

Perceived Relevance of Gender-Specific Differences in Gastrointestinal Medicine and Surgery: Results of a Survey

Sabine Oertelt-Prigione^a Carsten Klinger^b Beate Rau^c; on behalf of the Working Group 'Gender Medicine' within the German Society for General and Abdominal Surgery

^a Institut für Geschlechterforschung in der Medizin (GiM), Charité – Universitätsmedizin, Campus Mitte,

^b StuDoQ – Studien-, Dokumentations- und Qualitätszentrum, Deutsche Gesellschaft für Allgemein- und Viszeralchirurgie,

^c Klinik für Allgemein-, Viszeral-, Gefäß- und Thoraxchirurgie, Charité – Universitätsmedizin Berlin, Campus Mitte, Berlin, Germany

Keywords

Gender differences · Sex differences · Gender medicine · Survey · Management · Diagnosis · Therapy

Summary

Background: The recognition of the relevance of sex and gender differences in medicine has significantly increased in the last 20 years. Nonetheless, the implementation of these aspects into clinical practice still remains to be attained. In particular, while sex differences – which refer to biological attributes – are widely accepted, gender concepts – which include sociocultural and psychological properties – are frequently treated with diffidence. **Methods:** In December 2012 and January 2013, all members of the German Society for General and Abdominal Surgery (DGAV) were invited to participate in an online-based survey to determine the relevance and incorporation of sex and gender aspects in gastrointestinal medicine and surgery. **Results:** 493 (13.4%) of the 3,689 members of the DGAV participated in the survey. More than 50% of the participants reported including sex and gender aspects into consultation, diagnosis, and management at least occasionally. However, 44% reported no knowledge of the formal definition of 'gender medicine', suggesting potential differences in the perception of the notion of gender. **Conclusion:** The participants of the survey demonstrated vast knowledge about sex differences, while gender attributes were generally neglected. Since gender features are critically relevant for prevention as well as during medical consultation, we suggest this area as a potential target for further training initiatives.

Schlüsselwörter

Geschlechterunterschiede · Gender-Medizin · Survey · Behandlung · Diagnose · Therapie

Zusammenfassung

Hintergrund: Obwohl die Anerkennung der Relevanz von Geschlechterunterschieden in der Medizin in den letzten 20 Jahren signifikant zugenommen hat, gestaltet sich die Einbettung in die Praxis dennoch schwierig. Während biologische Geschlechterunterschiede weitgehend angenommen werden, stoßen Erkenntnisse bezüglich der soziokulturellen Rolle von Geschlecht häufig noch auf Widerstand. **Methoden:** Im Dezember 2012 und Januar 2013 wurden die Mitglieder der Deutschen Gesellschaft für Allgemein- und Viszeralchirurgie (DGAV) aufgefordert, einen Internet-basierten Fragebogen auszufüllen, um die Relevanz und Einbettung von Geschlechteraspekten in der Viszeralmedizin zu untersuchen. **Ergebnisse:** 493 (13.4%) der insgesamt 3689 Mitglieder der DGAV beteiligten sich an der Befragung. Über 50% der Befragten berichteten, Geschlechteraspekte bei der Aufklärung, Diagnosefindung und Behandlung zumindest gelegentlich zu berücksichtigen, während 44% den spezifischen Begriff «Gender-Medizin» nicht kannten. Dies unterstreicht die bereits in der Literatur beschriebenen Unterschiede in dem Verständnis von Gender-Medizin. **Schlussfolgerung:** Insgesamt haben die Befragten einen hohen Wissensstand zu biologischen Geschlechterunterschieden gezeigt, während soziokulturelle Aspekte weitgehend vernachlässigt wurden. Da diese Aspekte besonders in der Prävention und bei der Aufklärung von Patientinnen und Patienten relevant sein können, ergibt sich hier ein Zielbereich für zukünftige Fortbildungsangebote.

Introduction

Gender medicine represents a fairly novel discipline that emerged in the last two decades and has been initially driven by a focus on cardiologic topics [1, 2]. Subsequently, information about differences in presentation, symptoms, management, and outcomes between women and men has been identified in several other disciplines, highlighting the universal relevance of these aspects in medicine [3]. Nonetheless, although the importance of gender aspects is being recognized, the incorporation of gender-related information into clinical practice is lagging and often difficult to achieve [4–6]. Furthermore, different disciplines often harbour different understandings of the concept of gender, making a transdisciplinary comparison difficult. In fact, ‘sex’ and ‘gender’ are often separated in medicine in order to identify different areas of research. Sex differences refer to biological attributes, while gender differences take the wider sociocultural and psychological aspects into consideration [7, 8]. This important aspect does not only apply to interdisciplinary research but is also relevant to various specialties in medicine which consider diverse aspects of the concept of sex or gender in their clinical practice. Finally, not all colleagues are of the opinion that the subject is relevant enough for incorporation into clinical decision-making or feel inadequately prepared to do so.

With the following survey, we aimed at identifying knowledge about gender aspects in the field of abdominal surgery as well as its perceived relevance and specific topics of interest within different areas of the management process. Furthermore, we focused on obstacles responsible for the lack of incorporation of gender aspects into surgical practice.

Subjects and Methods

Participants

The presented questionnaire was designed to investigate knowledge about gender issues in general, perceived relevance of the topic, and inclusion within everyday clinical practice among members of the German Society for General and Abdominal Surgery. The questionnaire was developed as a web-based application whose link was sent once by e-mail to all members accompanied by a formal invitation from the board of directors of the society. The survey was anonymous and included both closed and open questions, allowing the participants to integrate prior knowledge of the subject. The questionnaire was available online during the months of December 2012 and January 2013. At the end of 2012 the society had 3,689 members; the majority of these are practicing physicians, although retired colleagues and physicians not working in the clinical environment are also represented.

Statistical Analysis

Our primary focus was the identification of prior knowledge and perceived importance of the subject of gender in medicine. Secondly, we aimed at identifying relevant gender-related topics at different levels of the clinical and management continuum. Finally, general reasons for lack of inclusion of gender aspects in clinical care and in seeking of informed consent were examined. Input from open questions was grouped into the following categories for analysis: anatomy, gynaecology, urology, disease

epidemiology, risk factors and risk behaviour, medications, choice of technique, cosmetics, compliance, complications, survival, and psychological aspects. Since questions were directed at four areas, i.e. history-taking, diagnosis, management, and outcomes, not all of the answer groups were relevant to all investigated areas. Descriptive statistics were used to depict the participant population as well as frequencies of incorporation of gender aspects into clinical practice. Univariable association analyses were performed using Pearson’s chi-square test. All analyses were two-tailed, and significance levels were set at $p < 0.05$. Analyses were conducted using Intercooled STATA, version 11 (StataCorp. LP, College Station, TX, USA).

Results

Familiarity of Experienced Participants with ‘Gender Medicine’

Of the 3,689 members of the German Society of General and Abdominal Surgery registered at the end of 2012, 493 (13.4%) completed the survey. Of the participants, 71.3% were males and more than 60% were attending physicians or medical directors. Accordingly, 75.3% reported a clinical experience of more than 10 years (table 1). In this highly skilled population, however, only 55.9% reported knowledge about the term ‘gender medicine’. While a correlation with the limited representation of physicians practicing in academic settings (24%) might be expected, this association proved not statistically significant, as did the potential association with gender of the survey participant. Participants with more extensive clinical experience demonstrated a slightly increased knowledge compared to colleagues with less experience ($p = 0.04$).

Imbalance between Patients’ Active Asking and Reported Rates of Informing about Gender Issues

When asked about the frequency of active enquiry by their patients, physicians reported that 26.7% of their patient population never ask about any gender-specific issues. 39.5% are seldom asked about the topic, and only 4.6% report frequent enquiries about gender aspects (fig. 1). In contrast, most physicians report on occasionally including gender-specific issues into diagnostic findings, management, and information about outcomes (table 2). Interestingly, male physicians reported the inclusion of gender aspects into diagnostic choices, management, and information about outcomes significantly more often than their female colleagues. In fact, 14.3–21.1% of the male physicians reported always including gender aspects into these domains, while only 5–6.8% of the female doctors stated doing so ($p = 0.115–0.003$; table 2). When asked about reasons for a lack of incorporation of these aspects into practice, the most frequently cited issue was the perceived lack of relevance of the subject to obtaining consent for the procedure (43%), followed by a subjective feeling of lack of training (20.6%). 5.3% of the participants feared that incorporating gender aspects into the communication with the patient would unsettle them and, thus, preferred to avoid the topic (fig. 2).

Table 1. Characteristics of survey participants (n = 493)

	%
Male sex	71.3
Professional classification	
Residents/fellows	15.8
Specialist physicians	14.4
Attending physicians	37.5
Medical directors	27.8
Other/not specified	4.3
Surgeons	95.0
Setting	
Non-academic hospital	69.0
Academic hospital	24.0
Own office/clinic	4.0
Other	3.0
Work experience	
Less than 3 years	3.9
3–10 years	20.8
More than 10 years	75.3
Familiar with the term 'gender medicine'	55.9

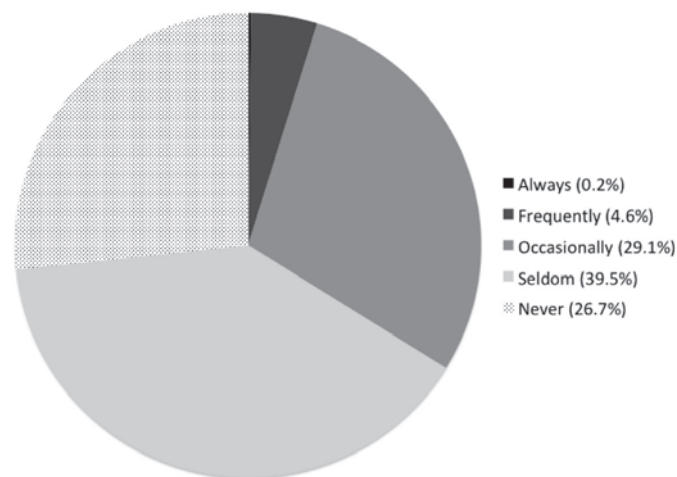


Fig. 1. Patient enquiry about gender-specific issues during consultation. The participants were asked how often patients spontaneously ask about gender aspects during initial consultation and following appointments.

Significance of Relevance of Gender Issues

When asked about the relevance of gender issues for history-taking, diagnostic decision-making, management choices, and information about outcomes, the majority of the participating physicians rated gender issues a higher priority for the lower gastrointestinal (GI) system. In fact, the relevance to the lower GI system was consistently ranked above 50% while it varied between 29.4% for history-taking and 48% for the discussion of outcomes for the upper GI tract (fig. 3).

Relevance of Different Topics for Gender-Specific Consultation

When asked about the meaning of gender issues in different domains, several concepts of gender-relevant topics were men-

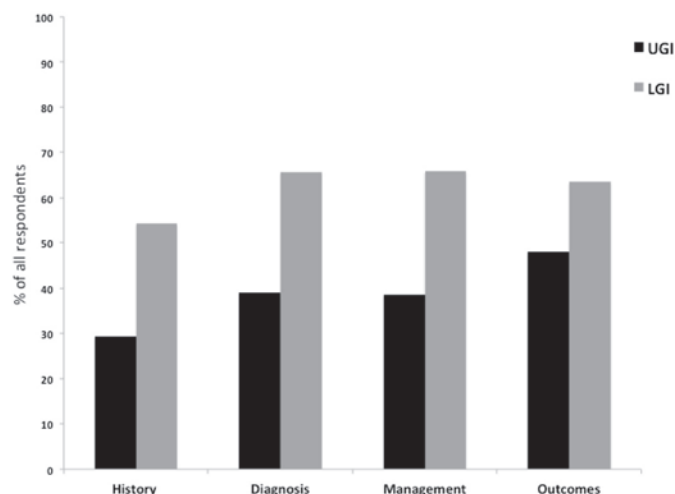


Fig. 2. Relevance of sex and gender aspects at different levels of the gastrointestinal system. Physicians were asked during which steps of the clinical process (from initial history-taking until post-procedure outcomes) sex and gender aspects are relevant. Response options were dichotomous; enquiries were directed separately at all areas. UGI = Upper gastrointestinal tract; LGI = lower gastrointestinal tract.

Table 2. Self-reported frequency of enquiry about gender-related issues in distinct domains

	Patients, %			p
	all (n = 417)	males	females	
Diagnosis				0.003
Always	16.6	21.1	5.8	
Frequently	20.1	21.4	16.5	
Occasionally	30.7	29.3	34.7	
Seldom	15.6	13.3	21.5	
Never	17.0	14.9	21.5	
Management				0.049
Always	16.1	19.9	6.8	
Frequently	19.2	19.6	17.8	
Occasionally	27.3	26.1	30.5	
Seldom	16.6	15.8	18.6	
Never	20.9	18.6	26.3	
Outcomes				0.115
Always	11.5	14.3	5.0	
Frequently	14.9	16.0	11.7	
Occasionally	27.9	26.8	30.8	
Seldom	18.1	16.7	21.7	
Never	27.6	26.1	30.8	

tioned. In the area of history-taking, the most common understanding of gender differences was related to epidemiological differences (42.9% in the upper GI tract) in the distribution of pathology and gynaecological aspects (56% in the lower GI tract), which mostly concerned anatomical differences, parity, previous surgical intervention, and so forth. Physiological differences were considered relevant by 5.4% of the participants in the upper GI and by 13.5% in the lower GI tract. In the area of diagnostic choices, epidemiological and gynaecological con-

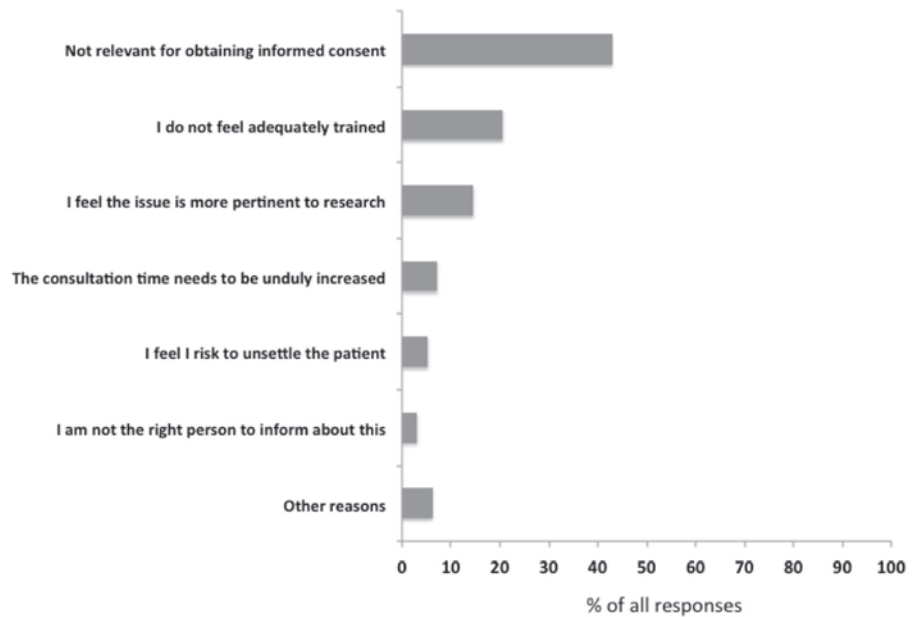


Fig. 3. Reasons for lack of incorporation of sex and gender aspects in the consultation. Participants were given a series of options to choose from; multiple answers were admitted. An additional section for open entries, which were grouped into categories whenever possible, was included. Results are expressed as percentages of all obtained answers.

siderations are still the most frequently mentioned aspects, followed by choice of technique, which was mentioned by 17.5% of the participants for the upper GI tract and 16.2% for the lower GI tract. When asked about the inclusion of gender aspects into management options, 50 and 51.3% mentioned the choice of intervention as the main aspect for both upper and lower GI tract, respectively. Cosmetics and compliance followed as aspects to be considered for the upper GI tract (both 18.2%), and compliance was stated as the main secondary issue for the lower GI tract (36.3%). When informing about procedural and long-term outcomes, survival differences (26.7%), compliance (23.3%), and psychological issues (20%) were listed as the main topics for the upper GI tract, while potential complications (54.9%) and survival (21.6%) were rated highest for the lower GI tract (table 3).

No differences could be shown in the rating of these aspects when the gender of the participant was considered. Nevertheless, it might be mentioned that mostly women raised the issues of psychological implications and differences in compliance and that male colleagues exclusively expressed concern about cosmetic aspects after surgery. However, for both of these aspects the numbers are too small to attempt any statistical evaluation.

Discussion

The presented survey was the first of its kind conducted in a professional society in Germany. Overall, the participants displayed a limited knowledge about the specific term 'gender medicine'. Nonetheless, subjectively perceived consideration of sex and gender aspects in clinical management appeared elevated and displayed a difference between male and female respondents. Concepts perceived as relevant in the context of gender

were primarily gynaecological, anatomical, and physiological differences, as well as differences in the choice of diagnostic and management technique. Thus, the relevance of anatomical sex differences appears to be well acknowledged in GI surgery, yet the wider concept of gender still needs to be further explored.

Of all the participants, only 55% declared prior knowledge of the term 'gender medicine'. Interestingly, more than 50% of all respondents reported including sex and gender aspects at least occasionally into their clinical practice. This phenomenon well exemplifies the difference between the acknowledgement of the importance of biological differences and a lack of knowledge about the more complex concept of gender. The participants demonstrated an unquestionable attention to and consideration of biological, anatomical, and physiological aspects within their practice. However, issues such as psychological effects of the intervention, gender aspects in medical communication and information transmission, perceived physical modifications, and relevance of gender roles in the recovery process have been seldom identified. Thus, a limited knowledge about the concept of gender medicine appears to be a fair and accurate subjective judgement. Interestingly, the reported perception of the increased relevance of gender aspects in the lower compared to the upper GI tract appears to be directly linked to the relevance attributed to these anatomical aspects. In fact, if the consideration of gender is understood as the incorporation of anatomical awareness, then the pelvic area with the inclusion of the gonads appears to be much more relevant than the upper GI tract. This consideration will affect both the choice of diagnostic techniques, e.g. radiation-sparing imaging techniques, as well as the type of procedure selected for an intervention, e.g. laparoscopy versus laparotomy, when the option is given, as well as potentially the NOTES (natural orifice transluminal endoscopic surgery) technique, as mentioned by a few of the participants. If general issues of gender were con-

Table 3. Gender aspects considered at different levels of the care process

	%
<i>Upper gastrointestinal tract</i>	
History (n = 141)	
Epidemiology	42.9
Risk factors	25.0
Gynaecology	19.6
Medication	7.0
Physiology	5.4
Diagnosis (n = 40)	
Epidemiology	52.5
Technique	17.5
Risk factors	12.5
Other	10.0
Gynaecology	5.0
Anatomy	2.5
Management (n = 22)	
Choice of technique	50.0
Cosmetics	18.2
Compliance	18.2
Complications	9.1
Other	4.5
Outcomes (n = 30)	
Survival	26.7
Compliance	23.3
Psychology	20.0
Complications	13.3
Not enough information	13.3
Other	3.3
<i>Lower gastrointestinal tract</i>	
History (n = 91)	
Gynaecology	56.0
Epidemiology	17.0
Physiology	13.5
Risk factors	5.7
Urology	4.3
Medication	2.1
Other	1.4
Diagnosis (n = 130)	
Gynaecology	40.0
Technique	16.2
Epidemiology	14.6
Anatomy	12.3
Urology	10.8
Risk factors	3.1
Other	3.1
Management (n = 80)	
Choice of technique	51.3
Complications	36.3
Other	5.0
Cosmetics	2.5
Compliance	2.5
Psychology	1.25
Survival	1.25
Outcomes (n = 51)	
Complications	54.9
Survival	21.6
Compliance	7.8
Psychology	7.8
Not enough information	3.9
Other	3.9

sidered instead, the difference between upper and lower GI tract should not be that apparent.

Female physicians reported asking about or considering gender aspects to a much lower degree than their male colleagues. This was an interesting result, although it might potentially correlate with a distinct understanding of what gender-sensitive consultation represents. There was no difference between the sexes regarding the perceived relevance of anatomical and epidemiological issues. Psychological issues related to the procedure or the management of potential compliance problems were mentioned much more frequently by the female respondents than by the males, which exclusively pointed out the consideration of aesthetics in the choice of procedure. Thus, although subtle as well as limited in number in this sample, a potentially different perception of gender-related issues might exist. There are several reports [9, 10] detailing various sources of bias for survey response, with some being related to gender, yet these appear to be an unlikely cause of gender differences in response in our case. Whether female and male surgeons consider the concept of gender differently or whether there is a genuine difference in the incorporation of these aspects into practice will have to be investigated more in detail in the future.

Reasons for a lack of incorporation of gender aspects in the consultation with the patient have been primarily identified in the absence of clinical relevance of these issues to the consultation and a perceived lack of preparedness. However, gender aspects, and not necessarily information about sex differences, are crucial aspects in the patient-physician communication [11–14], and awareness of the impact of these factors on communication has been proposed as a possibility to greatly increase trust and adherence. This perceived lack of relevance, especially in the field of consultation, identifies a target for further exploration and training.

In conclusion, the conducted survey highlighted the awareness of the incorporation of sex differences into surgical practice while identifying a lack of perception of gender aspects. Gender medicine could represent an opportunity for the enrichment of surgical practice, especially for physician-patient communication and the inclusion of psychosocial issues into consultation. Overall, it might offer opportunities for a more structured diversification and individualization of care and should therefore be further explored.

Acknowledgement

We would like to thank our colleagues of the Working Group ‘Gender Medicine’ within the German Society of General and Abdominal Surgery for their support.

Disclosure Statement

All authors have no conflict of interest to declare.

References

- 1 Arain FA, Kuniyoshi FH, Abdalrhim AD, Miller VM: Sex/gender medicine. The biological basis for personalized care in cardiovascular medicine. *Circ J* 2009;73:1774–1782.
- 2 Legato MJ: Beyond women's health the new discipline of gender-specific medicine. *Med Clin North Am* 2003;87:917–937, vii.
- 3 Oertelt-Prigione S, Parol R, Krohn S, Preissner R, Regitz-Zagrosek V: Analysis of sex and gender-specific research reveals a common increase in publications and marked differences between disciplines. *BMC Med* 2010;8:70.
- 4 Correa-De-Araujo R: Serious gaps: how the lack of sex/gender-based research impairs health. *J Womens Health (Larchmt)* 2006;15:1116–1122.
- 5 Risberg G, Johansson EE, Westman G, Hamberg K: Gender in medicine – an issue for women only? A survey of physician teachers' gender attitudes. *Int J Equity Health* 2003;2:10.
- 6 Risberg G, Johansson EE, Westman G, Hamberg K: Attitudes toward and experiences of gender issues among physician teachers: a survey study conducted at a university teaching hospital in Sweden. *BMC Med Educ* 2008;8:10.
- 7 Bird CE, Rieker PP: Gender matters: an integrated model for understanding men's and women's health. *Soc Sci Med* 1999;48:745–755.
- 8 West C, Zimmerman DH: Doing gender. *Gender Soc* 1987;1:125–151.
- 9 Kellerman SE, Herold J: Physician response to surveys. A review of the literature. *Am J Prev Med* 2001;20:61–67.
- 10 Yun GW, Trumbo CW: Comparative response to a survey executed by post, e-mail and web form. *J Computer-Mediated Comm* 2000;DOI: 10.1111/j.1083-6101.2000.tb00112.x.
- 11 Bertakis KD, Franks P, Azari R: Effects of physician gender on patient satisfaction. *J Am Med Womens Assoc* 2003;58:69–75.
- 12 Bertakis KD, Franks P, Epstein RM: Patient-centered communication in primary care: physician and patient gender and gender concordance. *J Womens Health (Larchmt)* 2009;18:539–545.
- 13 Franks P, Bertakis KD: Physician gender, patient gender, and primary care. *J Womens Health (Larchmt)* 2003;12:73–80.
- 14 Roter DL, Hall JA, Aoki Y: Physician gender effects in medical communication: a meta-analytic review. *JAMA* 2002;288:756–764.