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Midwifery students witnessing violence during labour and birth and their attitudes towards supporting normal labour: A cross-sectional survey

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Introduction

A growing body of scientific evidence followed by clinical recommendations illustrates that a physiological birth embedded into a positive birth experience is crucial (WHO, 2016, 2018). At the same time, evidence of disrespect, mistreatment, and abuse of childbearing women is increasing (Freedman et al., 2014; Bohren et al., 2015; Miller and Lalonde, 2015; WHO, 2014; Baranowska et al., 2019; Skoko and Battisti, 2017; Mena-Tudela et al., 2020) .[1] These behaviours are subsumed under the terms “obstetric violence” and “disrespect and abuse in childbirth” (Pérez D'Gregorio, 2010; Freedman et al., 2014).

Tensions between the supportive and disrespectful care during labour and birth can be observed in midwifery education. Midwifery educational programmes focus on evidence-based theoretical and clinical education as well as the midwifery philosophy of care (ICM, 2019). Midwifery students are initially taught all the physiological processes. During the second academic year they are introduced to more complex situations during childbirth (ICM, 2019; Thompson et al., 2019; WHO, 2019). However, many students perceive a gap between their acquired knowledge and their observations on labour wards (Moyer et al., 2016; Thompson et al., 2019).

Violence during childbirth can take many forms, including inappropriate use of interventions and medicalisation, as well as poor communication patterns (Bohren et al., 2015). Each of these can influence the experiences of childbearing women during labour (Pérez D'Gregorio, 2010; Bohren et al., 2015; WHO, 2018). Based on Bohren's typology (Bohren et al., 2015), different forms of violence towards childbearing women are observed during labour and birth. The typology was developed to enable the quantitative analysis of mistreatment during childbirth worldwide and refers to seven main themes: physical, sexual, and verbal abuse; stigma and discrimination; failure to meet professional standards of care; poor rapport between childbearing women and providers; health-care system conditions and constraints. Various forms of violence during childbirth can be perpetrated by different people, and differences between professional groups have indeed been found in existing studies of violence (Bohren et al., 2015).

The medicalisation of childbirth in high income countries is at odds with the midwifery philosophy of care (ICM, 2005; WHO, 2018) and this theory-practice gap might affect how midwifery students view physiologic birth. In addition, loss of the childbearing women's' autonomy has been categorized as a form of mistreatment in childbirth (Bohren et al., 2015). When students witness health care providers who are not supporting childbearing women to lead decisions about their care and/or do not support the ability of healthy pregnant women to give birth to their babies without interventions, they might struggle to reconcile what they learned in school with their experiences on the labour ward (Thompson et al., 2019).

The purpose of the present study was to describe whether students had observed violence during childbirth perpetrated by

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[1] The paper uses the terms 'woman' or 'women' in reference to recipients of maternity care. We recognize that not all people who are pregnant or have given birth may identify as women.

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health care professionals and whether, and if yes how, these observations changed midwifery students' attitude towards supporting normal birth. Any self-reported effects of their experiences, including symptoms of stress and intentions to leave their programmes will be described.

Methods

About 3455 students were enrolled in various midwifery programmes throughout Germany at the start of the study (DHV press release, 2018). Of the 86 midwifery education institutions, 62 were vocational midwifery schools and 24 academic study courses resulting in a Bachelor of Midwifery degree (DHV, 2020a). Currently, there is a transitional period in Germany from undergraduate training to a Bachelor's degree. All undergraduate midwifery training courses must be completed by 2027 (DHV, 2022). These last three years and include a total of 1600 h of theoretical instruction and 3000 h of practical training (§1 paragraph 1 sentence 1 HebAPrV, 1987a). Of these, 1440 h must be completed in the labour ward (Annex 2 HebAPrV, 1987b). The Bachelor's degree programme comprises at least 2200 h each of theory and practice (DHV, 2022). The proportion of practical training in the labour ward is specified as at least 1280 h (Annex 2 to §8 paragraph 1, HebStPrV, 2020b). Both training forms are completed with a state examination (§2 HebAPrV, 1987a; §18, HebStPrV, 2020a).

In this paper the term students will be used to cover both the vocational and higher education-based educational pathways available to aspiring midwives in Germany. Based on the estimated population size of 3455 registered students and according to the model $n = P\ (100 - P)\ z^2/E^2$ (Taherdoost, 2017), a sample size of 346 students was estimated to be representative.

In this cross-sectional survey, a link to an online questionnaire was sent out via both social media (Facebook) and the midwifery student representative of all 16 federal states in Germany. Snowballing allowed individuals to forward the link to eligible participants. Two reminders followed in 10-day intervals; the survey was open from 31 October to 2 December 2020. The study was approved by the ethics committee at Hannover Medical School (24.9.20; No. 9347_BO_K_2020) and informed consent was given by all participants.

The questionnaire

The questionnaire used for this study started with an explanatory introduction about the topic, data protection information, and informed consent. Students were informed that completion of the survey implied consent to participate in the study and were asked to check "yes" if they agreed with the information presented or "no" if they did not consent to participate.

The questionnaire consisted of four parts. Section 1 established the inclusion criteria with four questions (informed consent to participate, age of at least 18 years, current participation in midwifery training and having experienced at least one practical assignment in the labour ward). If one of these successive questions was answered as negative, the participant was excluded and could not continue with the questionnaire. The first section also included two general questions about participants' opinions about normal birth and violence during childbirth in Germany. The introductory questions were included to minimise the risk of the questionnaire being perceived as biased (Bradburn et al., 2004).

In the second and third sections, two validated tools (Zinsser et al., 2016; Limmer et al., 2021) were adapted to the perspective of midwifery students to measure their observations of (dis-) respect, autonomy, discrimination, and violence during childbirth towards women in birth and their attitudes towards supporting normal birth. The adaptation included an expert review and pilot testing. The omission of questions from both original tools in section two and three was a result of the pilot testing and served to improve comprehensibility and feasibility from the perspective of students. Approval for the adaptation was given by the authors of the two original scales (Zinsser et al., 2016; Limmer et al., 2021). Table S1 (Supplementary Table 1) presents selected sample items of the scales.

The second section included a scale to measure German midwives' attitudes towards support for normal birth (Zinsser et al., 2016). The original tool comprised 38 questions and asked for levels of agreement via a six-point Likert scale. For the present study, the number of questions was reduced to 33, with a hypothetical range of scores of 33 to 198, with a higher score indicating a more positive attitude towards promoting normal birth.

Limmer et al. (2021) assessed violence during childbirth among pregnant women in Germany by translating and adapting three tools that were developed in Canada: The MADM- (Mothers Autonomy in Decision Making; Vedam et al., 2017a), the MOR- (Mothers on Respect; Vedam et al., 2017b), and the MIST- (Mistreatment; Vedam et al., 2019) scales. Limmer developed and validated a new discrimination scale (Limmer et al., 2021). All four measures were included in a third section as independent variables to measure the extent of violence during childbirth witnessed by midwifery students during clinical practice and to determine how experiences of witnessing violence during childbirth related to attitudes towards supporting normal birth. Participants were asked to report frequencies related to observed events in the labour ward in three categories: rarely/never, sometimes, often/mostly. Additionally, the response option "Unable to tell" was offered. To allow for a differentiation between the attending midwife and the physician (who are both present at most births in Germany), two respective versions of each question were asked, with explicit reference being made to the relevant professional group.

Originally, the four scales contained a total of 45 questions. For this study, the number of questions was reduced to 35. Considered together, the full scope of Bohren et al.'s (2015) typology was covered by the four scales by assessing the concepts of autonomy and respect (seven items each), discrimination (ten items), and mistreatment (eleven items). At the end of the third section, three questions were asked about the consequences of the experiences during clinical midwifery education, like the intention to leave the programme and symptoms of acute and post-traumatic stress disorder (PTSD). In acute stress situations, restlessness (arousal) and anxiety reactions such as heart palpitations (tachycardia) and (cold) sweating may occur (DIMDI, 2015). The definition of PTSD contains symptoms of overexcitation (including sleep/concentration disorders), avoidance behaviour (to the stress trigger), emotional numbness (general withdrawal, loss of interest and inner apathy), intrusive stressful thoughts and memories of the trauma (intrusions) or memory lapses (images, nightmares, flashbacks; Flatten et al., 2011). The same response options were provided for these symptoms: rarely/never, sometimes, often/mostly.

The fourth section included nine sociodemographic and educational items: Age, highest educational degree, own birth experience, location of midwifery training, type of training (vocational training or bachelor programme), length of time in programme, quantity (how often) and duration (in weeks) of labour ward placements, and experiences with community births during training. These items were included to describe the sample and to examine associations between attitudes towards normal birth and variables such as age and students' own birthing experience as well as two questions on feedback on the questionnaire itself.

Table 1
Socio-demographic and educational data of participating midwifery students (n = 404).

	Category	*N*	*%*
Age in years (n = 396, missing data n = 8)	18–22	217	54.8
	23–27	109	27.5
	28–32	43	10.9
	33–37	17	4.3
	38–42	9	2.3
	>42	1	0.3
Highest educational degree (n = 396, missing data n = 8)	Secondary school diploma	1	0.3
	High school diploma	298	75.2
	Higher education degree	97	24.5
Own birth experience (n = 396, missing data n = 8)	No	341	86.1
	Yes	55	13.9
Type of training (n = 395, missing data n = 9)	Vocational	273	69.1
	Bachelor programme	122	30.9
Vocational training year/ Length of time in programme (n = 395, missing data n = 9)	1st	51	12.9
	2nd	125	31.6
	3rd	97	24.6
Bachelor programmeSemester/Length of time in programme(n = 395, missing data n = 9)	1st and 2nd	44	11.1
	3rd and 4th	37	9.4
	5th and 6th	36	9.1
	7th and 8th	5	1.3
Quantity of labour ward placements completed (n = 397, missing data n = 7)	1–2	114	28.7
	3–4	131	33.0
	5–6	91	22.9
	>6	61	15.4
Duration of labour ward placements (in weeks) (n = 392, missing data n = 12)	< 6	35	8.9
	7–10	57	14.5
	11–14	96	24.5
	15–18	58	14.8
	19–22	47	12
	23–26	29	7.4
	27–30	25	6.4
	31–33	15	3.8
	>33	30	7.7
Community birth care experiences (n = 397, missing data n = 7)	No	294	74.1
	Yes	103	25.9
Location of midwifery training (all 16 Federal states) (n = 394, missing data n = 10)	Baden Wuerttemberg	106	26.9
	Lower Saxony	59	15.0
	North Rhine-Westphalia	57	14.5
	Hesse	34	8.6
	Bavaria	28	7.1
	Schleswig Holstein	28	7.1
	Rhineland-Palatinate	22	5.6
	Berlin	16	4.1
	Saxony-Anhalt	16	4.1
	Bremen	8	2
	Hamburg	8	2
	Thuringia	5	1.3
	Saarland	4	1
	Brandenburg	3	0.8
	Saxony	0	0
	Mecklenburg Western Pomerania	0	0

Statistical analysis

For all socio-demographic and educational variables, frequencies and percentages were calculated (Table 1). Scale sum scores were calculated for all scales. Since the scale sum values are metric variables, both their central tendency (M = mean) and dispersion (SD = standard deviation, range) were calculated (Table 2). Shapiro-Wilk statistics (S.W:, Shapiro and Wilk, 1965), skewness, and kurtosis were performed to test for distribution normality (Table 2). Since the requirements for bivariate statistics using Pearson's correlations between the metric independent variables (autonomy, respect, discrimination, mistreatment scale) and the outcome variable (attitude scale) were not met (no normal distribution was given), Spearman-Rho (Spearman, 1904) statistics were used and Spearman correlation coefficient ρ (rho) was calculated (Table S2). For the autonomy-, respect-, discrimination-, mistreatment- and symptoms-scale the response options "sometimes" and "often or most of the time" were coded as presence and "rarely or never" as absence of autonomy, (dis-)respect, discrimination, mistreatment towards labouring women, and symptoms of acute stress or posttraumatic stress disorder (Figs. 2-4).

The test procedures for other independent variables related to the attitude score differed in relation to the data level. Again, non-parametric test procedures were used due to the absence of a normal distribution (Table 3): For categorical variables such as age, length of studies, and duration of practical internship (in weeks), Kruskal-Wallis H test (Kruskal and Wallis, 1952) was performed. The effect sizes of the Kruskal-Wallis H tests were calculated using the following equation: $E^2_H = H / (n^2 - 1) / (n + 1)$ (Tomczak and Tomczak, 2014). H = Kruskal-Wallis H-test statistic, n = total number of observations, E^2_H = coefficient with a value from 0 (no association) to 1 (perfect association; Tomczak and Tomczak, 2014).

Binary variables like "own birth experience" and "community birth care experiences" were calculated with Mann-Whitney U test (Neuhäuser, 2011). The effect size for the Mann-Whitney U test was calculated by means of the correlation coefficient r. For this

Table 2
Descriptive characteristics and reliability statistics of the scales (excluding missing values).

Scale (n)	Number of Items	Min/Max (possible)	Range (possible)	M	SD	Cron-bach's α	Normal-distri-bution
Attitude scale (n = 378)	33	108/198 (33–198)	90 (165)	163.30	14.949	.879	S. W.: 0.000 Skewness:-0.528 Kurtosis: 0.654
Autonomy scale midwives (n = 330)	7	7/21 (7–21)	14 (14)	15.33	2.982	.786	S.W.: 0.000 Skewness:-0.349 Kurtosis:-0.674
Autonomy scale physicians (n = 292)	7	7/21 (7–21)	14 (14)	12.28	2.843	.760	S.W.: 0.000 Skewness: 0.337 Kurtosis:-0.315
Respect scale midwives (n = 317)	7	9/21 (7–21)	12 (14)	16.05	2.789	.713	S.W.: 0.000 Skewness: -0.342 Kurtosis:-0.595
Respect scale physicians (n = 266)	7	7/21 (7–21)	14 (14)	13.28	2.969	.726	S.W.: 0.001 Skewness: 0.172 Kurtosis: -0.623
Discrimination scale midwives (n = 164)	10	10/29 (10–30)	19 (20)	15.76	4.151	.870	S.W.: 0.000 Skewness: 0.813 Kurtosis: 0.259
Discrimination scale physicians (n = 150)	10	10/29 (10–30)	19 (20)	16.03	4.090	.882	S.W.: 0.000 Skewness: 0.805 Kurtosis: 0.535
Mistreatment scale midwives (n = 325)	11	11/33 (11–33)	22 (22)	18.27	4.430	.825	S.W.: 0.000 Skewness: 0.687 Kurtosis: 0.169
Mistreatment scale physicians (n = 262)	11	11/33 (11–33)	22 (22)	19.79	4.425	.823	S.W.: 0.000 Skewness: 0.490 Kurtosis: -0.101
Distress symptoms (n = 390)	7	7/21 (7–21)	14 (14)	11.76	3.267	.796	S.W.: 0.000 Skewness: 0.649 Kurtosis: -0.086

S.W. (Shapiro-Wilk Statistic).
SD (Standard deviation).
M (Mean value).

purpose, the equation was used: $r = |z/\sqrt{n}|$ (Field, 2013). The effect sizes were classified as follows: weak effect size: $0.1 \leq r < 0.3$; medium effect size: $0.3 \leq r < 0.5$; strong effect size: $r > 0.5$ (Field, 2013). Cronbach's alpha estimates (Streiner, 2003) were used to determine whether included scales were internally consistent and met minimum thresholds for reliability.

SPSS version 27 (IBM Corp, 2020) was used for all analyses.

Findings

Of 577 students who completed the eligibility questions, 55 did not meet at least one of the inclusion criteria and 127 dropped out for unexplained reasons. The final sample size was 404; i.e. the number of students who provided responses for all scales included in the questionnaire (Fig. 1).

Almost all students (99.5%, n = 403) thought that normal birth should be promoted more, and 95.3% (n = 383 of 402) thought that violence during childbirth was a problem in Germany. Participants were based in 14 of the 16 German states. Just over a quarter of participants (25.9%, n = 103 of 397) had community birth care experiences. More sociodemographic and educational data are presented in Table 1.

Observations of discrimination and mistreatment in the labour ward

Overall, students observed autonomy-enhancing/respectful behaviours slightly more often among midwives than among physicians (autonomy-enhancing behaviour of midwives M = 15.33/respectful behaviour of midwives M = 16.05 vs autonomy-enhancing behaviour of physicians M = 12.28/respectful behaviour of physicians M = 13.28, Table 2). In contrast, discriminatory/violent behaviour towards women giving birth was experienced slightly more frequently when students observed physicians (discriminatory behaviour of physicians M = 16.03/violent behaviour of physicians M = 19.79 vs discriminatory behaviour of midwives M = 15.76/violent behaviour of midwives M = 18.27, Table 2). Discrimination against birthing women was observed in roughly equal measure in midwives and physicians across categories, as shown in Fig. 2.

Discrimination on account of being overweight was the most common type of discrimination: it was reported by 83.7% (n = 338) of students who observed midwives and 79.9% (n = 323) of students who observed physicians. This was followed by observations of discrimination based on different views about the right care/treatment: it was reported by 73% (n = 295) of students who observed midwives and 71.6% (n = 289) of students who observed physicians (Fig. 2). The frequencies on the mistreatment scale differed with regard to professional groups, as shown in Fig. 3.

Nearly two-thirds (65.3%, n = 264) of students who answered this question (n = 396) had witnessed midwives performing interventions without the consent of the woman giving birth, compared to three-quarters (74.7%, n = 302) of students who had observed physicians performing the same. More than half (51.8%, n = 209) had observed midwives perpetrating physical violence against labouring women, as defined by Bohren et al. (2015). Of 384 students, about three-quarters (74.3%, n = 300) had observed this behaviour in physicians. The wide range of responses given to all scales indicates that experiences varied considerably: while some students had witnessed many instances of violence, others encountered very few or none at all, as displayed in Table 2.

Reported consequences of witnessing violence in the labour ward

Multiple responses were possible to characterise the effects of witnessing violence towards women during childbirth. The question whether the students had (temporarily) considered drop-

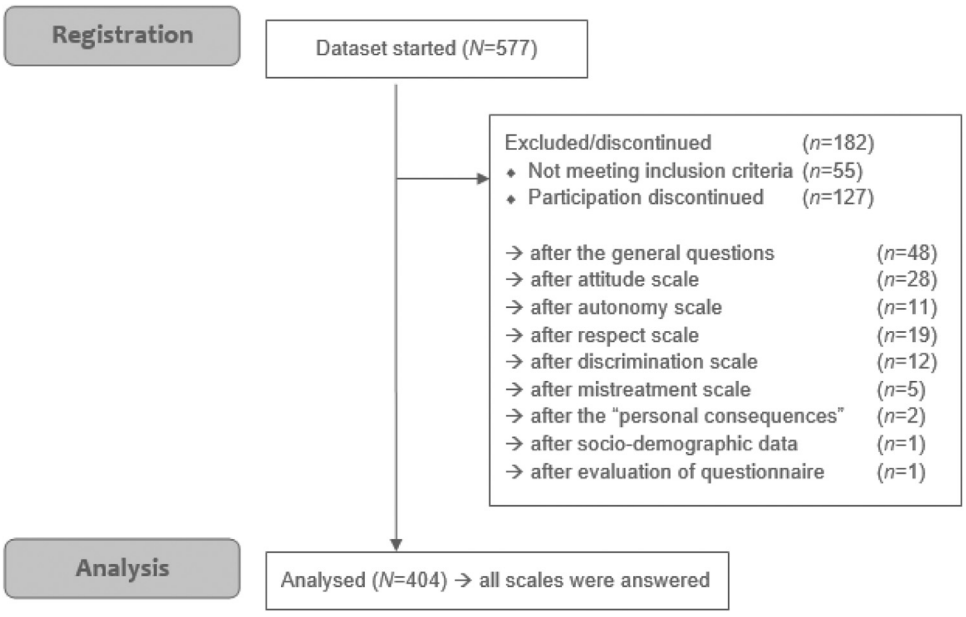

Fig. 1. CONSORT 2010 Flow Diagram, modified.

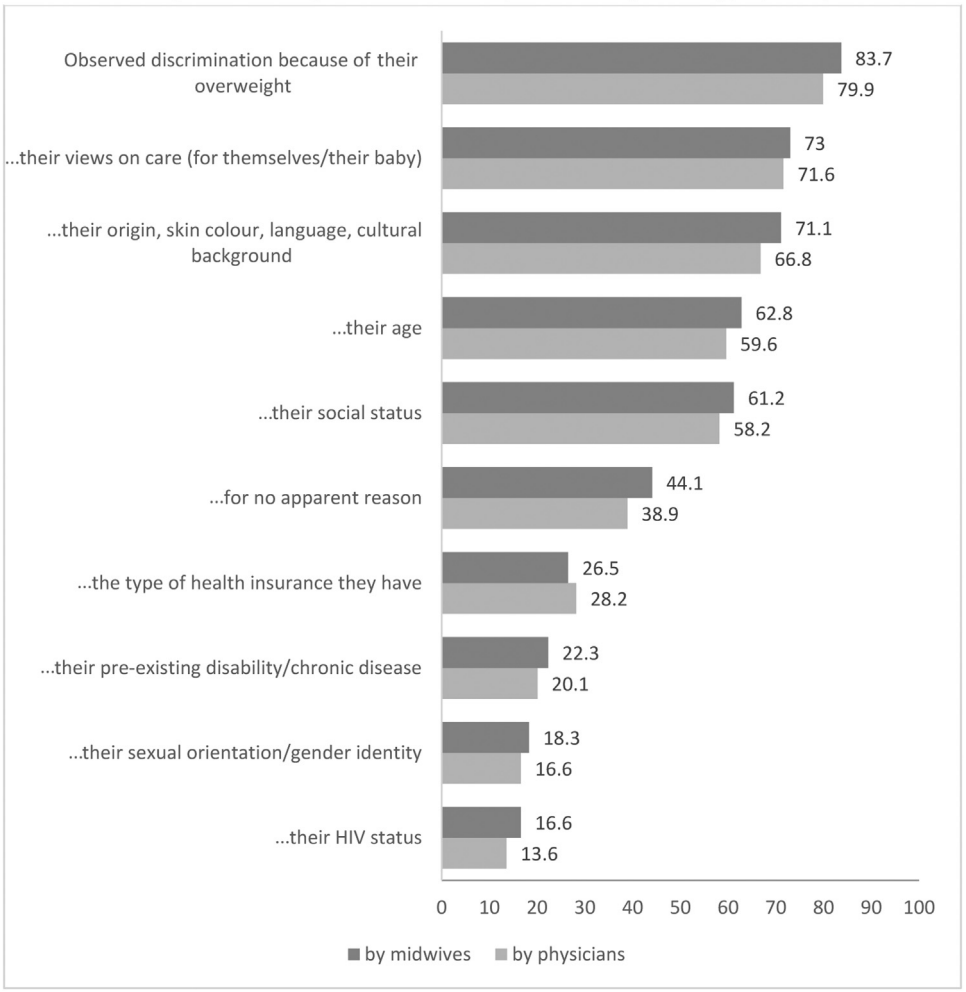

Fig. 2. Percent of midwifery students who sometimes, often, or mostly observed the following types of discrimination against labouring women, stratified by health care provider type ($n = 404$).

Table 3
Test procedures.

Variable	Normal distribution of sample values	Data level	Non-para-metric test methods	Requirements met for test procedures
Autonomy-Score	No	Metric	Spearman-Rho-Coefficient	Metric coding of variables, pairwise calculation, monotonic relationship of variables to each other.
Respect-Score	No			
Discrimination-Score	No			
Mistreatment-Score	No			
Age	No	Categorical	Kruskal-Wallis-H-Test	Metric dependent variable, categorical independent variable, independence of observations within categories, specification of an equal form of score distribution for both groups.
Length of studies	No			
Duration of labour ward placements (in weeks)	No			
Number of labour ward placements completed	No			
Being a mother	No	Binary	Mann-Whitney-U-Test	Metric dependent variable, dichotomous independent variables, independence of observations of each of the dichotomous groups, specification of an equal form of point distribution of both groups.
Community birth care experiences	No			

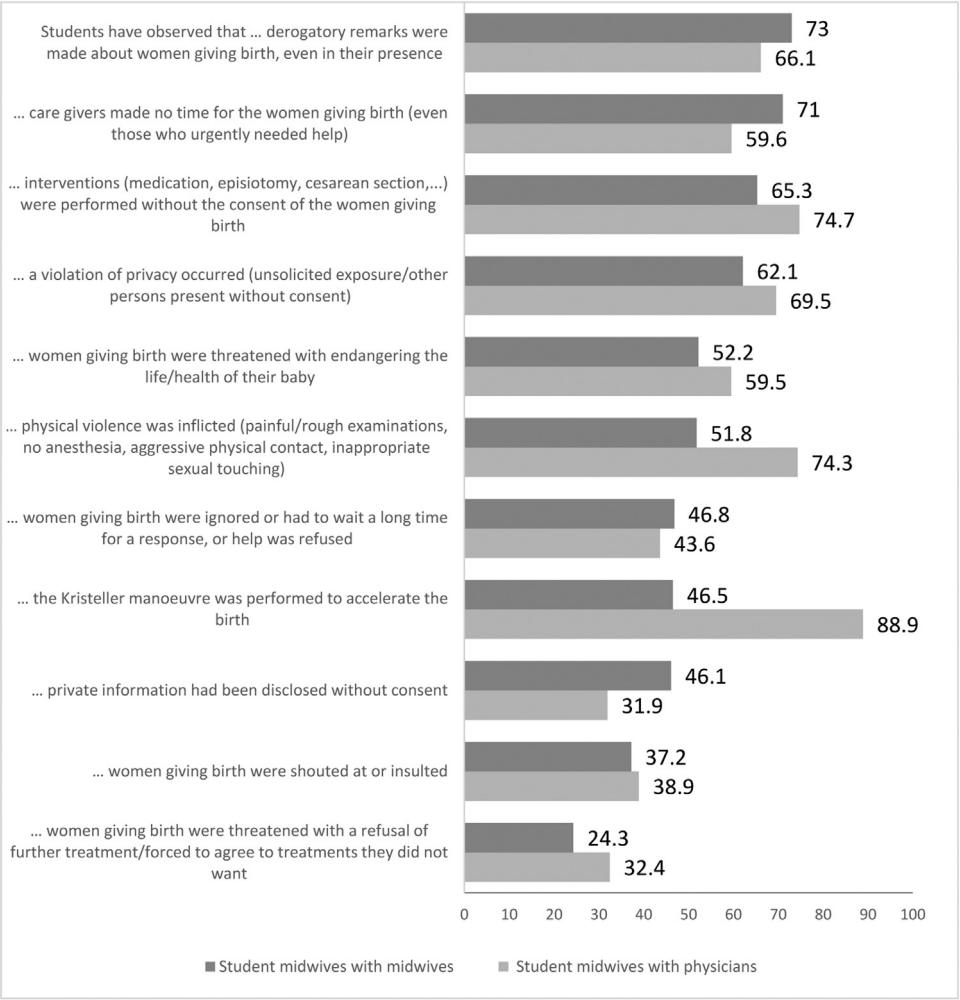

Fig. 3. Percent of midwifery students who sometimes, often, or mostly observed the following types of mistreatments against labouring women, stratified by health care provider type ($n = 404$).

ping out of their programme because of what they had experienced or observed was answered in the affirmative by one-quarter (25.4%, $n = 101$). Nearly half of the students wanted to change their workplace (be transferred to another facility or within the facility to a different area) as a result of their experiences (43.4%, $n = 173$). More than two-thirds (69.7%, $n = 278$) considered working in a different field after graduation than originally planned (for example in community midwifery rather than in a labour ward), and 42.9% ($n = 278$) had wanted to make their experience public. Seeking external help in processing the experience was something that 13.3% ($n = 53$) had considered.

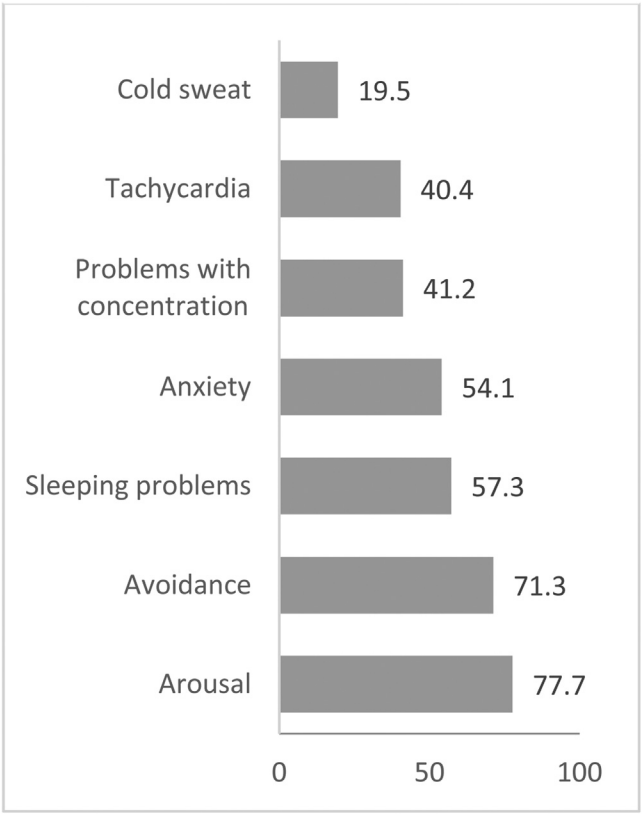

Fig. 4. Symptoms of acute and posttraumatic stress disorder after witnessing violence during childbirth, in percent (n = 397).

Witnessing and observing violence in the labour ward sometimes triggered symptoms of an acute stress reaction and/or PTSD among students (Fig. 4). Higher scores reflect a higher frequency of symptoms occurring. In nine cases (2.3%) all these symptoms occurred "often". Only 8.1% (n = 32) reported no symptoms at all or symptoms occurring only rarely, meaning that 91.9% were impacted in some way.

Descriptive characteristics of the attitude scale

Scores on the attitude scale ranged from 108 to 198, with a mean score of 163.3. A mean score of ≥165 indicates a high level of agreement with statements about promoting normal birth. It was found that students supported respect for the wishes and needs of the parturient as well as the promotion of informed decision-making and 1:1 care. A large proportion of students were not supportive of epidural anaesthesia. Responses to questions about the importance of intravenous catheters and intermittent fetal heart sound monitoring were less conclusive, with a much greater range of opinions expressed.

Demographic and educational characteristics associated with the attitude scale

No associations between midwifery education and students' attitudes towards the promotion of normal childbirth emerged in the bivariate analysis. How many semesters a survey participant had already been enrolled in the programme made only a small difference (E^2H = 0.016) which was not statistically significant ($x^2(3)$=5.682, p=.128). Results with respect to the number of practice assignments were similar: differences were very small (E^2H = 0.016) and not statistically significant (x^2 (3) = 5.916, p = .116), as was the case with duration of clinical assignments (E^2H = 0.023), X^2 (8) = 8.439, p = .392.

On the other hand, experiences with community birth during education resulted in higher scores on the scale with small positive associations (r = 0.202) and statistical significance for students with community birth experience compared to those without (M = 168.5 vs M = 162.0, U = 17,187.000, z = 3.902, p < .001). The same was true for students' own birth experiences: students with own birth experiences tended to score slightly higher on the scale (r = 0.14) than those without and this association was statistically significant (M = 169.0 vs M = 163.0, U = 10,403.500, z = 2.691, p = .007).

Associations between key variables

The autonomy and respect scales were statistically significantly correlated at the 0.01 level (two-sided) with the attitude scale (autonomy-midwives ρ = - 0.282, autonomy-physicians ρ = - 0.252; respect-midwives ρ = - 0.324, respect-physicians ρ = - 0.367) and symptoms of acute or posttraumatic stress (autonomy-midwives ρ = - 0.298; autonomy-physicians ρ = - 0.218; respect-midwives ρ = - 0.336; respect-physicians ρ = - 0.382). These correlations were weak to moderate range. The more students observed that physicians and midwives granted autonomy and respect towards birthing women the lower their scores on the scale that measures attitude towards promoting normal birth, and the less frequently they experienced distress symptoms, as shown in supplementary Table S2.

The discrimination and mistreatment scales were positively correlated with the attitude scale (discrimination-midwives ρ = 0.227, discrimination-physicians ρ = 0.244; mistreatment-midwives ρ = 0.315, mistreatment-physicians ρ = 0.328) and symptoms of acute or posttraumatic stress (discrimination-midwives ρ = 0.334; discrimination-physicians ρ = 0.326; mistreatment-midwives ρ = 0.413; mistreatment-physicians ρ = 0.489). All described correlations were statistically significant at the 0.01 level (two-sided). The more discrimination and mistreatment students had observed towards birthing women, the stronger their attitude in favour of promoting normal childbirth (with weak to moderate association and statistical significance), and the more frequently they suffered from symptoms of acute or post-traumatic stress disorder, as shown in Table S2.

Reliability statistics

Cronbach's alpha values of the scales used showed good to excellent internal validity (α = 0.713 - 0.882), as presented in Table 2. Inter-item reliability was highly homogeneous, showing values between α = 0.863 and 0.873. Both the pre-test phase and the questionnaire evaluation showed that face validity of the applied scales was good.

Discussion

This study provides evidence that midwifery students in Germany observed violence during their clinical education to a great extent and illustrates their suffering from this experience. Forms of violence observed contradict the established principles of care for women in labour, which promote physiological, low-intervention, and respectful maternity care (ICM, 2005; Bohren et al., 2015; WHO, 2018).

Degradation due to being overweight was the most common form of discrimination identified by student midwives. This observation is in line with the findings of Rubino et al. (2020) that overweight people, especially women, are socially stigmatized and are likely to receive less quality medical care. This undermines not

only social but basic human rights and endangers the health of overweight childbearing women and their children.

All seven major themes identified by Bohren et al. (2015) used to define violence during childbirth were present in the students' observations. Little research has been published about medical trainees who witness obstetric violence, disrespect and abuse in childbirth. One study from Ghana included over 800 midwifery students in their final year of study. Students in Germany were more likely to report that violence during childbirth was a problem in their setting than Ghanaian students (94.6% in Germany vs 72% in Ghana; Moyer et al., 2016). The types of obstetric violence observed differed between the two countries: derogatory remarks by midwives and use of the Kristeller manoeuvre by physicians were the most common types of violence during birth observed by German students (73% and 89% respectively). In Ghana, on the other hand, prohibiting women from making loud noises, shouting at women and scolding women for not bringing birth supplies were mentioned most often (Moyer et al., 2016). In both countries, more than one aspect of violence during childbirth was observed by midwifery students, and perceived to contrast sharply with other, positive observations of respect and encouragement (Moyer et al., 2016).

When comparing findings of the current study to reports of women who gave birth in Germany and were surveyed about their experiences with care (Limmer et al., 2021), we find that childbearing women are less likely to report violations than midwifery students. For example, 43% of childbearing women reported interventions without consent compared to over 60% of students who observed such violations. Similarly, 34% of childbearing women reported physical violence, compared to 52% of students witnessing midwives and 74% of students who witnessed physicians (Limmer et al., 2021). According to Freedman et al. (2014), violence occurs not only when birthing women themselves characterise an experience or event as such, but also when they view a particular type of behaviour as appropriate or normal but others involved consider it to be violent (Freedman et al., 2014). Freedman et al. (2018) proposed that social acceptance or the internalization of abusive behaviour may be critical in this context (Freedman et al., 2018).

So far, no uniform approach to address obstetric violence is visible in the federal states. The German Midwives Association have positioned themselves against all forms of obstetric violence (DHV, 2020b). An expert report was published for the Working Group on Women's Health on behalf of the Federal Ministry for Family Affairs, Senior Citizens, Women and Youth on the possibilities of providing target group-specific information on violence during childbirth (Beck, Ramsell, 2022).

Burrowes et al. (2017), a mixed-methods study from Ethiopia, also cited "physical and verbal abuse" and a "lack of consent prior to interventions" as major criteria for violence during childbirth, reported in interviews by health care providers (midwives *and* student midwives) and women given birth. These similar findings indicate a more general issue with communication structures and women's autonomy during childbirth irrespective of the location of the study and economic conditions. The current study, along with other studies, uncovered several deficits in the provision of care, including lack of provision of information and counselling on interventions during birth, lack of support for childbearing women to make autonomous decisions about their care, and lack of support for a normal physiologic and violence-free birth (Burrowes et al., 2017; Thompson et al., 2019).

Violence during childbirth has also been studied in Italy, Poland, and Spain in recent years (Baranowska et al., 2019; Skoko and Battisti, 2017; Mena-Tudela et al., 2020). In Poland and Italy, the experiences of women giving birth were surveyed (Baranowska et al., 2019; Skoko and Battisti, 2017). In Spain, Mena-Tudela et al. (2020) retrospectively asked medical, nursing and midwifery students about their experiences in their obstetric placements. Comparable to the present analysis, results from these studies showed that childbearing women endure verbal abuse, a lack of informed decision-making and privacy protections, as well as painful vaginal examinations/medical care (Baranowska et al., 2019; Skoko and Battisti, 2017; Mena-Tudela et al., 2020). Much like in the present study, violence during childbirth in these studies was primarily observed in the clinical setting. Limmer et al. (2021) and Vedam et al. (2019) found that mistreatment and humiliation of childbearing women in out-of-hospital settings is very rare. Violence during childbirth could therefore be classified as an institutional problem, as could low support for physiological birth.

Students reported symptoms of acute and post-traumatic stress as a result of witnessing violence during childbirth in the labour room. Feelings of guilt and/or feelings of complicity were noted by students in the open-ended text fields. After observing violence during labour, students find themselves in a position of moral distress as described by Rubashkin and Minckas (2018). The present study confirms Rubashkins' and Minckas' statement that students feel trapped between inner moral standards to stand up against their observation of violence and their low position in the hierarchical clinical structures because of the risk of greater harm against the childbearing women or themselves in case of speaking up (Rubashkin and Minckas, 2018).

Leinweber et al. (2017) found that Australian midwives reported that the presence of post-traumatic stress reactions and burnout ensued from traumatic birth experiences which led to intentions to leave the profession (Leinweber et al., 2017). In the present study and in Leinweber et al. (2017), associations were found between observation of, and involvement in, violence during childbirth and symptoms of acute stress as well as PTSD. This implies that violence during childbirth can have far reaching consequences beyond the birthing women and is affecting the mental health and career aspirations of students and midwives. PTSD of care providers may also indirectly be associated with a lower quality of care for childbearing women.

In the present survey, no relationship was found between time spent in education and mean scores on the attitude towards normal birth scale whereas length of employment was strongly associated with attitudes towards promoting normal childbirth among German midwives (by Zinsser et al., 2016). Surprisingly, there was a weak negative correlation between the autonomy and respect scales and the attitude scale: the more autonomy childbearing women were granted and the more respect they were shown, the lower the students' scores for promoting normal childbirth. Similarly, students interviewed by Thompson et al. (2019) in the Netherlands said they found themselves torn between providing women-centred birth care that empowers and respects the autonomy of the parturient and promoting physiological birth. When the preferences of the parturient conflict with notions and practices of low-intervention normal birth (e.g., an epidural anaesthesia or opioid pain relief), students felt that they required very good communication skills to arrive at an informed, evidence-based, yet woman-centred decision (Thompson et al., 2019).

In the present survey, higher levels of disrespect and violence observed were correlated to higher scores on the scale that measured attitudes to support physiologic birth. Possible reasons emerged from the open text fields, with the most common explanation for continuing the training being "I want to do better and improve the situation." This may suggest that violence and discrimination are seen as antithetical to a physiological, low-intervention birth, or that students with higher attitude scores are more sensitive to, and more likely to recognize, violence during childbirth.

Implications for midwifery education and practice

Some implications for teaching and practice can be derived from the results. Physiological, low-intervention births should be strengthened, and there is an urgent need to prevent further violence against birthing women in Germany. These two issues are interrelated because, by definition, increasing medicalisation and intervention in the birth process constitutes violence during childbirth. Accordingly, they should be considered together, with regard to all stakeholder groups and at the individual, structural, and systemic levels alike (Friedmann et al., 2014). Furthermore, the present study highlights the need for targeted, mandatory implementation of low-intervention birth guidelines and training on respectful, non-discriminatory, women-centred maternity care to safeguard against different forms of violence during childbirth. The German Association of Midwives published a handout called "Recommendations for trauma-sensitive support by midwives" (DHV, 2012) and offered further training on this topic throughout Germany. However, there is no obligatory adoption of the contents in the current curricula of midwifery education (DHV, 2019). Students should be well prepared before they enter their practical training as Rubashkin and Minckas note (2018). Educational curricula should include general information about violence in the labour ward and legal country specific information should be given. Also, postpartum care can provide opportunities to talk about women's views about their (abusive) birth experience and to inform them about their legal rights (Rubashkin and Minckas, 2018; Beck, Ramsell, 2022). The social acceptance of violence in the labour ward as described by Freedman et al. (2018) complicates this process.

Given how often students observed discrimination of larger women, teaching of medical and midwifery students about weight stigma and obesity and associated health consequences is of major importance as highlighted in the joint international consensus statement for ending the stigma of obesity (Rubino et al., 2020). Apart from these implications, there is an urgent need for professional support for midwifery students. Low-threshold access to psychological support and midwifery mentorship to cope with experiences of violence would be beneficial for midwifery students. The aim in midwifery and obstetrical care is to promote the well-being of the childbearing women from a salutogenetic perspective. The current study shows how violations of this approach can negatively impact trainees. Frameworks for health system improvement now recognize that positive patient and provider experiences are two core components of well-functioning health systems (Valaitis et al., 2020).

Strengths and limitations

The strength of the present study is that it is the first quantitative survey that presents midwifery students´observations about the various forms of violence against labouring women in Germany. Based on a large convenience sample, it is also the first study to ascertain the attitudes of midwifery students towards the promotion of normal childbirth, and to offer evidence of the association between these two issues. The study was able to differentiate between midwives and physicians in terms of autonomy, respect, discrimination, and mistreatment observed.

A weakness of any cross-sectional study is that while relationships between different factors can be illuminated, causal statements cannot be made (Hulley et al., 2013; Sedgwick, 2015). Also, no statement can be made about representativeness, as no official information was available about the characteristics of the population of midwifery students (DHV, 2020). Furthermore, memory bias cannot be ruled out, as the students were asked about their practical assignments during the entire training period. However, short-term events and difficult experiences are remembered more strongly than longer-term or uncomplicated, everyday experiences (Indrayan, 2017).

Conclusion

Student midwives are confronted with different forms of violence against childbearing women. Targeted training of all care providers with a focus on low-intervention, women-centred birth care and women's' autonomy-enhancing, non-violent communication could reduce the incidence of obstetric/midwifery violence and improve respectful maternity care. Findings highlight the impact on student's mental health and career plans. Low-threshold access to psychological support could be helpful for students to cope.

Ethical approval

The study was approved by the ethics committee at Hannover Medical School (24.9.20; No. 9347_BO_K_2020).

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Permission note

Permission has been received to adapt the original scales to the perspective of students:

1. Attitude-towards-promoting-normal-birth-scale by Zinsser et al., 2016.
2. Measuring Disrespect and Abuse During Childbirth in a High-Resource Country by Limmer et al., 2021.

Declaration of Competing Interest

We declare that there is no potential conflict of interests including any financial, personal, or other relationships with other individuals or organisations that could inappropriately influence or be perceived to influence our work.

CRediT authorship contribution statement

Bettina E.F. Schoene: Conceptualization, Investigation, Formal analysis, Writing – original draft, Writing – review & editing. **Claudia Oblasser:** Formal analysis, Supervision, Conceptualization, Writing – original draft, Writing – review & editing. **Kathrin Stoll:** Conceptualization, Formal analysis, Writing – original draft, Writing – review & editing. **Mechthild M. Gross:** Conceptualization, Writing – review & editing, Supervision.

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Supplementary materials

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