

BMJ Open How can competencies in minor surgery in general practice be increased? Assessing the effect of a compact intervention in postgraduate training: a mixed-methods study

Simon Schwill ¹, Katja Krug,¹ Aaron Poppleton ², Dorothee Reith,¹ Jonas D Senft ¹, Joachim Szecsenyi,¹ Sandra Stengel ¹

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¹Department of General Practice and Health Services Research, University Hospital Heidelberg, Heidelberg, Germany

²Institute of Global Health, Keele University, Keele, UK

Correspondence to

Dr Simon Schwill;
simon.schwill@med.uni-heidelberg.de

ABSTRACT

Objectives We aimed to assess general practice (GP) trainees' self-perception of surgical competencies and to explore longitudinal effects of a compact intervention.

Design We performed a mixed-methods study including a before and after comparison in the intervention group (IG), a comparison of attendees and non-attendees (control group (CG)) and a qualitative evaluation of the intervention. Competencies were self-assessed through surveys. Semi-structured interviews were performed after 9 months.

Setting In 2019, a 2-day voluntary seminar focussing on minor surgery/injuries was offered on 13 occasions by educators from KWBW Verbundweiterbildung^{plus} (Competence Centre for Postgraduate Medical Education Baden-Württemberg).

Participants All enrolled GP trainees were offered participation. GP trainees who did not attend a seminar (non-attendees) were recruited for CG after the 13th intervention.

Intervention Attendees took part in an interactive, GP-oriented short course incorporating 270 min of focused minor surgery/injuries training (compact intervention) on the second day of the 2-day seminar.

Results 326 GP trainees (IG: n=257; CG: n=69) participated in the study. 17 attendees were interviewed. CG had more often experienced a surgical rotation (p=0.03) and reported higher interest in performing minor surgery in future practice (p=0.03). GP trainees self-rated their all-round competency in minor surgery as average (IG: 3.0±1.0, CG: 3.2±0.9, IG:CG p=0.06). After the intervention, attendees felt that surgical skills should be a core component of GP vocational training (p=0.05). After 9 months, attendees remembered a variety of content and valued the interactive, case-oriented, peer-to-peer approach in a mixed learning group. Some attendees reported they had started to overcome competency gaps in minor surgery.

Conclusions A compact intervention in minor surgery provides an 'intense' stimulus which could foster positive attitudes towards minor surgery and promote longitudinal personal development of related competencies in GP trainees, including those with little interest in surgery. Such measures appear crucial to support individual

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ The mixed-methods approach including semi-structured interviews enabled a clear understanding of the effects of the compact intervention.
- ⇒ The longitudinal outcome of the intervention could be explored by the addition of semi-structured interviews 9 months after the intervention.
- ⇒ A validated assessment of competencies could not be performed.
- ⇒ Participation in the seminar was voluntary, risking selection bias.
- ⇒ Randomisation was not applicable and recruitment to the control group took place after all general practice trainees were offered the chance to participate.

progress of GP trainees to provide comprehensive primary care.

INTRODUCTION

Primary healthcare, including general practice (GP), aims to provide comprehensive, efficient and effective healthcare to everyone, everywhere.¹ GP incorporates specific problem-solving skills as well as dealing with acute health problems such as injuries.² To fulfil these tasks, general practitioners (GPs) require specific competencies, including in 'minor surgery'. Competencies in medical education can be summarised as the '*knowledge, skills and attitudes required for the desired performance and behaviour*'.³ Minor surgery is defined as '*an operation on the superficial structures of the body or manipulative procedure that does not involve a serious risk*'.⁴ While identified as a necessary competency in GP, concerns of insufficient GP training in minor surgery are long standing⁵ and persistent,^{6–9} particularly in countries without a robust primary care system.^{10 11} Within Germany, there are

variations in provision of minor surgery, including assessment and treatment of acute and chronic wounds, influenced by the physician's individual training and setting of the practice (urban/rural).^{12 13}

Due to the wide breadth and specific requirements of GP, training programme directors have to decide on limits within the training curriculum. This is particularly pertinent for countries without a structured pedagogic programme, where vocational 'on the job' commitments restrict time for supplementary self-directed learning outside of clinical practice.¹⁴ However, even where GP training is clearly structured, such as in the UK, training in surgery is not a necessary component of the 3-year training for GP.¹⁵

In Germany, GP specialty training requires 5 years of postgraduate training, with mandatory rotations in internal medicine (12 months) and GP (24 months), in addition to 24 months of further training in other elective specialist rotations. Rotations in surgery are not mandatory. The first German postgraduate training programme in GP—the KWBW Verbundweiterbildung^{plus} *Competence Centre for Postgraduate Medical Education Baden-Württemberg*—aims to ensure basic competencies to help GP trainees master the challenges of primary care, including within rural areas. Since 2008, it offers a curriculum, seminar-programme, a structured mentoring programme and regional clinical rotations across Baden-Württemberg as well as 'train-the-trainer' courses for educators.^{16 17}

GP trainees' attitudes towards and competency requirements for minor surgery have received little attention. This includes how basic surgical competencies could be ensured in a context of non-mandatory surgical rotations and limited annual time for a complementary programme during vocational training. In response to this, we designed a short training course (compact intervention) on surgical competencies in our programme, specifically focussing on minor surgery/injuries in 2019. Educational compact interventions have shown to be feasible, effective and time-efficient means of fostering competencies of GP trainees in palliative care as well as self-care in the medium term.^{18 19} Based on this, we hypothesised that a compact intervention could be a useful approach to induce continuing competency development in minor surgery. Aims of this study were:

1. to evaluate self-assessed competencies in basic surgery among GP trainees;
2. to explore the effects of an educational compact intervention within a neglected clinical area;
3. to describe the longitudinal impact of the compact intervention.

MATERIALS AND METHODS

Study design

The study examined GP trainees' confidence in basic surgical competencies in attendees and non-attendees of a training course in minor surgery, included a

pre-intervention and post-intervention survey among attendees as well as an exploration of impact 9 months post-intervention through semi-structured interviews.

Setting

All GP trainees enrolled in the KWBW Verbundweiterbildung^{plus} were invited to participate in a 2-day voluntary seminar focussing on minor surgery/injuries. All GP trainees were at some stage in their 5-year training, some with a previous surgical rotation. Participation in the 2-day seminar was voluntary. A total of 13 2-day seminars were offered between January and December 2019. The seminars took place in seven different venues in Baden-Württemberg, Germany. Participating GP trainees were invited to take part in the study (intervention group (IG)). Non-participating GP trainees (non-attendees) were invited to the control group by email after the intervention period (control group (CG)).

Patient and public involvement

In 2018, the public was not involved in the planning of the study. Study tools were piloted with GPs and GP trainees during study planning.

Intervention

An interprofessional team of GP educators, practising GPs and nurses developed an educational compact intervention on minor surgery/injuries. In 2019, this compact intervention was integrated into the annual 2-day training programme of the KWBW Verbundweiterbildung^{plus}. The target number of participants was n=25 GP trainees per course. The main educational objective was to ensure participants gained the knowledge and skills required to treat patients presenting to GP with minor injuries. This included updating any previous surgical competencies. The hidden curriculum aimed to increase participants' self-efficacy and to establish a personal self-affirmation towards surgery. First the reasons for consulting were discussed (such as fall, bites, chronic wounds, head injuries) with the help of GP-oriented, case-based scenarios. This was followed by practical exercises, including trauma-management, suturing or bandaging. The session concluded with self-reflection and discussion on the implementation of minor surgery into daily GP practice. The detailed course blueprint is presented in online supplemental file 1.

Data collection

Attendees, including both GP trainees with, as well as without, a 6-month rotation in surgery, were asked to complete a paper-based questionnaire directly before (T1) and an online survey 12 weeks after the seminar (T2). Attendees were recruited to interview 9 months after the intervention period, recruiting both those with and without a previous rotation in surgery (T3). There was no financial incentive, we selected by voluntary response. Only attendees who had completed both surveys were eligible. Non-attendees were invited by email to take part in a single online survey in March 2020 (T4). In the same

email we recruited for interviews. Only non-attendees who completed the survey were eligible. Data collection was completed in July 2020. Generally, those GP trainees included in planning of the study or with board certification in a surgical specialty were excluded.

Measures and outcomes (questionnaires)

Questionnaires developed by the study authors drawing on a comprehensive literature analysis, the Association for Medical Education in Europe guide 87²⁰ and personal experience of medical training interventions were used^{18 19} to assess study outcomes. Attendees as well as non-attendees rated 29 competencies in surgery using a 5-point Likert scale (T1 and T4). Additional questions were added to the survey at T2 and for non-participants at T4 taking into consideration the different timepoints of data collection. All three versions of the questionnaire were piloted using a think-aloud technique with GPs and GP trainees before use.²¹ The 5-point Likert scale ranged from 1=none to 5=verygood, 2–4 were not defined. Original surveys in German are provided in online supplemental files 2–4.

Interviews

Interviews were performed as semi-structured telephone interviews solely by a trained researcher with audio recording (SSt, MD, GP). The manual was developed by a team (n=4), whose members were familiar with the programme, the needs of the target learner group and the current literature. The manual was piloted using think-aloud technique with two graduates from the programme with minor revisions before use. Main themes covered retrospective consideration of the intervention (including emotions) and its impact on the interviewees' current competencies in minor surgery.

Data analysis

Questionnaires

All quantitative data were analysed using the statistical programme SPSS (IBM Statistics, V.25). Characteristics of GP trainees were summarised using descriptive statistics (absolute and relative frequencies (categorical variables), mean with SD and median with IQR (continuous variables)); χ^2 tests were used to detect differences in frequencies between the groups and Mann-Whitney U test for differences in rank and continuous variables. Differences between T1 and T2 were analysed using t-tests for dependent samples and McNemar tests. A Strengthening the Reporting of Observational Studies in Epidemiology list is provided in online supplemental file 5.

Interviews

Interviews were transcribed verbatim (German). Data were analysed by three different researchers using the structured qualitative content-analysis approach of Kuckartz²² and with the aid of MAX-QDA (VERBI, Berlin, Germany). All quotations in the manuscript were forward translated, with critical review and revision by a native English speaker fluent in German (AP; researcher in

GP). A Consolidated criteria for Reporting Qualitative research list is provided in online supplemental file 6.

RESULTS

In 2019, n=379 GP trainees participated in the curriculum of the KWBW Verbundweiterbildung^{plus}. A total of 281 GP trainees attended 1 out of 13 independent 2-day seminars including the intervention (mean n=21, range 15–31). GP trainees in the study team as well as those with a previous board certification in a surgical field were excluded from participation (n=3/n=15). The response rate for pre-intervention questionnaires at T1 was high (98%, n=257/263), decreasing for post-intervention questionnaires at T2 (response rate 53% n=135/257). Of 98 GP trainees invited to the control group, two-third participated (response rate 70%, n=69/98). In total, 326 GP trainees (IG: n=257, CG: n=69; 86% of all GP trainees) participated in the study.

A total of 30 interviews were completed 9 months post-intervention. Mean interview duration was 27min 54s (minimum 14min 9s, maximum 38min 26s). In the IG (n=17), nine attendees had previous surgical experience (rotation) compared with eight who had not. In the non-attendees' group, 13 GP trainees participated in the interviews of which 6 had previous surgical experience (=rotation) compared with 7 who had not.

Sociodemographic data

Sociodemographic data for the IG and CG are presented in table 1; 18.3% of IG (n=47) and 17.3% of CG (n=12) were older than 40 years. On average, the IG were in the fourth and CG in the fifth year of training (T1:CG, p<0.01). Thirty-four per cent of IG (n=89) and 49% of CG (n=34) had previously undertaken a rotation in surgery (p=0.03). Of those participating in the interviews, median age was 34.5 years (Q1: 33, Q3: 35.75) and 73% were female (n=22, n=8 male). Mean duration of GP training was 3.8 years (SD=0.83).

Self-assessed competencies (survey)

Table 2 depicts self-perceived competencies of GP trainees, with comparison of attendees (IG) and non-attendees (CG). GP trainees rated their all-round competency in the management of conditions requiring minor surgery within GP in the mid-range of a 5-point Likert scale (maximum of 5) (IG at T1: 3.0±1.0, CG at T3: 3.2±0.9, IG:CG p=0.06) (How do you estimate your all-round competencies in the treatment of surgical clinical pictures in general practice?)

At T1, CG self-rated their competencies significantly better than IG in the assessment and treatment of acute and chronic wounds (p=0.02, p<0.01, p<0.01) as well as in initiating treatment in contusion (p<0.01). The IG rated their competencies significantly better in post-traumatic physical examination of cervical spine (p=0.03). Overall, despite assessment on tetanus prevention and initiating

Table 1 Sociodemographic data and prior surgical experience of GP trainees (n=326)

		IG T1 (n=257)	IG T2 (n=135)	CG (n=69)	T1:CG (p value)
Gender (n, %)	Female	187 (72.8%)	82 (60.7%)	57 (82.6%)	0.08*
	Male	62 (24.1%)	18 (13.3%)	10 (14.5%)	
	Unknown	8 (3.1%)	35 (25.9%)	2 (2.9%)	
Age (in years)	Md (Q1; Q3)	35 (32; 39)	34 (32; 39)	36 (34; 38)	0.08†
	Min–Max	27–62	27–60	28–52	
Year of training	Md (Q1; Q3)	4 (3; 5)	4 (3; 5)	5 (4; 5)	<0.01†
	Min–Max	1 May	1 May	3 May	
Current rotation (n, %)	Outpatient/Community or GP	204 (79.4%)	81 (60.0%)	61 (88.4%)	0.12*
	Hospital	41 (16.0%)	17 (12.6%)	6 (8.7%)	
	Unknown	12 (4.7%)	37 (27.4%)	2 (2.9%)	
Are you currently undertaking or have completed a rotation in a surgical specialty?		Y 89 (34.6) N 163 (63.4) Unknown 5 (1.9)	Y 36 (26.7%) N 60 (44.4%) Unknown 39 (28.9%)	Y 34 (49.3) N 34 (49.3) Unknown 1 (1.4)	0.03*
Have you gained surgical competencies outside of medical or postgraduate medical education (eg, training as paramedic)?		Y 67 (26.1) N 175 (68.1) Unknown 15 (5.8)	Y 29 (21.5%) N 68 (50.4%) Unknown 38 (28.1%)	Y 15 (21.7) N 53 (76.8) Unknown 1 (1.4)	

* χ^2 (without 'unknown' category).

†Mann-Whitney U test.

CG, control group; GP, general practice; IG, intervention group; M, mean; Md, median; Q1, Q3, IQR; T1, before intervention; T2, 12 weeks after intervention.

treatment in contusion, both groups rated their competency in the mid-range.

Effects of the intervention (survey)

GP trainees' responses on the effects of the compact-intervention in basic surgery are also displayed in [table 3](#). After the training intervention, the IG rated their all-round competencies at 3.1 ± 1.0 on a 5-point Likert scale (T1:T2: $p=0.43$). Interest in surgical presentations was lower after the training ($p<0.01$). At T2, GP trainees were more likely to agree that a surgical rotation should be a mandatory component of GP vocational training ($p=.05$). A non-responder analysis did not reveal any differences in the IG. At T1, the CG were already more likely to approve of a mandatory surgical rotation ($3.9:3.1$, $p<0.01$), interest in a rotation in a GP practice offering minor surgery ($p=0.03$) and interest in offering minor surgery in future practice ($p=0.03$) compared with IG.

Expectations and effects of the intervention (interviews)

Participant expectations are summarised as themes in [table 4](#). Both groups felt the compact intervention was relevant to routine GP. Participants expected the intervention to provide practice-oriented knowledge and skills, including structured procedures/algorithms on management within GP and when to refer to secondary care. Longitudinal, post-intervention codes were categorised into six categories ([table 5](#)): part I summarises

strengths of the intervention—general, strengths—peer to peer and weaknesses; part II presents further categories (*content remembered, conclusion and impact on attitude and behaviour*).

Participants with and without previous surgical experience rated the mixed learning groups highly, feeling they helped to establish a positive peer-learning atmosphere.

#18 (no rotation in surgery): Well, I liked it. Especially as a beginner, it was good to realise that the others haven't mastered everything; that there were colleagues who have worked for several years yet haven't done many surgical procedures.

#20 (2 years in surgery): Well, I was really excited by the topic. Even though I didn't learn much new knowledge, the topic itself, while partly a repetition, got to the point on how it (minor surgery) could be and really is practiced in GP.

#30 (6 months in surgery): Well I was heavily involved in surgery at that time and that is why it was a little redundant for me (...) it was enjoyable to do the exchange with those who have not done surgery in years, perhaps last time during medical school, and others who had more experience than me. To apply basic principles to GP was really good then.

Participants were motivated to develop their surgical competencies, even if they previously had a negative attitude towards surgery:

Table 2 Self-assessment of competencies in basic surgery of general practice trainees (n=326)

	IG T1 (n=257)	CG (n=69)	IG T1:CG (p value)
How competent do you feel at examining traumatic injury affecting the following parts of the body? (M, SD)			
Shoulder joint	3.1 (1.0) n=256	3.0 (0.9)	0.40
Elbow joint	2.9 (1.0) n=256	2.9 (1.1)	0.66
Wrist joint	3.1 (1.0) n=256	3.1 (1.0)	0.93
Finger joints	3.3 (1.0) n=256	3.3 (1.0)	0.98
Hip joint	3.4 (0.9) n=256	3.2 (1.0)	0.11
Knee joint	3.5 (0.9) n=256	3.4 (1.0)	0.35
Ankle joint	3.2 (1.0) n=256	3.2 (1.0)	0.80
Cervical spine	3.0 (0.9) n=255	2.7 (1.1)	0.03
Thoracic spine	3.1 (0.9) n=255	2.8 (1.0)	0.01
Lumbar spine	3.2 (0.9) n=254	3.1 (1.0)	0.22
Rate your competencies in... (M, SD)			
Assessment of wounds	3.5 (0.9)	3.8 (0.8) n=68	0.02
Treatment of acute wounds	3.4 (1.0) n=255	3.7 (0.9) n=68	0.10
Treatment of chronic wounds	3.0 (1.0)	3.3 (1.0) n=68	<0.01
Treatment of infected wounds	2.9 (1.0) n=255	3.3 (1.0) n=68	<0.01
Postoperative care of fractures	3.2 (1.1) n=255	3.3 (1.0) n=68	0.55
General documentation of injuries	3.2 (1.0) n=256	3.5 (0.9) n=68	0.07
Assessment of vaccination need after injuries	4.0 (0.9)	4.2 (0.8) n=68	0.06
Knowledge of specific features of occupational injuries	2.9 (1.1) n=255	2.9 (1.2) n=68	0.68
Instigating supports/splints and rehabilitation	2.7 (1.0)	2.8 (1.0) n=68	0.41
Organisation of supportive care in the community	2.8 (1.0) n=254	2.8 (1.0) n=68	0.80
How competent do you feel at initiating treatment in the following clinical presentations? (M, SD)			
Contusion	3.8 (0.9)	4.2 (0.8) n=68	<0.01
Sprain	3.5 (1.1)	3.6 (1.1) n=68	0.55
Luxation	2.7 (1.1)	2.5 (1.1) n=68	0.32
Bite wounds	3.1 (1.1) n=256	3.3 (1.1) n=68	0.10
Foreign bodies wounds	3.0 (1.0) n=254	3.1 (1.1) n=68	0.60
Burns	3.0 (1.0)	3.1 (1.0) n=68	0.47
Fracture	3.1 (1.0) n=256	3.0 (1.1) n=68	0.58
Head and neck injury/trauma	3.0 (1.1) n=256	2.9 (1.1) n=68	0.39
Domestic violence-related injuries	2.6 (1.0) n=256	2.4 (1.1) n=68	0.23

T-test, Likert scale (1–5, max=5).

CG, control group; GP, general practice; IG, intervention group; M, mean; T1, before intervention; T2, 10 weeks after intervention.

#18 (no rotation in surgery): Yes, so it has shown me that basic surgical skills are really important for general practice. To be honest, I didn't really like surgery during medical school, but I did have a positive experience in the final year (of medical school), and this seminar has strengthened that (position), that it is really cool if you are able to do such things in the general practice by yourself, yes, certain things on your own. That was my impression, that I would absolutely want to reinforce.

Furthermore, participants were motivated to improve their gaps in surgical competencies by addressing the issue, particularly through learning from peers. The

intervention was a challenging but positive experience on the GP trainees' competencies.

#34 (no rotation in surgery): Yes, I had a bad feeling about wound management, I didn't know where to start. I recognised I really had to do something about this. That was what it provoked, it wasn't really a bad feeling in the end, but more that it was 'good to have been confronted with that', that I have reflected on that, that I have to deal with minor surgery in GP, that I have to improve for my patients.

#6 (no rotation in surgery): Well, I asked the medical staff (at my practice) and my trainer if I could be

Table 3 Effects of a compact intervention in basic surgery for GP trainees (n=326)

	IG T1 (n=257)	IG T2 (n=135)	CG (n=69)	IG T1:CG (p value)	IG T1:T2 (p value), n=100
How reasonable do you consider the following to be...					
A rotation in a surgical specialty during GP vocational training? (M, SD)	4.4 (0.8) n=256	4.4 (0.8)	4.2 (1.1)	0.16	0.68
A mandatory rotation in surgery during GP vocational training? (M, SD)	3.1 (1.3) n=256	3.3 (1.3)	3.9 (1.1)	<0.01	0.05
How would you rate your interest...?					
In surgery (in general)? (M, SD)	3.9 (0.9) n=255	3.9 (1.0)	3.7 (1.0)	0.11	0.30
In surgical presentations within general practice ('minor surgery') (MD, SD)	4.1 (0.9) n=255	3.8 (1.1)	4.1 (1.1)	0.97	<0.01
In a GP practice rotation during vocational training which regularly offers 'minor surgery'? (M, SD)	4.1 (1.0) n=256	4.1 (1.1)	4.4 (0.9)	0.03	0.09
In personally performing 'minor surgery' in your future practice? (M, SD)	3.8 (1.2) n=255	3.7 (1.3)	4.1 (1.1)	0.03	0.57
As a result of the intervention, how highly would you rate your agreement with the following statements:					
I feel more confident in the treatment of patients with injuries.	n/a	3.2 (1.0)	n/a	n/a	n/a
I feel more competent in the treatment of patients with injuries.	n/a	3.1 (0.9)	n/a	n/a	n/a
I require direction from my GP trainer on patients with injuries less often	n/a	2.8 (1.0)	n/a	n/a	n/a
My interest in treating patients with injuries in GP has increased.	n/a	3.2 (1.1)	n/a	n/a	n/a

T-test, Likert scale: 1: very bad to 5: very good.
CG, control group; GP, general practice; IG, intervention group; M, mean; n/a, not available; T1, before intervention; T2, 10 weeks after intervention.

involved with the management of wounds, so that I just can see it. Yes, sometimes it works well and sometimes less so, because I also have consultations (with my own patients), but I felt that, ok somehow, I have somehow to gain greater experience and therefore also to organise (learning) situations, to at least have tried doing it.

One beneficial aspect of the intervention was participant reflection and discussion on how minor surgery could be offered in routine GP. This included areas where it was seen as more (outside of cities) and less applicable (in urban areas with many surgeons and hospitals).

#28 (6 months in surgery): Yes actually what is possible in GP (...) I think the lecturer mentioned that treatment of wounds in GP is becoming less frequent because it is not adequately financially reimbursed, and that you have to provide sterile materials and such things. But nevertheless, that he has shown what you can offer without having the arsenal of an emergency department to hand, which care you could provide. Yes, I really liked that, it gave me a realistic picture of what to expect in practice.

Non-attendees (interviews)

Non-attendees were asked why they did not participate in the compact intervention, what could have enabled successful participation and what they had expected of the intervention. There were no differences in responses between those with and those without surgical experience. Reasons for non-attendance were: insufficient support from employers (no time for participation, no financial support), incompatibility of an overnight stay with family duties, not being in Germany at the time of intervention and acute illness. Release and financial support from an individual's employer, the option to participate in the intervention in a 1 day format, and provision of childcare would have supported participation. The non-attendees rated the intervention theme as both relevant and frequently utilisable within GP. Those unable to participate due to acute illness expressed regret at non-attendance, due to the perceived value of the topic, the collegial and positive atmosphere and the chance for peer-learning.

DISCUSSION

To the best of our knowledge, this is the first study to assess subjective competencies in basic surgical skills among GP trainees in Germany and to explore the effects of a compact intervention after 9 months. Due to the

Table 4 Expectations of GP trainees on a compact intervention in basic surgery/injuries (n=17)

Category	With surgical experience (n=9)	Without surgical experience (n=8)
Rating	No expectations	No expectations
		Low level of confidence in the topic
		Promising title
Assessment of relevance	Relevant theme	Relevant for consultation in GP
	Common reason for GP consultation	Relevant for personal training
		Challenge to implement surgery in GP
Exceptions with regard to content	Desire for structured procedural guidance and identification of red flags	Desire for structured procedural guidance/algorithm
	Desire for support in undertaking procedures independently	Desire for support in undertaking procedures independently
	Theoretical background/knowledge	Desire for competencies
	Wound dressing	Wound dressing
	Wound management such as suturing or glue application	
	Vaccination	
	Postoperative organisation	
	Postoperative analgesia	

Semi-structured interviews with GP trainees 9 months after the intervention. Surgical experience=rotation in surgery for 6 months or more, themes presented after qualitative content-analysis approach of Kuckartz.²² GP, general practice.

comparatively high number of participants, the study also represents a valuable addition to existing international studies. The aims of the study were met. We identified that GP trainees in Germany perceive their surgical competencies as average. We observed that attendees were less likely to have a previous surgical rotation but favoured a mandatory surgical rotation for all GP trainees after the compact intervention. Interviews revealed that due to the intervention there could be a positive change of attitudes towards minor surgery in general, as well as a change in behaviour to overcome gaps in surgical competencies even among attendees not attracted by minor surgery.

The baseline surveys identified low self-efficacy and perceived insufficient training in minor surgery among current GP trainees in Germany. Early exposure to surgical skills supports medical students to establish a competency foundation which can be developed further during residency training.²³ Nevertheless, continuity in training is valuable⁷ and surgical skills form one component of broad primary care, a necessity in rural areas.¹³ We found that one-third of the IG and half of the CG experienced a rotation in surgery during postgraduate medical education. Furthermore, the CG was more likely to search for a training post in GP with minor surgery and to perform minor surgery in future practice compared with the IG. We recognise that the intervention attracted GP trainees less interested in minor surgery.

After 12 weeks, the compact intervention significantly changed GP trainees' attitudes towards a mandatory surgical rotation during GP specialty training. Conversely, attendees reported reduced interest in surgical

presentations in GP as well as no increase in the attitude to perform minor surgery in GP in future practice. We think that attendees gained a realistic understanding of minor surgery and became aware of their own competency gaps. We feel this likely led to them starting to favour a compulsory surgical rotation in GP training.

After 9 months, attendees described the advantages and disadvantages of the compact intervention as well as its effects in detail. The intervention was perceived as an intense but non-offensive stimulus to deal with personal competencies in minor surgery. Thereby, the compact intervention promoted GP trainees' longitudinal competency development. Educational compact interventions have been shown to be a feasible, effective and time-efficient means of fostering competencies of GP trainees in the short and mid-term.^{18 19 24} This goes hand in hand with the learning theory of Sagasser *et al*,²⁵ who postulated a short-time and long-time learning loop of GP trainees. The current compact intervention positively stimulated GP trainees' self-directed learning. This was likely achieved through creation of a positive attitude, goal setting and motivational encouragement to use competencies in practice. Boosting motivation appeared highly correlated with a positive learning atmosphere and re-affirmation of previous competencies. Motivation could even be described as prerequisite for learning in general.²⁶

The effective compact intervention of the present study included experienced GPs as lecturers, an interactive learner-oriented educational approach, a positive learning atmosphere, case-based scenarios and integration of the

Table 5 Longitudinal evaluation of a compact intervention on basic surgery/injuries after 9 months (n=17)

Part I: longitudinal evaluation of a compact intervention on basic surgery/injuries after 9 months (n=17)		
Category	With surgical experience (n=9)	Without surgical experience (n=8)
Strengths of the intervention— general	Alignment with the competence-based curriculum in general practice	Case-based learning
	Gain in knowledge in comparison with the previous rotation (burns injuries)	Beneficial despite low level of personal competence in the topic
	Refresher	Increased participants' self-efficacy
	Procedural guidance (outpatient/inpatient). What can I do on my own/when do I admit to hospital?	Focus on application in GP
	Practical exercises—bandaging	Real-life cases from day-to-day GP
Strengths of the intervention—peer to peer	Practical exercises—bandaging	Practical exercises—Oberst' conductive anaesthesia
	Educational methods—picture quiz	Practical exercises—physical examination of joints
	Teaching aids—bandaging	Suture practice
	Focus on application—how to perform minor surgery in practice	Splinting after suspected fracture
	Interactive learning and exchange with peers	Educational methods—picture quiz
Weaknesses of the intervention	To reflect on various management approaches	Educational methods—group work
	Exchange of experiences	Teaching aids—wound dressing
	Reduced learning success without experience in GP practice	Interactive learning
	Skills in suture not necessary	Comprehensive approach—postfall injuries presenting alongside musculoskeletal trauma, for example, abdominal injury
	Not enough teaching on wound dressing	Lecturers (experienced GPs)
Part II: longitudinal evaluation of a compact intervention on basic surgery/injuries after 9 months (n=17)	One lecturer expanded on emergency medicine too much (not relevant for GP)	Encouragement and increased self-confidence
	Reflection and exchange on which level of minor surgery can be offered in general practice	Learning from peers
	Practical exercises—suturing	Realisation of different levels of competence (motivating)
	Practical exercises—bandaging	Collective learning enabled group work
	Practical exercises—splinting	Realisation of learning/competency gaps (due to comparison)
Content remembered	Picture quiz	Heterogeneity is beneficial
	Wound dressing	Reduced learning success without experience in GP practice
	A challenge after 1 year	Excessive pressures if in first year of training
		Too few practical exercises
		Not enough training in suturing
Without surgical experience (n=8)		Not enough group works
		Chronic wounds not part of the intervention

Continued

Table 5 Continued

Part II: longitudinal evaluation of a compact intervention on basic surgery/injuries after 9 months (n=17)

Conclusion	Very helpful for general practice!	Very good and practice-oriented
	Very informative!	Good and informative!
	Outstanding!	Content way better than expected from the title
	Convenient	Very relevant
	I liked it	Group work—enabled getting to know colleagues
	Slightly boring	Stimulus to meet learning/competency needs
	Exchange of different opinions	Rapid overview
	Exciting despite some overlapping with previous surgical rotation	I cannot remember
	Inspiration for GP (boost in motivation)	Now I can benefit from it
	Realisation that minor surgery by general practitioners is mostly offered in 'rural' areas	Intense stimulus to meet learning/competency gaps (during GP rotation) Established ways to develop competency (eg, see as many patients with wounds as possible)
Impact on attitude and behaviour	Wish to offer minor surgery	Stimulus to apply for a rotation in surgical training (despite reservations against surgery)
	Regret that minor surgery in GP is only possible at a limited level	Work shadowing in surgery Rotation in surgery training
		Minor surgery in general practice could be learnt in rural GP practices
		Realisation of learning/competency gaps (due to comparison with others) and realistic self-perception
		Approval of relevance of minor surgery in GP
		Increased wish to gain competencies in surgery
		Increasing wish to offer minor surgery in GP
		Wish for further future courses
		Frequent use of finger bandaging
Semi-structured interviews with GP trainees 9 months after the intervention. Surgical experience=rotation in surgery for 6 months or more, themes presented after qualitative content-analysis approach of Kuckartz. ²² GP, general practice.		

learner's daily life (practical approach). This study identified another effect of compact interventions: the peer-to-peer learning in a mixed learner's group turned out to be beneficial for two reasons: (1) participants intensified their learning by the peers' perspectives or being an instructor themselves and (2) by comparing themselves with peers (comparison): *"If a peer can handle minor surgery in GP, I can also master it!"*. Interviewees reported that peer-to-peer learning emblematised performance of minor surgery in GP as both feasible and necessary. However, whereas comparison appears appropriate, 'real' competition should be avoided as it may negatively influence memory within learning processes.²⁷

In summary, the study was designed to explore the longitudinal changes after a compact intervention and to meet the various natural limitations for educational interventions. The intervention increased GP trainees' motivation to address competency gaps. In reference to a previous study on a compact intervention in another neglected field of primary care (end-of-life care),¹⁸ the sequence of learning could be the following: first, self-awareness of competency gaps in minor surgery, accompanied by skills and motivation to deal with them (compact intervention in minor surgery, preferable in the first year of training). Then second, seeking for learning environments either in a surgical department, surgical practice or general practice, to gain competencies in minor surgery. As such, all GP trainees should ideally seek out practices which offer minor surgery.

Strengths and limitations

To our knowledge, this is the first study to explore self-assessed competencies in basic surgery among GP trainees in Germany, as well as to longitudinally evaluate a compact intervention in minor surgery/injuries. We recognise that: first, participation was voluntary, meaning randomisation was not applicable and selection bias cannot be ruled out. Voluntary participation meant that dropout occurred between T1 and T2. Responder/Non-responder analysis did not reveal any differences. Second, the extent to which other external factors may have influenced trainees' competency development after the intervention, including knowledge and skills in practice, is unclear. As such, quantifying the effects of the intervention must be seen within a wider training and development context. This accounts for our extensive qualitative component within the mixed-methods study. As we followed an exploratory approach, we did not correct for multiple testing. This could have led to an overestimation of the observed effects, especially since competencies are not independent of each other. Still, the observed group means show relevant differences. Third, validated assessment of competencies (written and/or oral and/or practical such as directly observed procedures) could not be implemented. Fourth, the intervention was performed face-to-face in 2019. Further research would be required to identify whether findings can be replicated using virtual training methods, for example, online. Finally, GP

trainees undertaking the KWBW Verbundweiterbildung^{plus} training programme may have known each other prior to study commencement. This prior cohesiveness may have influenced the learning atmosphere and thereby fostered a gain in competencies.²⁸

CONCLUSION

A compact intervention in minor surgery as presented could induce changes in behaviour as well as learning even among those GP trainees with little interest in surgery (mind change). In doing so, it could help GP trainees to gain competencies in minor surgery and be empowered to offer comprehensive primary care. Further research is necessary to explore which organisational and reimbursement structures are required to ensure training of GP trainees and educators in minor surgery is sustainable and whether this translates into effective care provision.

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Patient consent for publication Not applicable.

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Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available from the corresponding author (SSc) at reasonable request. The original dataset is in German.

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ORCID iDs

Simon Schwill <http://orcid.org/0000-0002-0954-2194>

Aaron Poppleton <http://orcid.org/0000-0002-3435-6721>

Jonas D Senft <http://orcid.org/0000-0001-6989-950X>

Sandra Stengel <http://orcid.org/0000-0002-4400-7605>

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Schwill et al: Stopping the haemorrhage of surgical competencies in General Practice

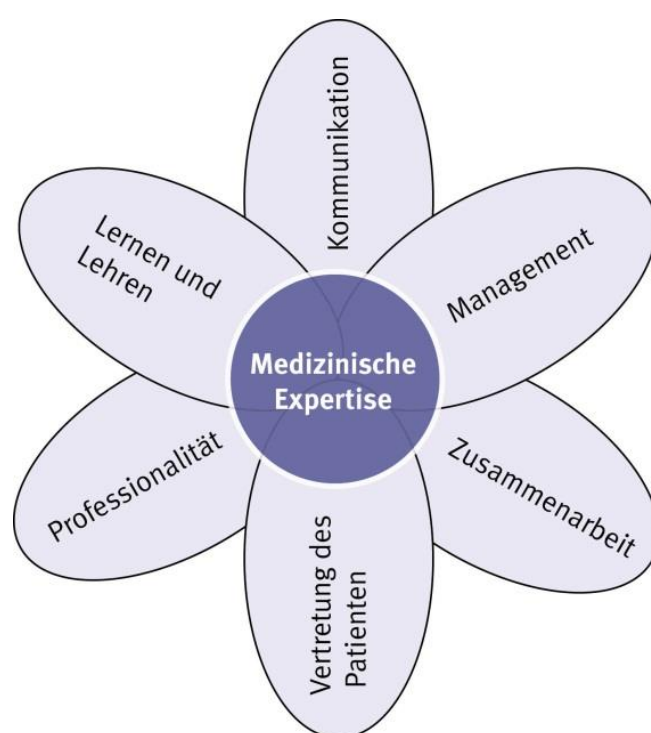
Figure 1

Blueprint: A compact intervention for General Practice Trainees aiming at the improvement of competencies in minor surgery				
Schedule	Step	Aim	Methods	Tools and material
Pre-interventional survey				
90 min.	Minor surgery in General Practice – part 1 “I have fallen down the stairs / I have cut myself”	Introduction, reflection on personal level of competence Knowledge and how to do it: common algorithms on how to proceed with different consultations in general practice (e.g. fall, contusion, fracture, acute wounds, bites, foreign bodies), red flags as well as watchful waiting	Group discussion on previous knowledge and experience, lecture, case-based plenary discussions, group-work on cases	Survey on previous skills, presentation, chart request, print-out of cases /work sheets
30 min.	Coffee break			
90 min.	Minor surgery in General Practice – part 2	Procedural skills in bodycheck after fall, suturing and bandaging Awareness, knowledge and procedural understanding for domestic violence	Assessment of previous skills, practical exercise with exemplary body check, bandaging and suturing (suturing, bandaging extremities on each other) Plenary lecture, Group discussion	Pig-feet, sewing-materials, bandage, presentation, print-out of cases Presentation, work sheets
60 min.	Lunch break			
90 min.	Minor surgery in General Practice – part 3	Synthesis of comprehensive treatment (including vaccination, referral to surgeon / hospital, further consultations) Self-reflection on how to proceed on increasing competencies in minor surgery	Plenary lecture, Group discussion Case-based discussions Discussion on how to implement minor surgery into daily practice	Presentation, work sheets, flipchart

Note. GP = General Practice

Verletzungen in der hausärztlichen Praxis

Selbsteinschätzungsbogen für Ärztinnen/Ärzte in Weiterbildung



Evaluation der KWBWB Verbundweiterbildung^{plus} – Kohortenstudie – Verletzungen – 13.02.2019 - Vers. 2 - DR/Swl
Universitätsklinikum Heidelberg, Abt. Allgemeinmedizin und Versorgungsforschung, Marsilius-Arkaden, INF 130.3, Turm West,
69120 Heidelberg // Ansprechpartner: Dr. Simon Schwill (simon.schwill@med.uni-heidelberg.de) **Bogen Nr. «M_001»**

UniversitätsKlinikum Heidelberg

Bitte trage hier dein **sechsstelliges** Pseudonym ein.

Erster Buchstabe des Vornamens deiner Mutter	Zweiter Buchstabe des Vornamens deiner Mutter	Erster Buchstabe deines Geburtsorts	Zweiter Buchstabe deines Geburtsorts	Tageszahl deines Geburtstages (z.B. 7. Oktober 1984 = 07)	
1	2	3	3b	4	5

Liebe Ärztinnen und Ärzte in Weiterbildung,
bitte gebt in den folgenden Antwortmöglichkeiten an, wie ihr eure **Kompetenzen in der Versorgung von Patienten mit Verletzungen in der hausärztlichen Praxis bzw. in der Organisation der weiteren Versorgung** (z.B. Einweisung in eine Klinik) selbst einschätzt. **Vielen Dank für eure Teilnahme!**

¹Vorab: **Begriffsdefinition „Kleine Chirurgie“:** Kleinchirurgische Eingriffe wie z.B. Abszess-Eröffnung oder primäre Wundversorgung mittels Naht

Als wie sinnvoll erachtest du...		Gar nicht sinnvoll					sehr sinnvoll				
1	eine Rotation in einem chirurgischen Fach in der Weiterbildung zum Facharzt Allgemeinmedizin?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	eine verpflichtende Rotation in einem chirurgischen Fach in der Weiterbildung zum Facharzt Allgemeinmedizin?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Als wie hoch würdest du dein Interesse bezeichnen...		Gar kein					sehr hoch				
3	an chirurgischen Inhalten (allgemein)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	an chirurgischen Inhalten in der Hausarztpraxis (sog. kleine Chirurgie ¹)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	deine Weiterbildung in einer Hausarztpraxis zu absolvieren, in der regelmäßig kleine Chirurgie ¹ durchgeführt wird?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	selbst in deiner zukünftigen Tätigkeit als Hausarzt/Hausärztin auch sog. kleine Chirurgie ¹ durchzuführen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7	Wie schätzt du deine Kompetenzen in der ambulant en Versorgung chirurgischer Krankheitsbilder insgesamt ein?	keine					sehr gut				
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Wie schätzt du deine Kompetenzen ein, bei Patienten mit Trauma folgende Körperregionen zu untersuchen :		keine					sehr gut				
8	Schultergelenk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	Ellenbogengelenk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	Handgelenk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	Fingergelenke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	Hüftgelenk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	Kniegelenk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	Sprunggelenke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	Halswirbelsäule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16	Brustwirbelsäule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	Lendenwirbelsäule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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69120 Heidelberg // Ansprechpartner: Dr. Simon Schwill (simon.schwill@med.uni-heidelberg.de) **Bogen Nr. «M_001»**

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Beurteile deine Kompetenzen in:		keine			sehr gut	
18	Einschätzung von Wundverhältnissen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	Behandlung akuter Wunden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	Behandlung chronischer Wunden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21	Behandlung infizierter Wunden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22	Versorgung von Frakturen postoperativ	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23	Allgemeine Dokumentation von Verletzungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24	Beurteilung notwendiger Impfungen bei Verletzungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25	Kenntnis der Besonderheiten eines BG Falles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26	Verordnung von Hilfs- und Heilmitteln	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27	Organisation ggf. notwendiger pflegerischer Versorgung zu Hause	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Wie schätzt du deine Kompetenzen in der akuten Versorgung folgender Krankheitsbilder hinsichtlich der Einleitung einer adäquaten Therapie ein?		keine			sehr gut	
28	Prellungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29	Distorsionen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30	Luxationen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31	Bissverletzungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32	Fremdkörperverletzungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33	Verbrennungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34	Frakturen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35	Schädelhirntraumata	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36	Verletzungen durch häusliche Gewalt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

37	Hast du eine Rotation in die Chirurgie absolviert oder arbeitest aktuell in einer chirurgischen Fachabteilung?	<input type="checkbox"/> ja <input type="checkbox"/> nein
37a	Wenn ja, in welcher/n chirurgische/n Fachabteilung/en warst bzw. bist du tätig? (Mehrfachnennung möglich)	<input type="checkbox"/> Orthopädie/ Unfallchirurgie <input type="checkbox"/> Allgemein-/Viszeralchirurgie <input type="checkbox"/> Thorax Chirurgie <input type="checkbox"/> Herzchirurgie <input type="checkbox"/> sonstiges (bitte Freitext nutzen)
	<i>Freitext:</i>	
37b	Wenn ja, wo warst bzw. bist du chirurgisch tätig? (Mehrfachnennung möglich)	<input type="checkbox"/> stationär <input type="checkbox"/> ambulant
37c	Wenn ja, wie lange warst du insgesamt chirurgisch tätig bzw. wirst du voraussichtlich tätig sein?	<input type="checkbox"/> bis 3 Monate <input type="checkbox"/> 4-6 Monate <input type="checkbox"/> 7-12 Monate <input type="checkbox"/> mehr als 12 Monate

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 69120 Heidelberg // Ansprechpartner: Dr. Simon Schwill (simon.schwill@med.uni-heidelberg.de) **Bogen Nr. «M_001»**

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38	Für Quereinsteiger: Ich bin Facharzt in einer chirurgischen Disziplin	<input type="checkbox"/> ja <input type="checkbox"/> nein
38a	Wenn ja, in welcher chirurg. Fachdisziplin?	<i>Freitext:</i>

39	Hast Du außerhalb des Studiums oder der Facharztweiterbildung chirurgische Erfahrungen gesammelt? (z.B. Rettungsdienst oder Pflegedienst)	<input type="checkbox"/> ja <input type="checkbox"/> nein
39a	Wenn ja, wo hast du chirurgische Erfahrungen gesammelt?	<i>Freitext:</i>

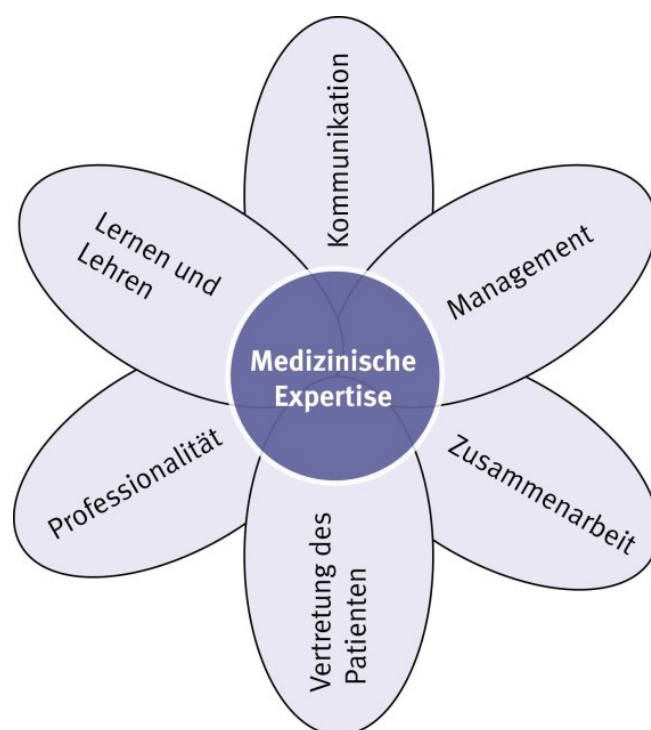
40	Dein Geschlecht?	<input type="checkbox"/> w <input type="checkbox"/> m <input type="checkbox"/> divers	
41	Wann bist du geboren?	<input type="text"/> / 19 <input type="text"/>	Monat/Jahr (z.B. 05/1986)
42	In welchem Jahr der Weiterbildung befindest du dich?	<input type="text"/>	(1 bis 5 Vollzeit-Äquivalent)
43	In welchem Weiterbildungsabschnitt befindest du dich?	<input type="checkbox"/> stationär <input type="checkbox"/> ambulant	

Hast du noch Anmerkungen zu oder Vorschläge für den Fragebogen Verletzungen in der hausärztlichen Praxis?	<i>Freitext</i>
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NACHBEFRAGUNG Verletzungen in der hausärztlichen Praxis

Selbsteinschätzungsbogen für Ärztinnen/Ärzte in Weiterbildung



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Bitte trage hier dein **sechstelliges** Pseudonym ein.

Erster Buchstabe des Vornamens deiner Mutter	Zweiter Buchstabe des Vornamens deiner Mutter	Erster Buchstabe deines Geburtsorts	Zweiter Buchstabe deines Geburtsorts	Tageszahl deines Geburtstages (z.B. 7. Oktober 1984 = 07)	
1	2	3	3b	4	5

Liebe Ärztinnen und Ärzte in Weiterbildung,
bitte gebt in den folgenden Antwortmöglichkeiten an, wie ihr eure **Kompetenzen in der Versorgung von Patienten mit Verletzungen in der hausärztlichen Praxis bzw. in der Organisation der weiteren Versorgung** (z.B. Einweisung in eine Klinik) selbst einschätzt. **Vielen Dank für eure Teilnahme!**

¹Vorab: **Begriffsdefinition „Kleine Chirurgie“:** Kleinchirurgische Eingriffe wie z.B. Abszess-Eröffnung oder primäre Wundversorgung mittels Naht

Als wie sinnvoll erachtest du...		Gar nicht sinnvoll					sehr sinnvoll				
1	eine Rotation in einem chirurgischen Fach in der Weiterbildung zum Facharzt Allgemeinmedizin?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	eine verpflichtende Rotation in einem chirurgischen Fach in der Weiterbildung zum Facharzt Allgemeinmedizin?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Als wie hoch würdest du dein Interesse bezeichnen...		Gar kein					sehr hoch				
3	an chirurgischen Inhalten (allgemein)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	an chirurgischen Inhalten in der Hausarztpraxis (sog. kleine Chirurgie ¹)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	deine Weiterbildung in einer Hausarztpraxis zu absolvieren, in der regelmäßig kleine Chirurgie ¹ durchgeführt wird?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	selbst in deiner zukünftigen Tätigkeit als Hausarzt/Hausärztin auch sog. kleine Chirurgie ¹ durchzuführen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7	Wie schätzt du deine Kompetenzen in der ambulanten Versorgung chirurgischer Krankheitsbilder insgesamt ein?	keine					sehr gut				
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Als wie hoch würdest du deine Zustimmung zu folgenden Aussagen bewerten? Durch den Doppelseminarstag 2019...		Gar keine					sehr hoch				
8	...fühle ich mich sicherer in der Versorgung von Patienten mit Verletzungen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	...fühle ich mich kompetenter in der Versorgung von Patienten mit Verletzungen.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	...versorge ich Patienten mit Verletzungen eher selbst .	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	...halte ich bei Patienten mit Verletzungen seltener Rücksprache mit meinem Weiterbilder / meiner Weiterbilderin.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	...hat sich mein Interesse für die Versorgung von Verletzungen in der Hausarztpraxis gesteigert.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	...hat sich mein allgemeines chirurgisches Interesse gesteigert.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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14	Als wie wichtig erachtest du Seminare mit chirurgischen Inhalten innerhalb der ärztlichen Weiterbildung für Allgemeinmedizin?	Sehr unwichtig sehr wichtig <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/> <input type="radio"/>
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15	Was hättest du dir im Seminar noch gewünscht?
	<i>Freitext (stichwortartig)</i>

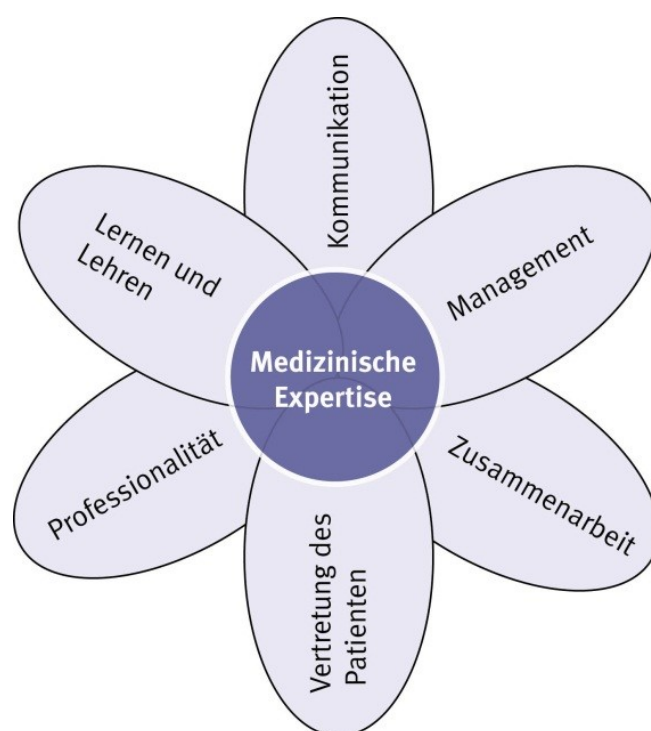
16	Hast du seit dem Doppelseminar eine Rotation in einem chirurgischen Fach begonnen?	<input type="checkbox"/> ja <input type="checkbox"/> nein
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Hast du noch Anmerkungen?	<i>Freitext</i>
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Verletzungen in der hausärztlichen Praxis

Selbsteinschätzungsbogen für Ärztinnen/Ärzte in Weiterbildung



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1	2	3	3b	4	5

Liebe Ärztinnen und Ärzte in Weiterbildung,
bitte gebt in den folgenden Antwortmöglichkeiten an, wie ihr eure **Kompetenzen in der Versorgung von Patienten mit Verletzungen in der hausärztlichen Praxis bzw. in der Organisation der weiteren Versorgung** (z.B. Einweisung in eine Klinik) selbst einschätzt. **Vielen Dank für eure Teilnahme!**

¹Vorab: **Begriffsdefinition „Kleine Chirurgie“:** Kleinchirurgische Eingriffe wie z.B. Abszess-Eröffnung oder primäre Wundversorgung mittels Naht

Als wie sinnvoll erachtest du...		Gar nicht sinnvoll					sehr sinnvoll				
1	eine Rotation in einem chirurgischen Fach in der Weiterbildung zum Facharzt Allgemeinmedizin?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2	eine verpflichtende Rotation in einem chirurgischen Fach in der Weiterbildung zum Facharzt Allgemeinmedizin?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Als wie hoch würdest du dein Interesse bezeichnen...		Gar kein					sehr hoch				
3	an chirurgischen Inhalten (allgemein)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4	an chirurgischen Inhalten in der Hausarztpraxis (sog. kleine Chirurgie ¹)?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5	deine Weiterbildung in einer Hausarztpraxis zu absolvieren, in der regelmäßig kleine Chirurgie ¹ durchgeführt wird?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6	selbst in deiner zukünftigen Tätigkeit als Hausarzt/Hausärztin auch sog. kleine Chirurgie ¹ durchzuführen?	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7	Wie schätzt du deine Kompetenzen in der ambulant en Versorgung chirurgischer Krankheitsbilder insgesamt ein?	keine					sehr gut				
		<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Wie schätzt du deine Kompetenzen ein, bei Patienten mit Trauma folgende Körperregionen zu untersuchen :		keine					sehr gut				
8	Schultergelenk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9	Ellenbogengelenk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10	Handgelenk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
11	Fingergelenke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
12	Hüftgelenk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
13	Kniegelenk	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
14	Sprunggelenke	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
15	Halswirbelsäule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
16	Brustwirbelsäule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
17	Lendenwirbelsäule	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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69120 Heidelberg // Ansprechpartner: Dr. Simon Schwill (simon.schwill@med.uni-heidelberg.de) **Bogen Nr. «M_001»**

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Beurteile deine Kompetenzen in:		keine			sehr gut	
18	Einschätzung von Wundverhältnissen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
19	Behandlung akuter Wunden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
20	Behandlung chronischer Wunden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
21	Behandlung infizierter Wunden	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
22	Versorgung von Frakturen postoperativ	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
23	Allgemeine Dokumentation von Verletzungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
24	Beurteilung notwendiger Impfungen bei Verletzungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
25	Kenntnis der Besonderheiten eines BG Falles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
26	Verordnung von Hilfs- und Heilmitteln	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
27	Organisation ggf. notwendiger pflegerischer Versorgung zu Hause	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Wie schätzt du deine Kompetenzen in der akuten Versorgung folgender Krankheitsbilder hinsichtlich der Einleitung einer adäquaten Therapie ein?		keine			sehr gut	
28	Prellungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
29	Distorsionen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
30	Luxationen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
31	Bissverletzungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
32	Fremdkörperverletzungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
33	Verbrennungen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
34	Frakturen	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
35	Schädelhirntraumata	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
36	Verletzungen durch häusliche Gewalt	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

37	Hast du eine Rotation in die Chirurgie absolviert oder arbeitest aktuell in einer chirurgischen Fachabteilung?	<input type="checkbox"/> ja <input type="checkbox"/> nein
37a	Wenn ja, in welcher/n chirurgische/n Fachabteilung/en warst bzw. bist du tätig? (Mehrfachnennung möglich)	<input type="checkbox"/> Orthopädie/ Unfallchirurgie <input type="checkbox"/> Allgemein-/Viszeralchirurgie <input type="checkbox"/> Thorax Chirurgie <input type="checkbox"/> Herzchirurgie <input type="checkbox"/> sonstiges (bitte Freitext nutzen)
	Freitext:	

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37b	Wenn ja, wo warst bzw. bist du chirurgisch tätig? (Mehrfachnennung möglich)	<input type="checkbox"/> stationär <input type="checkbox"/> ambulant
37c	Wenn ja, wie lange warst du insgesamt chirurgisch tätig bzw. wirst du voraussichtlich tätig sein?	<input type="checkbox"/> bis 3 Monate <input type="checkbox"/> 4-6 Monate <input type="checkbox"/> 7-12 Monate <input type="checkbox"/> mehr als 12 Monate

38	Für Quereinsteiger: Ich bin Facharzt in einer chirurgischen Disziplin	<input type="checkbox"/> ja <input type="checkbox"/> nein
38a	Wenn ja, in welcher chirurg. Fachdisziplin?	<i>Freitext:</i>

39	Hast Du außerhalb des Studiums oder der Facharztweiterbildung chirurgische Erfahrungen gesammelt? (z.B. Rettungsdienst oder Pflegedienst)	<input type="checkbox"/> ja <input type="checkbox"/> nein
39a	Wenn ja, wo hast du chirurgische Erfahrungen gesammelt?	<i>Freitext:</i>

40	Dein Geschlecht?	<input type="checkbox"/> w <input type="checkbox"/> m <input type="checkbox"/> divers	
41	Wann bist du geboren?	<input type="text"/> / 19 <input type="text"/>	Monat/Jahr (z.B. 05/1986)
42	In welchem Jahr der Weiterbildung befindest du dich?	<input type="text"/>	(1 bis 5 Vollzeit-Äquivalent)
43	In welchem Weiterbildungsabschnitt befindest du dich?	<input type="checkbox"/> stationär <input type="checkbox"/> ambulant	

Hast du noch Anmerkungen zu oder Vorschläge für den Fragebogen Verletzungen in der hausärztlichen Praxis?	<i>Freitext</i>
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Schwill et al – 2022 - How to increase competencies in minor surgery in General Practice

STROBE Statement—checklist of items that should be included in reports of observational studies

	Item	Recommendation	
Title and abstract	1	(a) Indicate the study’s design with a commonly used term in the title or the abstract	y
		(b) Provide in the abstract an informative and balanced summary of what was done and what was found	y
Introduction			
Background/rationale	2	Explain the scientific background and rationale for the investigation being reported	y
Objectives	3	State specific objectives, including any prespecified hypotheses	y
Methods			
Study design	4	Present key elements of study design early in the paper	y
Setting	5	Describe the setting, locations, and relevant dates, including periods of recruitment, exposure, follow-up, and data collection	y
Participants	6	(a) Cohort study—Give the eligibility criteria, and the sources and methods of selection of participants. Describe methods of follow-up	y
		Case-control study—Give the eligibility criteria, and the sources and methods of case ascertainment and control selection. Give the rationale for the choice of cases and controls	
		Cross-sectional study—Give the eligibility criteria, and the sources and methods of selection of participants	
		(b) Cohort study—For matched studies, give matching criteria and number of exposed and unexposed	
		Case-control study—For matched studies, give matching criteria and the number of controls per case	
Variables	7	Clearly define all outcomes, exposures, predictors, potential confounders, and effect modifiers. Give diagnostic criteria, if applicable	y
Data sources/ measurement	8*	For each variable of interest, give sources of data and details of methods of assessment (measurement). Describe comparability of assessment methods if there is more than one group	
Bias	9	Describe any efforts to address potential sources of bias	y
Study size	10	Explain how the study size was arrived at	y
Quantitative variables	11	Explain how quantitative variables were handled in the analyses. If applicable, describe which groupings were chosen and why	y
Statistical methods	12	(a) Describe all statistical methods, including those used to control for confounding	y
		(b) Describe any methods used to examine subgroups and interactions	n/a
		(c) Explain how missing data were addressed	y
		(d) Cohort study—If applicable, explain how loss to follow-up was addressed	
		Case-control study—If applicable, explain how matching of cases and controls was addressed	
		Cross-sectional study—If applicable, describe analytical methods taking account of sampling strategy	

Schwill et al – 2022 - How to increase competencies in minor surgery in General Practice

(e) Describe any sensitivity analyses

N/a

Continued on next page

Results			
Participants	13*	(a) Report numbers of individuals at each stage of study—eg numbers potentially eligible, examined for eligibility, confirmed eligible, included in the study, completing follow-up, and analysed	y
		(b) Give reasons for non-participation at each stage	y
		(c) Consider use of a flow diagram	y
Descriptive data	14*	(a) Give characteristics of study participants (eg demographic, clinical, social) and information on exposures and potential confounders	y
		(b) Indicate number of participants with missing data for each variable of interest	y
		(c) <i>Cohort study</i> —Summarise follow-up time (eg, average and total amount)	y
Outcome data	15*	<i>Cohort study</i> —Report numbers of outcome events or summary measures over time	y
		<i>Case-control study</i> —Report numbers in each exposure category, or summary measures of exposure	n/a
		<i>Cross-sectional study</i> —Report numbers of outcome events or summary measures	y
Main results	16	(a) Give unadjusted estimates and, if applicable, confounder-adjusted estimates and their precision (eg, 95% confidence interval). Make clear which confounders were adjusted for and why they were included	n/a
		(b) Report category boundaries when continuous variables were categorized	n/a
		(c) If relevant, consider translating estimates of relative risk into absolute risk for a meaningful time period	n/a
Other analyses	17	Report other analyses done—eg analyses of subgroups and interactions, and sensitivity analyses	y
Discussion			
Key results	18	Summarise key results with reference to study objectives	y
Limitations	19	Discuss limitations of the study, taking into account sources of potential bias or imprecision. Discuss both direction and magnitude of any potential bias	y
Interpretation	20	Give a cautious overall interpretation of results considering objectives, limitations, multiplicity of analyses, results from similar studies, and other relevant evidence	y
Generalisability	21	Discuss the generalisability (external validity) of the study results	y
Other information			
Funding	22	Give the source of funding and the role of the funders for the present study and, if applicable	y

*Give information separately for cases and controls in case-control studies and, if applicable, for exposed and unexposed groups in cohort and cross-sectional studies.

Note: An Explanation and Elaboration article discusses each checklist item and gives methodological background and published examples of transparent reporting. The STROBE checklist is best used in conjunction with this article (freely available on the Web sites of PLoS Medicine at <http://www.plosmedicine.org/>, Annals of Internal Medicine at <http://www.annals.org/>, and Epidemiology at <http://www.epidem.com/>). Information on the STROBE Initiative is available at www.strobe-statement.org.

COREQ (Consolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
<i>Personal characteristics</i>			p7
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	p7
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	p7
Occupation	3	What was their occupation at the time of the study?	p7
Gender	4	Was the researcher male or female?	p7
Experience and training	5	What experience or training did the researcher have?	
<i>Relationship with participants</i>			n/a
Relationship established	6	Was a relationship established prior to study commencement?	n/a
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	
Interviewer characteristics	8	What characteristics were reported about the inter viewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	p7
Domain 2: Study design			
<i>Theoretical framework</i>			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	p7
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	p7
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	p7
Sample size	12	How many participants were in the study?	
Non-participation	13	How many people refused to participate or dropped out? Reasons?	p8
<i>Setting</i>			n/a
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	
Presence of non-participants	15	Was anyone else present besides the participants and researchers?	p8
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	p8
<i>Data collection</i>			p8
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	
Repeat interviews	18	Were repeat inter views carried out? If yes, how many?	p8
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	
Field notes	20	Were field notes made during and/or after the inter view or focus group?	n/a
Duration	21	What was the duration of the inter views or focus group?	p8
Data saturation	22	Was data saturation discussed?	n/a
Transcripts returned	23	Were transcripts returned to participants for comment and/or	p8
			p8
			n/a

Topic	Item No.	Guide Questions/Description	Reported on Page No.
		correction?	
Domain 3: analysis and findings			3, p7
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	p9,10
Description of the coding tree	25	Did authors provide a description of the coding tree?	p7
Derivation of themes	26	Were themes identified in advance or derived from the data?	p7
Software	27	What software, if applicable, was used to manage the data?	n/a
Participant checking	28	Did participants provide feedback on the findings?	
<i>Reporting</i>			p10ff
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	p10ff
Data and findings consistent	30	Was there consistency between the data presented and the findings?	p9 and tabs
Clarity of major themes	31	Were major themes clearly presented in the findings?	p12
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

Once you have completed this checklist, please save a copy and upload it as part of your submission. DO NOT include this checklist as part of the main manuscript document. It must be uploaded as a separate file.