my interpretation all the time.”* [ID\_008, man].

**Text box 3**

*“We have already discussed the bias that can arise in our medical practice due to gender on several occasions in our curriculum. I think this is a theme we need to be continuously aware of.” [ID\_129, man].*

**Text box 4**

*“Even though we were made aware of gender bias early in our curriculum, in spite of myself it is still present in certain aspects, and also in the medical practice of my superiors.” [ID\_063, woman].*

**Text box 5**

*“It should be stressed that we are already aware of gender medicine issues from our first year of medical school. It is important to be conscious of it, but it doesn't seem to me as a major problem in my medical practice.” [ID\_136, man].*

**Text box 6**

*“Concerning gender, it's true that the patient's psychosocial anamnesis was focused rather on "feminine" elements and did not leave much room for her profession (which only came out at the very end of the consultation, just before she left). Therefore, it would be useful for me to try to "harmonise" my questions in the psychosocial anamnesis in order to obtain the same information from a man or a woman. I see that in a "male" anamnesis I rather focus on work and in a "female" anamnesis on the family and children.” [ID\_086, man].*

**Text box 7**

*“Clinical examination: the clinical examination should not be different, but in this particular situation, the patient's leggings were not removed (although it would have been better to see the patient in her underwear for an osteo-articular exam – i.e. for the hip symmetry). Of note, however, the patient was veiled and perhaps the doctor felt embarrassed to undress her.” [ID\_016, woman].*

**Text box 8**

*“Her GP only gives her non-steroidal anti-inflammatory drugs, despite her persisting pain estimated at 10/10. I thought this might be gender bias because the patient explained that her GP still thinks her problems are "psychological". In this regard, the patient was diagnosed with an Arnold Chiari malformation at the age of 50, after a significant delay in the diagnosis (her first symptoms appeared around adolescence). Prior to diagnosis, the patient reported that her GP believed that all her symptoms were psychological (occipital headache, neck pain, root pain in the upper limb, transient paresis in the lower limbs).” [ID\_071, woman].*

steps allowed identifying situations in which gender bias can influence patient management. It brought out potential bias in knowledge and/or attitude and practice.

### 3.3. Factors facilitating gender reflexivity

We identified two factors facilitating gender reflexivity: expert-guided discussion and peer-to-peer exchanges.

### 3.3.1. Expert guided

Many students reported that they became aware of gender bias during a group discussion, where gender-biased situations were collectively identified and discussed. For many, awareness took place after the gender expert's guidance. Some students reported they initially thought they had no gender bias but changed their minds after presenting and discussing their clinical case, as illustrated by this student:

[Text box 9].

During the group discussion, the students presented their case and the chief resident supervised the discussion on clinical aspects only. In a second step, the gender expert guided the discussion and focused on the influence of gender, inviting all participants to reflect. The gender expert brought inputs on existing evidence of gender bias in specific medical disciplines, on prevalence of disease distribution, or sometimes on discussions about other similar clinical situations discussed in a previous group. Their role was also to question the students on information or aspects not described in the case presentation; for example, on the elements collected for the anamnesis, the exam performed for the status or the attitudes towards a patient. During the debriefing session, chief residents expressed that on a number of occasions where the gender expert could not take part in the discussion, it was difficult for them to lead the discussion addressing gender aspects alone. They felt that they lacked experience in gender-focused group discussions and said that they were not familiar with current evidence on gender medicine. We; however, observed that with time the majority of chief residents acquired skills to identify and discuss gender bias in group discussions of clinical cases.

### 3.3.2. Peer-to-peer exchange

Several students indicated in their reflection questionnaires that they became aware of their gender bias after listening to presentations and discussions of clinical cases from peers, indicating it was rather the peer-to-peer exchange that enabled engaging into reflection, such as with these two students:

[Text box 10].

During group discussions, peers were continuously invited to add to or ask questions on the case presented. We sometimes observed that while discussing a specific case, a student might compare it to a similar case with a comparable story that he or she encountered but that was managed differently, thus fueling reflection on elements that might explain the contrasting management.

## 4. Discussion and conclusion

### 4.1. Discussion

The aim of this study was to investigate if an integrated reflective approach enables raising awareness of gender bias in medical practice during medical school teaching. More precisely, we wanted to explore whether and how reflexivity on gender bias in clinical management emerges through a stepwise approach of group discussions and individual reflection, based on real clinical cases. And we wanted to know what factors facilitated reflective practice on gender bias. Our results show that the clinically integrated, stepwise approach provides an opportunity for a reflection on gender bias in clinical practice. This study further revealed the different factors of our approach that enhanced awareness of and reflection on gender bias, such as the peer-to-peer

exchange and the group discussions.

#### 4.1.1. Reflection alongside the clinical reasoning process on real cases

The integration of reflective practice on gender into student internships aligns with Schön's approach of "reflection-on-action", a reconstructive mental analysis that takes place following a decision or an event.[32] Students described their clinical case to the group, shortly after observing the case (within a few days of the action). After the narration, discussing the case again with support from a gender expert allowed liaising the case with the existing evidence on gender and medicine. The discussion further provided room to revise the initial understanding and interpretation of the case, and opportunities to articulate new descriptions and understanding. The individual assignment of filling in the reflection questionnaires provided a third step for reflection on the action, enabling individual introspection of feelings and positionality, and contemplation on how to systematically integrate gender reflexivity into future clinical practice. Thus, reflection-on-action on a real clinical case provided students with a method for continuing later in their clinical practice, and this was highlighted positively by students. Discussing real clinical cases rather than clinical vignettes increased the students' engagement with reflection and the awareness of their own bias. This was also found in the systematic review of Uygur and colleagues: "personal experience is an effective trigger to engage students in the process of reflection." [25].

Our results revealed that stimulating reflection alongside the structured and standardized steps of clinical reasoning was useful and allowed critically judging the entire process of patient management, beyond just end treatment or diagnosis. Through their reflection questionnaires, students genuinely expressed that it is not just about treating women and men equally, as a performative attitude; but more about identifying and being aware of potential unconscious stereotypes and biases that affect clinical reasoning process and, in fine, patient care. Empowering students to recognize gender bias (knowledge-based or attitude-driven (stereotypes)) is a first step towards forming the reflective practitioner to promote optimal patient care.[21, 24, 33].

#### 4.1.2. Guided group discussions and individual reflection

We found that group discussions via peer-to-peer exchange and expert guidance, played an important role in triggering engagement and reflection. In his guide on "The use of reflection in medical education", Sandars stipulates that "the potential of reflection for individuals may not be fully realized without the help and support of another person. This 'other' person may be a peer group member or someone with a specific role, such as a supervisor or mentor".[20] The group discussions essentially offered a dedicated, safe and benevolent context for students to appreciate how to discuss their experience and practice their reflective skills with other actors, a chief resident, a gender expert, and their peers. While the individual questionnaires contained student reflections with meaning in (safe) isolation, we found that group discussions stimulated challenging the underlying assumptions and interpretations, a collective complementarity and thereby contributed new perspectives, as also found by Sandars, Uygur et al., and Rodgers. [20, 25, 34] Bringing gender perspective to clinical case management with a gender expert in the group discussions further enabled a liaison with the current evidence on knowledge-based or stereotype-based bias. For example, when one group identified that the psychosocial context of a male patient had been forgotten in the anamnesis, the expert was able to link

#### Text box 9

"After discussing the topic with the mentor [gender expert], I realized that I do have gender bias even though I thought I didn't." [ID\_011, man].

**Text box 10**

*“The session on gender was very helpful and made me realize that my attitude might not necessarily be the same towards a man or a woman. It could also be different if the gender of the caregiver is the same as the patient and vice versa. I noticed this in clinical situations involving my colleagues.” [ID\_109, man].*

*“Instead, I learned from my colleagues’ presentations. It’s easy to be influenced by our ideas on gender. The important thing is to be aware of it.” [ID\_019, woman].*

this with a local study showing that men tended to be underdiagnosed for anxiety and depression.[35] Guided group discussions may be perceived as a safe and benevolent setting in which students are comfortable to explore and embrace their own gender bias.

**4.1.3. Gender awareness panel**

Overall, more than it being mandatory for validating the clinical internship, students participated widely and actively in the group discussions and the individual reflection on gender bias in clinical practice, providing hints on the acceptability and interest of the exercise. Students differed in their level of interest and reflection depth, and therefore in their ability to benefit from this combined tool. We observed a range of pre-existing gender awareness among the students, from gender blind individuals to gender aware and gender transformative ones (i.e. students actively involved in feminist actions to change detrimental norms and discriminations). Further, the current Swiss context benefits from a favorable general momentum on the topic of gender following a large feminist movement in 2019, which brought to light gender inequality in all domains including health. [36] The strength of our approach, integrated in clinical practice and encompassing peer-to-peer exchange allowed almost all of the fourth-year medical students to be reached despite their diverse initial awareness levels. We found that almost all of them benefitted, but to different degrees. Gender blind students were sensitized during group sessions by more aware peers. Those who were already highly sensitized to the issue of gender bias, benefitted by observing implicit bias in action and by deepening their reflexivity. Further, we found that for some students who thought themselves gender aware, the exercise revealed unexpected bias hidden in the clinical reasoning steps, for example. For some students, group discussions offered a space to express and discuss bias that they were already aware of and come to collective ways to minimize such bias.

**4.1.4. Strengths and limitations**

To our knowledge, this is the first study to use reflexivity with medical students to raise awareness on gender bias during medical Master’s teaching. One of the few studies that also aimed to raise awareness on gender bias in clinical practice was among medical doctors in the Netherlands.[28] Their study consisted of 15 h of postgraduate GP training using lectures, filmed consultations, focus groups, simulated patients and clinical case discussions. Their approach was seen to increase junior GPs’ awareness of why attention to gender-specific information is relevant, building on very standardized clinical cases. Our approach diverges from theirs, as it focuses on medical students at the Master’s degree level and is integrated as part of the clinical work. It also requires less resources. Our non-standardized approach, as discussed above, used real-life experiences and hence identification of bias directly in their own clinical practice. In the end, the two approaches are complementary as one concerns students completing their medical diploma and the other, the graduated doctor level.

The strengths of our study are that firstly, it is based on an existing theoretical framework.[17] Secondly, it is an original approach to teaching clinical and human skills of gender awareness. Finally, few resources are required to implement this teaching program with a

potentially significant impact. This study has some limitations. First, the potential effect of a social desirability bias. Indeed, students may have felt the need to present themselves in a favorable light during discussions and in their individual work, which was validated by the expert. To minimize this bias, we tried to ensure a supportive safe and non-judgmental environment for the group discussions and to focus the discussion on the influence of gender bias on health. A second limitation is the link between gender and intersectionality, which could be further addressed. Thirdly, the teaching is partly dependent on the quality of the experts, and so reproducibility depends on expertise availability. The one-time pilot teaching module enabled an introduction to reflective practice, yet, as described by Nguyen et al., reflection is achieved better through repeated and incremental reflection from observation of bias in practice to deep reflection and positionality.[17] Finally, we were not able to assess if and how reflection on gender bias was further used in practice by students. The effect of incremental reflection, as well as the long-term impact on clinical practice should be explored in further research. To conclude, we would recommend applying a repeated and incremental approach to gender reflection in clinical practice, enabling profound reflection and integrating other potential bias-related aspects such as race or class.

**4.2. Conclusion**

Our study adds to the current literature on innovative, combined and integrated approaches to address gender bias in medical practice. The reflective practice exercise met the intended outcome of raising the level of student awareness of their own gender bias and of reflecting on how it can affect patient management and outcome. Further, it provided them with a systematic method they can apply in their future clinical work. Our reflective tool is strongly connected to the clinic, thereby complementing theoretical lectures on gender medicine. With the raised gender awareness, we hope to improve patient management, care processes and experiences, and influence future practice of medical students to provide more equitable care.

**4.3. Practice implications**

Our findings highlight that reflexivity is a relevant approach to help students identify gender bias in clinical practice. Group discussions with expert guidance and peer-to-peer exchange allowed the students to become aware of their own gender bias and also that of other students and experienced doctors they encountered. All gender medicine teaching should include combined approaches such as this linking theory and practice through reflexivity.

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### CRedit authorship contribution statement

Elisa Geiser contributed to study conception and design, acquisition of data, analysis and interpretation of data, and drafting the article with approval for publication. Léa Violette Schilter contributed to analysis and interpretation of data and revised the article critically and approved the version for publication. Jean-Michel Carrier contributed to study conception and design and revised the article critically and approved the version for publication. Carole Clair contributed to study conception and design, analysis and interpretation of data and revised the article critically and approved the version for publication. Joëlle Schwarz contributed to study conception and design, acquisition of data, analysis and interpretation of data, and revised the article and approved it for publication.

### Ethical approval

The study was submitted to the Cantonal Ethics Committee for Research on Human Beings (CER-VD) for ethical approval (Req-2020–00996). Ethical approval was not required. I confirm all patient/personal identifiers have been removed or disguised so the patient/person(s) described are not identifiable and cannot be identified through the details of the story.

### Declaration of Competing Interest

The authors declare no conflicts of interest.

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### CRedit authorship contribution statement

EG contributed to study conception and design, acquisition of data, analysis and interpretation of data, and drafting the article with approval for publication. LS contributed to analysis and interpretation of data and revised the article critically and approved the version for publication. J-MC contributed to study conception and design and revised the article critically and approved the version for publication. CC contributed to study conception and design, analysis and interpretation of data and revised the article critically and approved the version for publication. JS contributed to study conception and design, acquisition of data, analysis and interpretation of data, and revised the article and approved it for publication.

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