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How to decide adequately? Qualitative study of GP's view on decision-making in self-referred and physician-referred emergency department consultations

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ABSTRACT

- **Objectives:** Patients with acute symptoms present not only to General Practitioners (GP), but also frequently to Emergency Departments (ED). Patient's decision processes leading up to an ED self-referral are complex and supposed to result from a multitude of determinants. While they are key providers in primary care, little is known about GP's perception of such patients. This qualitative study explores the GP's view regarding motives and competences of patients self-referring to ED, and also GP's rationale for or against physician-initiated ED referrals.
- **Design:** Qualitative study with semi-structured, face-to-face interviews; qualitative content analysis.
- **Setting:** GP doctor's offices in Berlin, Germany.
- **Participants:** 15 GPs (f/m: 9/6; mean age 53.6 years).
- **Results:** Interviewed GPs related a wide spectrum of factors potentially influencing their patient's decision to visit an ED, and also their own decision-making process in potential referrals. Statements concerning patient's surmised rationale corresponded to GP's reasoning in a variety of important areas. For one thing, the timely availability of an extended spectrum of diagnostic and therapeutic options may make ED services attractive to both. Access difficulties in the ambulatory setting were mentioned as additional triggers for an ED visit initiated by patient or GP. Key patient factors like severity of symptoms and anxiety also play a major role; a desire for reassurance may lead to both self-referred and physician-initiated ED visits. Patient's health competence was prevailingly depicted as limited, with the internet as an important influencing factor. Counseling efforts by the GP were described as crucial for improving health literacy.
- **Conclusions:** Health education seems to hold promise when aiming to reduce non-urgent ED consultations. Primary care providers are in a key position in this regard. Amelioration of organizational shortages in ambulatory care, e.g. limited consultation hours, might also make an important impact, as these trigger both self-referrals and GP-initiated ED referrals.

ARTICLE SUMMARY

Strengths and limitations of this study

- This qualitative study explores the perspective of primary care providers on self-referred and physician-initiated ED consultations.
- Interviews gave detailed and profound insights into decision-making processes and the underlying complex set of considerations.
- A particular feature of the study is the incorporation of the provider perspective on both patient's and physician's motivations leading up to ED consultations.
- Deriving estimations of patient's motives from provider interviews is prone to conjecture, hence a measure of caution is warranted in regard to inferences.
- Although ED crowding is an international phenomenon, transferability of study results to other settings may be limited, as characteristics of the health care system and the specifics of the metropolitan location have influence on consultation patterns.

INTRODUCTION

Patterns of healthcare utilization are in transition. Especially in metropolitan settings like Berlin, patients often utilize more than one care sector and may present either to their GP or to a hospital ED in case of acute symptoms [1, 2]. While part of these patients may in fact be severely ill and subsequently require inpatient treatment, a large proportion of ED visits results in exclusively ambulatory treatment [3]. ED utilization by self-referring non-urgent patients represents a growing phenomenon, contributing to crowding and time shortage in ED workflow [4, 5], as such patients tie up resources and may even endanger timely treatment of critically ill patients [6-9]. Consultation reasons of self-referring patients have been evaluated in a number of recent studies [10-14], and utilization is considered to result from a complex set of motivations, encompassing a lack of connection to continuous primary care, the convenience of low-threshold ED access or the surmised availability of advanced diagnostic options in the hospital setting [14-16]. Nescience concerning alternative care facilities for acute illness – or the lack of such alternative offers in the ambulatory care sector – may also play a role for patients self-referring to ED [17, 18], as well as patient's health literacy, which is an important prerequisite for appraising their own symptoms adequately [19, 20].

There are comparatively few current publications on the perceptions of primary health care providers [13, 16, 21-23] regarding patient-initiated ED consultations, which is surprising considering the GP's key position in patient care and also her or his potentially substantial influence on decision-making [24]. Additionally, ED utilization does not only depend on patient's self-referral behavior, but may also be triggered by primary care physicians referring some of their patients to a hospital ED. Interestingly, there is very limited literature concerning GP's decision-making process when deciding for or against ED referrals.

Consequentially, the research questions for this study were: What do GPs think about their patient's motives for self-referring to an ED? How do GPs judge patient's capacity to make an appropriate decision for or against visiting an ED in acute situations? What are GP's considerations when initiating referrals to such facilities themselves? How do the self-referral motives ascribed to the patient correspond to the GP's decision-making? As we aimed to gather in-depth insights and thoroughly explore GP's perceptions and opinions, a qualitative study design was deemed appropriate.

METHODS

Study context

This qualitative interview study is a module of the mixed-methods research project "EMACROSS", part of the Berlin-based health care services research network EMANet. EMACROSS aims to evaluate the characteristics, motivations and utilization patterns of patients consulting one of eight EDs in Berlin-Mitte, the district in the city center of Berlin, Germany. For further details of rationale and design, please refer to the German Clinical Trials Register (Trial registration number: DRKS00011930) [25]. The quantitative study module consists of a repeat questionnaire survey of ED patients complemented by analysis of hospital records. While this quantitative part of the project focuses on respiratory diseases as a model condition, we did not restrict our research questions to a single health problem for the qualitative study module presented here. Study design and results are reported in line with the SRQR guidelines [26].

Sampling and participants

Participants were sampled purposively. We aimed to achieve a diverse sample in regard to age groups, length of professional experience and number of patients per practice. GPs were recruited (SO) from the GP research network of the Institute of General Practice that is also part of the EMANet consortium. Potential interviewees were sent an information sheet on the study; participants were selected from the pool of responders. The sample consisted of nine female and six male GPs, details of the sample are provided in **Table 1**.

Table 1 Characteristics of interviewees (n=15)

Study ID	Gender (f/m)	Age at time of interview (years)	Work experience as a GP (years)	Patients per quarter year
GP1	f	46	3	1000
GP2	m	59	28	1600
GP3	m	48	1	1100
GP4	f	58	26	1150

GP5	f	64	24	650
GP6	f	52	12	1100
GP7	f	61	13	375
GP8	m	56	24	1700
GP9	m	53	9	750
GP10	m	44	4	1250
GP11	m	60	27	1200
GP12	f	51	9	1850
GP13	f	53	14	900
GP14	f	54	8	750
GP15	f	45	13	1150
Mean	-	53.6	14.3	1100
Median	-	53	13	1100

f: female; m: male

Data collection

A semi-structured interview guide with open questions was developed to obtain in-depth, detailed accounts of GP's perspectives and experiences [27]. The basic structure of the first draft was based on the literature and the researcher's knowledge of the research area (SO and FH; SO is a health scientist and FH is a GP). The guide was then discussed in an interdisciplinary working group for qualitative methods and subsequently adapted. After a first set of interviews, it was revised again according to the experiences gained. Final structure of the interview guide was determined after the third interview (see excerpts in **Box 1**). Additional to the research questions addressed here, the guide contained a number of questions regarding the organization of emergency services. As these questions and the corresponding data were very specific to the German setting and local Berlin context, we chose not to present these in this paper, as they are of limited interest to the international reader. Interviews were conducted in the interviewees' practices in Berlin between July and September 2017 (SO). Participant's written informed consent was obtained a priori. Interviews were audio-recorded and transcribed verbatim (SO), all transcript data was pseudonymized. To document atmosphere, interaction, particularities and potential disturbances, field notes were taken throughout the interview process (SO).

Data collection was concluded once no more new topics and viewpoints emerged and content therefore was deemed saturated [28]. This was achieved after 15 interviews.

Box 1 Examples of questions from the interview guide

What do you think are the motives of patients for seeking care in an ED?
What do you think about your patient's capacity to make a reasonable decision for or against visiting an ED in a case of potential emergency?
Which patients do you refer to the ED and how do you decide?
What are your intentions when referring there?
Can you imagine situations in which you might send patients to the ED who are not severely or threateningly ill?

Excerpt of topics concerning the research questions addressed in this paper. Complete interview guideline is available from the authors upon request. Questions could be individually adapted to the conversation flow of the respective interviews.

Data analysis

We conducted qualitative content analysis [29]. This approach was favored due to its suitability for describing and understanding social reality, while other conceivable methods (e.g. grounded theory) might be more appropriate for purposes of theory generation [30]. A first basic structure of the coding tree was based on the topics of the interview guide, which itself had been the result of a deductive process. Additional categories were derived from the interview material inductively during coding. The combination of both approaches allows taking into account both theoretical considerations and aspects and perspectives voiced in the interviews [31, 32]. For all categories, clear definitions, coding rules and anchor examples were formulated. The category system was repeatedly reviewed and discussed within the research team and additionally with an experienced qualitative researcher (MS) from EMANet not directly involved in data collection and analysis. SO reviewed and coded all interviews. This was consecutively repeated by another researcher (FH), results and potential discrepancies in interpretation were discussed in the team. To further prevent involuntarily influencing interpretation of material by implicit expectations and presuppositions of the researchers involved [33], we discussed coding and interpretation within the interdisciplinary qualitative methods working group. For transcribing, coding and analysis, the qualitative data management software MAXQDA (Versions 12 and 2018) was used.

RESULTS

Patient's motives for self-referral vs. GP's referral motives

Three principal themes emerged during analysis of interview data concerning GP's perception of patient's presumed self-referral motives and the passages on GP's reasons for referrals to ED: "attractive offer of the ED", "patient-specific factors" and "organizational issues". Corresponding quotes are presented in **Table 2**.

Attractive offer of the ED

Patient's motives for self-referral: Interviewed GPs considered the attractiveness of the ED due to availability of timely and comprehensive diagnostic and treatment options – as compared to the services usually provided in GP's practices – a major factor for self-referred ED utilization. Some stressed that patients may believe in better, safer and more advanced procedures provided in the hospital. Further occasionally mentioned factors were the constant availability of the ED and the surmised presence of specialists there, as compared to generalist services provided in primary care. Convenience reasons apart from the aforementioned comprehensiveness and ready availability of diagnostics were also addressed, but altogether seemed not to be considered a pivotal trigger for self-referrals by most interviewees. A few mentioned surmised consultation reasons like patient's desire to avoid the hassle of making an appointment at a doctor's office. Some GPs also presumed that in case of practice closure at their own practice, certain patients might prefer the ED to spare themselves the trouble of arranging a consultation at an alternative GP practice. The phenomenon of patients seeking out-of-hours ED care specifically for convenience reasons (e.g. after finishing work) was also addressed critically, but only by few participants. Concerning appropriateness of ED utilization, a number of GPs criticized a questionable and excessive sense of entitlement in some patients, particularly regarding the availability and responsibility of the ED in non-emergency cases.

GP's referral motives: Many GPs reported to send patients to the ED if they would consider them in need of diagnostic procedures or treatment not available in the primary care setting, for example for confirmation or exclusion of a suspected – and potentially threatening – diagnosis. Some GPs especially stressed the fact that hospital infrastructure might allow for a more speedy workup. For a majority of GPs, EDs are the "port of call" where to send patients if they would want them admitted to inpatient care.

Patient-specific factors

Patient's motives for self-referral: In the GP's experience, acute onset or perceived rapid deterioration of symptoms were important triggers for self-referral. This aspect was mentioned in a majority of interviews. Such ED consultations were judged by the interviewees as legitimate, as they may indicate "real emergencies". Many of the interviewed GPs stressed the important role of "perceived severity of illness" and "anxiety" as reasons for visiting the ED, especially in chronically ill patients. Anxiety in a subjectively threatening situation was frequently described as influenced by patient's personality traits, for example a high sensitivity to physical symptoms. The issue of anxiety triggered or augmented by media reports about serious illness or dangerous complications was discussed in this context. A number of interviewees considered this especially a problem in younger patients. GPs surmised that such patients visit the ED for quick and thorough reassurance, a second opinion on their symptoms or other kinds of health information, while in fact not being in any dangerous situation health-wise. Other patient-specific self-referral reasons mentioned in the interviews encompassed a possible lack of trust of the patient in her or his GP, or even doubt about the primary care provider's competency.

GP referral motives: A majority of GPs reported to refer in cases of acute and severe symptoms, a subject already broached in the "attractive offer" section above. However, it was notable that domestic care situation was another major point of consideration for some of the interviewed GPs when deciding for or against hospital referral, as well as factors like frailty or limited mobility, which might impede adequate outpatient management, even in cases where the health situation would usually not require an ED referral.

Organizational issues

Patient's motives for self-referral: Access problems in the ambulatory care sector were quite frequently addressed in the interviews. GPs problematized the limitation of consultation hours in primary care and in specialist doctor's offices, driving patients to the ED off-hours in lack of an alternative. Notably, this seemed not to be perceived as a "convenience issue" but as a problem of availability. In the GP's experience, patients with acute symptoms or increasing worries feeling in need of urgent investigation or reassurance might see no other option than presenting to an ED off-hours. Length of appointment waiting times at specialist practices was also problematized: GPs criticized

that some ambulatory medical specialist's schedules may be booked out for months in advance. Patient's hope of being seen by a physician of the desired specialty more quickly – or at all – might then drive them to an ED self-referral. It was also mentioned that the ED offers a low-threshold access to health care for patients not regularly attached to a GP practice.

GP's referral motives: Some GPs reported to more frequently refer patients to hospital prior to the weekend or on days when practices might close, and no further outpatient diagnostic investigations might be possible on the day or the following days. One GP indicated to sometimes feeling forced to refer acutely ill patients to the ED if she would not succeed in arranging a necessary appointment at a specialist's practice.

Table 2 Quotes – Patient's motives for self-referral vs. GP's referral motives

	Patient's motive	**GP's motive**
Attractive offer of the ED	"[...] because they think that they get everything quickly in the ED, which they do not have instant access to in the outpatient sector […]." (GP 10) "Meaning, that they can go there anytime [...]." (GP 9) "They believe that the real specialists […] are in the hospital." (GP 12) "[...] because they do not have the time or might just not feel like sitting down in the GP's waiting area." (GP 15) "[…] patients go to the ED because they don't want to wait for an appointment." (GP 13)	"I refer to the ED only in situations that are no longer manageable in the outpatient sector." (GP 12) "If there is another acute exacerbation […] this patient belongs in the hospital, because the guidelines say so for such constellations […]." (GP 8) "If I would have to wait 24 hours for my laboratory results […] and my differential diagnosis is potentially life-threatening, then I send to the ED." (GP 14) "If I really need either rapid tests or clinical parameters that I can't ascertain here." (GP 8)
Patient-specific factors	"Usually they are suffering from acute symptoms [...]. Such are situations that cannot be coped with at home […] Then my patients go to the hospital […]." (GP 5) "Then of course, because they experience something acute, which scares them." (GP 6) "[...] the age of the patient plays a role.	"And I always decide to refer to the ED when my gut tells me "attention, attention, this is dangerous, acutely dangerous". […] – for me, the criterion is "acutely dangerous for the person affected."" (GP 11) „And this patient came to the practice with most severe dyspnea during the week,

	Young people are much more hectic and much more afraid [...].” (GP 8) “I do believe that it plays a role [...] in making the decision: "I won't go to my GP, but straight to the ED". Which of course signifies that the doctor-patient relationship and the bond of trust with the GP is not so good.” (GP 11) “Suddenly they all come and have something. There was something on TV again [...]. In my view, they scare patients there.” (GP 4)	[…]. I experienced him as […] severely ill.“ (GP 14) “It plays a role in the decision, how is the patient’s care situation at home? […] Is care ensured? And if it is not ensured, in case of an acute event, he has to be admitted to hospital.” (GP 2) “Sometimes it is an issue, with very frail patients, who are not able to organize themselves, […] you know this will not work in the outpatient situation.“ (GP 7)
Organizational issues	“There are always times when I'm not here. It is Tuesday afternoon now, my practice closed at 2 pm today. Where do the patients go? They go to the ED.” (GP 12) "[...] if it's a strong cough [...] I must be able to go to my doctor on the same day. And if I can't, because I'm denied access, I'll go to an ED." (GP 13) “There are people who may not even have a GP [...]. It may seem the easiest option for them.” (GP 13)	“[…] when there is no other option to get this resolved in the outpatient sector prior to the weekend.“ (GP 3) „I think we have a massive problem at the moment, the problem of “finding appointments with specialist”. Patients wait very long […]. This can result in me having to send them to hospital […].” (GP 4)

Patient’s capacity to make an adequate decision

Interviewee’s opinions regarding the capacity of their patients to make a proper decision on where to go with a perceived health problem were quite heterogeneous. Corresponding quotes are presented in **Table 3.** In the majority of the interviews, GPs tended to judge patient’s general ability to assess their own symptoms adequately as poor, and many were of the impression that such competences were currently in decline. The perceived deficiency in judgement of patient’s own health status was frequently stressed as an important reason for non-urgent ED consultations. The internet as a source of health information was seen very critically in this context, as online information might have a negative impact on patient's disease perception. Patient’s ability to adequately process and assess information consumed from media sources was frequently deemed limited. Some interviewees stressed the potential escalating effect of frightening information,

especially on already anxious patients. The widely perceived lack in patient's competence in regard to health matters despite abounding information was frequently attributed to a deficiency in health education and even basic medical knowledge especially ascribed to younger patients. Some GPs remarked that in addition to individual health literacy, patient's respective social environment also may have great influence on how they perceive and appraise their symptoms. The crucial role of the doctor-patient relationship and the importance of the GP as a key health educator was also stressed. Counseling and health education by the individual patient's GP was mentioned as having a potentially de-escalating effect, as it may help patients not to over-interpret their symptoms. Some GPs also stressed the importance of educating their patients about the function of the ED vs. the GP after a non-urgent visit to avert similar events in the future.

Table 3 Quotes – Patient's Capacity to make an adequate decision

"Not very good, I would say [...] Patients cannot assess this [...]. The patients have zero competence there." (GP 9)
"[...] as far as the younger patients are concerned, only 25 percent make the right decision. The general direction is: emergency services are visited much too quickly or hectically, although in fact it may not be really necessary." (GP 8)
"Like I said, nowadays they "google" and then: "This is very bad, can get very bad […] and this must be resolved on a Saturday or Friday evening." (GP 8)
"[...] the older ones [...] I rarely see them going there without an emergency, I say. [...] They more often go to ED in cases where I would say "Well, these are indications that actually belong in an ED [...]."
"I think, old patients, the old grandma, the grandpa, who thinks three times before he decides to visit a doctor. He'll wait until it doesn't work anymore." (GP 10)
"In this context it is important to me, to evaluate the GP's role differently. I believe that we are the ones who have long-standing and in part intensive relationships with our patients. We are probably the ones who can achieve the most, because we can steer the patients a lot, much better than any other medical specialist can." (GP 5)
"The more I explain, the more the patient knows. The more he knows, the more competent he becomes [...]. If I explain well, people are more competent. And health education is important [...]." (GP 1)

DISCUSSION

Corresponding factors in patient's and GP's decision-making

Severity and acuity of symptoms

Justifiably, severity and acuity of symptoms were seen as major triggers of ED consultations, as depicted in the "attractive offer" and "patient-specific factors" themes. Much has been written about patients and GPs turning to the hospital sector in cases of severe or potentially dangerous symptoms [10, 13, 34, 35], which is not surprising – and altogether adequate – considering the ED's purpose. However, in the GP's view, both self-referral and physician-initiated referral reasons go far beyond the medical question "emergency or not", and it is very interesting that a number of additional considerations may actually also correspond to each other. As such conceivable parallel factors have not been discussed before in-depth, they warrant special emphasis.

Perceived shortage of alternative options

Patients as well as GPs might turn the hospital sector for – real or perceived – lack of alternative ports of call for timely diagnostic procedures or specialist consultations. Access problems in the primary care sector have been described as an important trigger for ED visits in a number of previous works [36-38]. In our study, unavailability of practice services of both GPs and medical specialists during weekends and off consultation hours was problematized as leading to both self-referred and physician-initiated ED visits. Crowding of specialist practices may also make GPs feel forced to refer patients. The identification of lack of access in the outpatient sector as a key factor for patient's decision making is in line with the results of Durand et al. [16], who interviewed ED health care professionals and patients. The situation of patients visiting EDs because they do not have a regular GP or may not be able to visit her or him for a variety of reasons was also described by others [11, 23].

Desire for reassurance and the role of health literacy

A wish for reassurance emerged as another important factor that might prompt both a self-referred and a GP-initiated ED consultation. For one thing, GPs relate that health-related anxiety constitutes a principal reason for patients self-referring to EDs, as they perceive themselves as emergencies urgently needing attention. Anxiety as a driving motive for ED consultations was described in a substantial number of international studies [11, 16, 17, 39], a state of anxious concern regarding patient's general health – besides the worry caused by unclear symptoms related to the acute problem – was described as an important factor. Correspondingly, the GPs in our sample stressed both the importance of the subjectively threatening acute symptoms and also the general trepidation in regard to

potential serious disease or complications. This corresponds to a recent survey by Scherer et al. [40] Regarding physician's decision-making, the motivations attested to anxious patients reflect in the doctor's desire for having the patient's care ensured while not being available as a provider, for example when considering whether to admit a patient prior to the weekend. Interviewees described how they would take into account factors like patients being elderly, frail, or alone at home – situations in which physicians might feel anxious that ambulatory management may not suffice to ensure comprehensive care. The role of factors like GP's personal experience and personality traits – like level of cautiousness and anxiety about the consequences of the decision not to admit – was as well discussed by previous works [41]. Interestingly, such aspects were not overtly addressed by our sample, but may be veiled in descriptions of decisions to refer to EDs to assure care, e.g. prior to weekends.

The few available published studies on GP's reasoning when deciding about a potential referral suggest that decisions usually result from a complex process of consideration, taking into account many factors besides the medical necessity [35, 41]. Dempsey et al. [42] described such processes as an attempt at integration of conflicting consequences for many stakeholders in time-pressured situations, which seems an apt conclusion when looking at our results. Interestingly, GPs in our interviews seemed to perceive the considerations of patients self-referring to EDs because of access issues or a desire for reassurance as essentially legitimate, as compared to reasons of pure convenience. Understanding for anxiety-driven self-referrals has been correspondingly expressed by GPs in other studies [13]. The finding that both factors also feature prominently in the physician's decision-making may explain such judgement.

While physicians ascribed a comparably minor role to convenience issues, the main criticism was notably directed at health literacy and patient's competence to assess their own symptoms, and therefore at the cognitive and emotional process leading up to the decision to consult, rather than at the decision itself. In the interviews, patients were frequently attested deficiencies in adequately appraising their own symptoms as dangerous or harmless. In this context, internet health information was seen as potentially deleterious to already scared patients. Concern in health care professional about "disinformation despite information overflow" has been reported by others [43]. Correspondingly, a higher utilization of EDs and hospital services by people with low health competence could be shown in international studies [19, 44], and also a larger

proportion of potentially avoidable consultations in such patients [20]. In our interviewee's statements, the conceived preponderance of younger patients in regard to low health competency and subsequent non-adequate ED visits was quite notable. Other works seem to hint at the genuineness of this perceived phenomenon, finding a higher rate of non-urgent consultation in the young in their quantitative evaluations [45, 46]. While higher internet use and consumption of online information in younger age groups is an undeniable fact [47], the causal role of media consumption on the path to low health competency voiced in some of our interviews must hitherto remain conjecture without scientific corroboration. However, the statements relate a „felt" connection between two modern-age phenomena. GPs stressed their own role as key health educators in this context. Interestingly, the presumed phenomenon of younger patients constituting a main group of non-urgent ED utilizers is discrepant to other works stressing the role of chronically ill patients as a high-utilizing population [11, 48]. However, as qualitative studies are not suited to give any estimation regarding prevalence or proportions, we can only relate the impression gained from our interviews here. A conceivable explanation for the comparable dominance of the aspect "young people's consultations" may be that ED visits by the chronically ill could be perceived by the GPs as altogether legitimate, whereas non-urgent ED consultations by the young – and otherwise healthy – might be more "memorable" when prompted to think about self-referrals, as they were judged critically.

Strengths and limitations

Our study paints a complex and comprehensive picture of patient's motives for self-referral and GP referral motives from the provider perspective. Interviews gave detailed and profound accounts of GP's experience of their patient's motives and their own thought process leading to ED referrals. Our results allow relating and comparing both sets of motivations and corresponding decision-making processes.

We are aware that deriving patient's motives from provider interviews poses the problem of secondhand assumptions and conjecture. However, there also are some important benefits of this approach: Firstly, GPs have experience with a very large number of patients and are not centered on a single case, allowing them a more global and analytical perspective. Secondly, providers intimately know the mechanisms and structures of the health care system, which is important to understand the process of utilization. As GPs frequently care for their respective patients for many years, they know a lot about their thoughts and decision processes, but are also able to give insights into the role of health

competencies. Naturally, this perspective is limited to patients who at least occasionally visit GP practices, and not all ED patients may do so.

Researcher and interviewer bias can never be completely excluded, but we strived to minimize any unwitting influence of our own hypotheses and opinions by constant reflection of our research process in and outside our team.

Transferability to other settings is also an issue. The metropolitan setting of Berlin might have influenced the results, as health care structures are abundant and close-meshed. This is true for both EDs and physician's practices – patient's choices might be much more limited in rural areas, which could have an impact on decision-making. However, earlier studies hint at a fundamental concordance of considerations in less urbanized settings.[13] It must also be noted that access to health care services depends markedly upon the structures and organization of the local and national health system, and our results may reflect the specifics of our setting. In Germany, neither access to GPs, specialist practices or EDs is restricted in any way, patients can choose freely. Some practices may be appointment-only, others might accept walk-ins. Germany has neither a gatekeeping system nor rules for attachment of patients to specific practices, except within some disease management programs. Therefore, in other settings, consultation patterns might differ.

CONCLUSIONS

In the provider's view, patient's decision to self-refer to an ED results from a complex set of motives. Besides the overt central role of severity and acuteness of symptoms, a perceived lack of alternative care offers and a prevalent desire for reassurance emerged as important factors that are mirrored in the GP's considerations when deciding about an ED referral. If a patient's decision is based on a rationale corresponding to the physician's own reasoning, an ED self-referral may be perceived as comparably legitimate by providers, even if the case may not qualify as a genuine emergency in a medical sense.

Concerning the desire for reassurance, physicians ascribe a potentially escalating effect to information obtained from the media and the internet, especially in younger patients. A focus on appropriate health education could hold promise when aiming to reduce non-urgent ED consultations. In this regard, primary care providers are in a key position that may allow them a special opportunity to actually make a difference.

Organizational restrictions of the health care system – like appointment problems and practice closure times – also strongly influence both patient's and GP's decision-making. Provisions to ensure easier and faster access to diagnostics in the ambulatory sector might make both patients and GPs more comfortable with a decision not to immediately turn to the hospital sector. Naturally, the feasibility, acceptance and impact of such measures needs to be evaluated in future studies.

List of abbreviations

GP General Practitioner

ED Emergency Department

DECLARATIONS

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Author contributions

MM initiated the research network “EMAnet”, he also is principal investigator and speaker of the umbrella project. LS is deputy co-speaker of EMANet. FH and CH designed the subproject “EMACROSS”, including quantitative and qualitative modules. SO and FH developed the study protocol including research questions and methods of evaluation of the qualitative study module. SO recruited participants, carried out the interviews and transcribed audio files. SO and FH analyzed and interpreted the data. MS reviewed the category system. SO drafted the manuscript for this paper. FH and CH revised the manuscript. SO and FH drafted the final version. MS, MM and LS critical revised the manuscript. All authors read and approved the final manuscript.

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Competing interests

All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf and declare: besides the grant specified in the funding declaration, no support from any organization for the submitted work; no financial relationships with any organizations that might have an interest in the submitted work in the previ-

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Ethics approval and consent to participate

The study was approved by the ethics committee of Charité – Universitätsmedizin Berlin (EA1/361/16). Informed consent was obtained from all participants.

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No additional data are available.

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Reporting checklist for qualitative study.

Based on the SRQR guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

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		Reporting Item	Page Number
	#1	Concise description of the nature and topic of the study identifying the study as qualitative or indicating the approach (e.g. ethnography, grounded theory) or data collection methods (e.g. interview, focus group) is recommended	1
	#2	Summary of the key elements of the study using the abstract format of the intended publication; typically includes background, purpose, methods, results and conclusions	1
2Problem formulation	#3	Description and signifcance of the problem / phenomenon studied: review of relevant theory and empirical work; problem statement	3
Purpose or research question	#4	Purpose of the study and specific objectives or questions	3
Qualitative approach and research paradigm	#5	Qualitative approach (e.g. ethnography, grounded theory, case study, phenomenolgy, narrative research) and	4-6

		guiding theory if appropriate; identifying the research paradigm (e.g. postpositivist, constructivist / interpretivist) is also recommended; rationale. The rationale should briefly discuss the justification for choosing that theory, approach, method or technique rather than other options available; the assumptions and limitations implicit in those choices and how those choices influence study conclusions and transferability. As appropriate the rationale for several items might be discussed together.	
Researcher characteristics and reflexivity	#6	Researchers' characteristics that may influence the research, including personal attributes, qualifications / experience, relationship with participants, assumptions and / or presuppositions; potential or actual interaction between researchers' characteristics and the research questions, approach, methods, results and / or transferability	5
Context	#7	Setting / site and salient contextual factors; rationale	4-5
Sampling strategy	#8	How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g. sampling saturation); rationale	4-5
Ethical issues pertaining to human subjects	#9	Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	5, 18
Data collection methods	#10	Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources / methods, and modification of procedures in response to evolving study findings; rationale	5
Data collection instruments and technologies	#11	Description of instruments (e.g. interview guides, questionnaires) and devices (e.g. audio recorders) used for data collection; if / how the instruments(s) changed over the course of the study	5-6
Units of study	#12	Number and relevant characteristics of participants, documents, or events included in the study; level of	4-5

		participation (could be reported in results)	
Data processing	#13	Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymisation / deidentification of excerpts	5-6
Data analysis	#14	Process by which inferences, themes, etc. were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale	6
Techniques to enhance trustworthiness	#15	Techniques to enhance trustworthiness and credibility of data analysis (e.g. member checking, audit trail, triangulation); rationale	6, 15
Syntheses and interpretation	#16	Main findings (e.g. interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	7-11
Links to empirical data	#17	Evidence (e.g. quotes, field notes, text excerpts, photographs) to substantiate analytic findings	9-11
Intergration with prior work, implications, transferability and contribution(s) to the field	#18	Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application / generalizability; identification of unique contributions(s) to scholarship in a discipline or field	11-15
Limitations	#19	Trustworthiness and limitations of findings	14-15
Conflicts of interest	#20	Potential sources of influence of perceived influence on study conduct and conclusions; how these were managed	17
Funding	#21	Sources of funding and other support; role of funders in data collection, interpretation and reporting	17

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How to decide adequately? Qualitative study of GP's view on decision-making in self-referred and physician-referred emergency department consultations in Berlin, Germany

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How to decide adequately? Qualitative study of GP's view on decision-making in self-referred and physician-referred emergency department consultations in Berlin, Germany

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ABSTRACT

- **Objectives:** Patients with acute symptoms present not only to General Practitioners (GP), but also frequently to Emergency Departments (ED). Patient's decision processes leading up to an ED self-referral are complex and supposed to result from a multitude of determinants. While they are key providers in primary care, little is known about GP's perception of such patients. This qualitative study explores the GP's view regarding motives and competences of patients self-referring to ED, and also GP's rationale for or against physician-initiated ED referrals.
- **Design:** Qualitative study with semi-structured, face-to-face interviews; qualitative content analysis.
- **Setting:** GP doctor's offices in Berlin, Germany.
- **Participants:** 15 GPs (f/m: 9/6; mean age 53.6 years).
- **Results:** Interviewed GPs related a wide spectrum of factors potentially influencing their patient's decision to visit an ED, and also their own decision-making in potential referrals. Considerations go beyond medical urgency. Statements concerning patient's surmised rationale corresponded to GP's reasoning in a variety of important areas. For one thing, the timely availability of an extended spectrum of diagnostic and therapeutic options may make ED services attractive to both. Access difficulties in the ambulatory setting were mentioned as additional triggers for an ED visit initiated by patient or GP. Key patient factors like severity of symptoms and anxiety also play a major role; a desire for reassurance may lead to both self-referred and physician-initiated ED visits. Patient's health competence was prevailingly depicted as limited, with the internet as an important influencing factor. Counseling efforts by the GP were described as crucial for improving health literacy.
- **Conclusions:** Health education could hold promise when aiming to reduce non-urgent ED consultations. Primary care providers are in a key position here. Amelioration of organizational shortages in ambulatory care, e.g. limited consultation hours, might also make an important impact, as these trigger both self-referrals and GP-initiated ED referrals.

ARTICLE SUMMARY

Strengths and limitations of this study

- This qualitative study explores the perspective of primary care providers on self-referred and physician-initiated ED consultations.
- Interviews gave detailed and profound insights into decision-making processes and the underlying complex set of considerations.
- A particular feature of the study is the incorporation of the provider perspective on both patient's and physician's motivations leading up to ED consultations.
- Deriving estimations of patient's motives from provider interviews is prone to conjecture, hence a measure of caution is warranted in regard to inferences.
- Although ED crowding is an international phenomenon, transferability of study results to other settings may be limited, as characteristics of the health care system and the specifics of the metropolitan location have influence on consultation patterns.

INTRODUCTION

Patterns of healthcare utilization are in transition. Especially in metropolitan settings like Berlin, patients often utilize more than one care sector and may present either to their GP or to a hospital ED in case of acute symptoms [1, 2]. While part of these patients may in fact be severely ill and subsequently require inpatient treatment, a large proportion of ED visits results in exclusively ambulatory treatment [3]. ED utilization by non-urgent patients represents a growing phenomenon, contributing to crowding and time shortage in ED workflow [4, 5], as such patients tie up resources and may even endanger timely treatment of critically ill patients [6-9]. Scientific data suggests a detrimental effect of ED crowding and subsequent longer ED waiting times on hard endpoints like short-term mortality of both patients admitted to hospital and ED outpatients. Thus, the potential impact of efforts to reduce ED utilization by non-urgent cases is substantial, as such are considered to account for a high proportion (up to >60%) of ED patient load, depending on study and setting [10-12]. In Germany, the current true total number of emergency department treatments is quite difficult to estimate, as there are no official comprehensive nationwide statistics [13]. However, the data sources available suggest a steady rise in total ED consultations over a decade [14], and also a growing proportion of ED outpatient treatments [14, 15]. Currently, out-of-hours care in Berlin is based on two parallel structures: statutory health insurance physicians provide a triage and counseling hotline and a physician home visit service, and the Berlin Fire Brigade is responsible for rescue services by ambulance in more severe emergencies. Concerning hospital-based urgent care centers staffed by GPs, there currently are only two in existence citywide. Additional to the structures described, patients are at liberty to self-refer to a hospital ED anytime, without having to call a hotline before. GPs also frequently refer patients to hospital EDs for further diagnostic investigation and treatment. On the organizational level, GPs and specialist practices comprise the “ambulatory care sector”, whereas EDs belong to the “hospital care sector”, although treating many outpatient cases.

Consultation reasons of self-referring patients have been evaluated in a number of recent studies [10, 16-19], and utilization is considered to result from a complex set of motivations, encompassing a lack of connection to continuous primary care, the convenience of low-threshold ED access or the surmised availability of advanced diagnostic options in the hospital setting [19-21]. Nescience concerning alternative care facilities for acute illness – or the lack of such alternative offers in the ambulatory care sector – may also play a role

for patients self-referring to ED [13, 22], as well as patient's health literacy, which is an important prerequisite for appraising their own symptoms adequately [23, 24].

There are comparatively few current publications on the perceptions of primary health care providers [18, 21, 25-27] regarding patient-initiated ED consultations, which is surprising considering the GP's key position in patient care and also her or his potentially substantial influence on decision-making [28].

However, there is an important additional trigger of ED visits that is less frequently focused: utilization does not only depend on patient's self-referral behavior, but may also be initiated by primary care physicians referring some of their patients to a hospital ED. Interestingly, there is very limited literature concerning GP's decision-making process when ruling for or against referrals. However, previous studies suggest that knowledge about a patient's personal background as well as the physician's gut feeling play a role, besides the mere assessment of signs and symptoms [29]. Personal characteristics of GPs, like cautiousness vs. readiness to take risks, are as well discussed as influencing factors on referral decisions [30, 31], as are social issues and other factors of contextual pressure [32]. Considering the literature, it is also quite unclear to what extent GPs may potentially decide to refer non-urgent cases to EDs, and why they might do so.

In this study, we therefore wanted to investigate the twofold problem of self-referral and GP-initiated referral to EDs. The aim was to better understand the motivations and decision-making processes of patients and GPs in regard to ED self-referrals and physician-initiated referrals by a qualitative evaluation of the provider perspective. Looking at the patient's and GP's motives, we considered it highly interesting to further explore these in regard to conceivable parallelism, as such has not yet been scientifically addressed to our knowledge. Furthermore, the situation of self-referrals being discussed as a contributor to ED crowding [33] leads up to the very interesting question of whether patients are actually in a capacity to adequately decide on the appropriateness of utilization, e.g. depending on individual health literacy [24]. This is why we decided to additionally focus on this aspect.

Consequentially, the main research questions for this study were: What do GPs think about their patient's motives for self-referring to an ED? How do GPs judge patient's capacity to make an adequate decision for or against visiting an ED in acute situations? What are GP's considerations when initiating referrals to such facilities themselves? How do the self-referral motives ascribed to the patient correspond to the GP's decision-making? As we aimed to

gather in-depth insights and thoroughly explore GP's perceptions and opinions, a qualitative study design was deemed appropriate.

METHODS

Study context

This qualitative interview study is a module of the mixed-methods research project "EMACROSS", part of the Berlin-based health care services research network EMANet. EMACROSS aims to evaluate the characteristics, motivations and utilization patterns of patients consulting one of eight EDs in Berlin-Mitte, the district in the city center of Berlin, Germany. For further details of rationale and design, please refer to the German Clinical Trials Register (Trial registration number: DRKS00011930) [34]. The quantitative study module consists of a repeat questionnaire survey of ED patients complemented by analysis of hospital records. While this quantitative part of the project focuses on respiratory diseases as a model condition, we did not restrict our research questions to a single health problem for the qualitative study module presented here. Study design and results are reported in line with the SRQR guidelines [35].

Sampling and participants

Participants were sampled purposively. We aimed to achieve a diverse sample in regard to age groups, length of professional experience and number of patients per practice. We aimed to diversify our sample according to a set of characteristics that were considered to be of possible influence on the interviewee's stance, in order to cover a wide spectrum of views. Physician's gender has been described as an influencing factor on referral decisions, as well as personal risk tolerance [30]. From a theoretical point of view, risk tolerance might be conceivably associated with characteristics like length of professional experience and physician's age, while there is no literature to prove or discard this. Professional experience might also have influence on the GP's insight into patient's motives, which is grounded on her or his personal experience with a larger – or smaller – number of patients treated in the course of her or his career. GPs were recruited (SO) from the GP research network of the Institute of General Practice that is also part of the EMANet consortium. Potential interviewees were sent an information sheet on the study; participants were selected from the pool of responders. The sample consisted of nine female and six male GPs, details of the sample are provided in **Table 1**.

Table 1 Characteristics of interviewees (n=15)
f: female; m: male

Study ID	Gender (f/m)	Age at time of interview (years)	Work experience as a GP (years)	Patients per quarter year
GP1	f	46	3	1000
GP2	m	59	28	1600
GP3	m	48	1	1100
GP4	f	58	26	1150
GP5	f	64	24	650
GP6	f	52	12	1100
GP7	f	61	13	375
GP8	m	56	24	1700
GP9	m	53	9	750
GP10	m	44	4	1250
GP11	m	60	27	1200
GP12	f	51	9	1850
GP13	f	53	14	900
GP14	f	54	8	750
GP15	f	45	13	1150
Mean	-	53.6	14.3	1100
Median	-	53	13	1100

Data collection

A semi-structured interview guide with open questions was developed to obtain in-depth, detailed accounts of GP's perspectives [36]. The basic structure of the first draft was based on the literature [16-19, 21, 22, 24, 31] and the researcher's knowledge of the research area (SO and FH; SO is a health scientist and FH is a GP). Questions were intended to generate interview content suitable to answer the study research questions. The guide was then discussed in an interdisciplinary working group for qualitative methods and subsequently adapted. After a first set of interviews, it was revised again according to the experiences gained. Final structure of the interview guide was determined after the third interview (see

excerpts in **Box 1**). Additional to interview topics corresponding to the main research questions outlined in the introduction of this paper, the guide contained a number of questions regarding the local organization of emergency services. This topic was included into the interview guideline for the benefit of a supplementary research question: "How do GP's view the organization of acute and emergency care in Berlin?", as the umbrella EMANet project has a regional focus. As these questions and the corresponding data were very specific to the German setting and local Berlin context, we chose not to present these in this paper, as they are of limited interest and benefit to the international reader. Interviews were conducted in the interviewees' practices in Berlin between July and September 2017 (SO). Participant's written informed consent was obtained a priori. Interviews were audio-recorded and transcribed verbatim (SO), all transcript data was pseudonymized. To document atmosphere, interaction, particularities and potential disturbances, field notes were taken throughout the interview process (SO). Data collection was concluded once no more new topics and viewpoints emerged and content therefore was deemed saturated [37]. This was achieved after 15 interviews.

Box 1 Examples of questions from the interview guide

What do you think are the motives of patients for seeking care in an ED?
What do you think about your patient's capacity to make an adequate decision for or against visiting an ED in a case of potential emergency?
Which patients do you refer to the ED and how do you decide?
What are your intentions when referring there?
Can you imagine situations in which you might send patients to the ED who are not severely or threateningly ill?

Excerpt of topics concerning the research questions addressed in this paper. Complete interview guideline is available from the authors upon request. Questions could be individually adapted to the conversation flow of the respective interviews.

Data analysis

We conducted qualitative content analysis [38]. This approach was favored due to its suitability for describing and understanding social reality, while other conceivable methods (e.g. grounded theory) might be more appropriate for purposes of theory generation [39]. A first basic structure of the coding tree was based on the topics of the interview guide, which itself had been the result of a deductive process. Additional categories were derived from the interview material inductively during coding. The combination of both approaches allows taking into account both theoretical considerations and aspects and perspectives voiced in

the interviews [40, 41]. For all categories, clear definitions, coding rules and anchor examples were formulated. The category system was repeatedly reviewed and discussed within the research team and additionally with an experienced qualitative researcher (MS) from EMANet not directly involved in data collection and analysis. SO reviewed and coded all interviews. Independent coding was then performed by another researcher (FH), results and potential discrepancies in interpretation were discussed in the team. To further prevent involuntarily influencing interpretation of material by implicit expectations and presuppositions of the researchers involved [42], coding and interpretation were peer-reviewed within the interdisciplinary qualitative methods working group to enhance credibility. For transcribing, coding and analysis, the qualitative data management software MAXQDA (Versions 12 and 2018) was used.

Patient and public involvement

Patients were not involved in the design and conduct of the study. Participants were asked whether they would like to receive a report on the study's findings. Study results will be disseminated to interviewees who desired such.

RESULTS

In the following results section, we first present data on patient's motives for self-referral and GP's referral motives, structured by common themes that emerged during analysis. A further subsection will demonstrate the results regarding GP's assessment of patient's capacity to decide adequately about an ED consultation. However, the research question regarding possible congruities of motives on the patient and physician side will be addressed in the discussion section due to its interpretative and integrative character. The results section nevertheless contains the data basis for that research question, as it inherently relies on results concerning patient's and GP's motives.

Patient's motives for self-referral and GP's referral motives

Three principal themes emerged during analysis of interview data concerning GP's perception of patient's presumed self-referral motives and the passages on GP's reasons for referrals to ED: "attractive offer of the ED", "patient-specific factors" and "organizational issues". Corresponding quotes are presented in **Table 2**.

Attractiveness of emergency department care

Patient's motives for self-referral: Interviewed GPs considered the attractiveness of the ED due to availability of timely and comprehensive diagnostic and treatment options – as compared to the services usually provided in GP's practices – a major factor for self-referred ED utilization. Some stressed that patients may believe in better, safer and more advanced procedures provided in the hospital. Further occasionally mentioned factors were the constant availability of the ED and the surmised presence of specialists there, as compared to generalist services provided in primary care. Convenience reasons apart from the aforementioned comprehensiveness and ready availability of diagnostics were also addressed, but altogether seemed not to be considered a pivotal trigger for self-referrals by most interviewees. A few mentioned surmised consultation reasons like patient's desire to avoid the hassle of making an appointment at a doctor's office. Some GPs also presumed that in case of practice closure at their own practice, certain patients might prefer the ED to spare themselves the trouble of arranging a consultation at an alternative GP practice. The phenomenon of patients seeking out-of-hours ED care specifically for convenience reasons (e.g. after finishing work) was also addressed critically, but only by few participants. Concerning appropriateness of ED utilization, a number of GPs criticized a questionable and excessive sense of entitlement in some patients, particularly regarding the availability and responsibility of the ED in non-emergency cases.

GP's referral motives: Many GPs reported to send patients to the ED if they would consider them in need of diagnostic procedures or treatment not available in the primary care setting, for example for confirmation or exclusion of a suspected – and potentially threatening – diagnosis. Some GPs especially stressed the fact that hospital infrastructure might allow for a more speedy workup. For a majority of GPs, EDs are the "port of call" where to send patients if they would want them admitted to inpatient care.

Patient-specific factors

Patient's motives for self-referral: In the GP's experience, acute onset or perceived rapid deterioration of symptoms were important triggers for self-referral. This aspect was mentioned in a majority of interviews. Such ED consultations were judged by the interviewees as legitimate, as they may indicate "real emergencies". Many of the interviewed GPs stressed the important role of "perceived severity of illness" and "anxiety" as reasons for visiting the ED, especially in chronically ill patients. Anxiety in a subjectively threatening situation was frequently described as influenced by patient's personality traits, for example a high sensitivity to physical symptoms. The issue of anxiety triggered or augmented by

media reports about serious illness or dangerous complications was discussed in this context. A number of interviewees considered this especially a problem in younger patients. GPs surmised that such patients visit the ED for quick and thorough reassurance, a second opinion on their symptoms or other kinds of health information, while in fact not being in any dangerous situation health-wise. Other patient-specific self-referral reasons mentioned in the interviews encompassed a possible lack of trust of the patient in her or his GP, or even doubt about the primary care provider's competency.

GP referral motives: A majority of GPs reported to refer in cases of acute and severe symptoms, a subject already broached in the "attractive offer" section above. However, it was notable that domestic care situation was another major point of consideration for some of the interviewed GPs when deciding for or against hospital referral, as well as factors like frailty or limited mobility, which might impede adequate outpatient management, even in cases where the health situation would usually not require an ED referral.

Organizational issues

Patient's motives for self-referral: Access problems in the ambulatory care sector were quite frequently addressed in the interviews. GPs problematized the limitation of consultation hours in primary care and in specialist doctor's offices, driving patients to the ED off-hours in lack of an alternative. Notably, this seemed not to be perceived as a "convenience issue" but as a problem of availability. In the GP's experience, patients with acute symptoms or increasing worries feeling in need of urgent investigation or reassurance might see no other option than presenting to an ED off-hours. Length of appointment waiting times at specialist practices was also problematized: GPs criticized that some ambulatory medical specialist's schedules may be booked out for months in advance. Patient's hope of being seen by a physician of the desired specialty more quickly – or at all – might then drive them to an ED self-referral. It was also mentioned that the ED offers a low-threshold access to health care for patients not regularly attached to a GP practice.

GP's referral motives: Some GPs reported to more frequently refer patients to hospital prior to the weekend or on days when practices might close, and no further outpatient diagnostic investigations might be possible on the day or the following days. One GP indicated to sometimes feeling forced to refer acutely ill patients to the ED if she would not succeed in arranging a necessary appointment at a specialist's practice.

Table 2 Quotes – Patient's motives for self-referral and GP's referral motives

	Patient's motive	**GP's motive**
Attractive offer of the ED	"[...] because they think that they get everything quickly in the ED, which they do not have instant access to in the outpatient sector […]." (GP 10) "Meaning, that they can go there anytime [...]." (GP 9) "They believe that the real specialists […] are in the hospital." (GP 12) "[...] because they do not have the time or might just not feel like sitting down in the GP's waiting area." (GP 15) "[…] patients go to the ED because they don't want to wait for an appointment." (GP 13)	"I refer to the ED only in situations that are no longer manageable in the outpatient sector." (GP 12) "If there is another acute exacerbation […] this patient belongs in the hospital, because the guidelines say so for such constellations […]." (GP 8) "If I would have to wait 24 hours for my laboratory results […] and my differential diagnosis is potentially life-threatening, then I send to the ED." (GP 14) "If I really need either rapid tests or clinical parameters that I can't ascertain here." (GP 8)
Patient-specific factors	"Usually they are suffering from acute symptoms [...]. Such are situations that cannot be coped with at home […] Then my patients go to the hospital […]." (GP 5) "Then of course, because they experience something acute, which scares them." (GP 6) "[...] the age of the patient plays a role. Young people are much more hectic and much more afraid [...]." (GP 8) "I do believe that it plays a role [...] in making the decision: "I won't go to my GP, but straight to the ED". Which of course signifies that the doctor-patient relationship and the bond of trust with the GP is not so good." (GP 11) "Suddenly they all come and have something. There was something on TV again [...]. In my view, they scare patients there." (GP 4)	"And I always decide to refer to the ED when my gut tells me "attention, attention, this is dangerous, acutely dangerous". […] – for me, the criterion is "acutely dangerous for the person affected."" (GP 11) „And this patient came to the practice with most severe dyspnea during the week, […]. I experienced him as […] severely ill." (GP 14) "It plays a role in the decision, how is the patient's care situation at home? […] Is care ensured? And if it is not ensured, in case of an acute event, he has to be admitted to hospital." (GP 2) "Sometimes it is an issue, with very frail patients, who are not able to organize themselves, […] you know this will not work in the outpatient situation." (GP 7)

Organizational issues	“There are always times when I'm not here. It is Tuesday afternoon now, my practice closed at 2 pm today. Where do the patients go? They go to the ED.” (GP 12) "[...] if it's a strong cough [...] I must be able to go to my doctor on the same day. And if I can't, because I'm denied access, I'll go to an ED." (GP 13) “There are people who may not even have a GP [...]. It may seem the easiest option for them.” (GP 13)	“[…] when there is no other option to get this resolved in the outpatient sector prior to the weekend.“ (GP 3) „I think we have a massive problem at the moment, the problem of “finding appointments with specialist”. Patients wait very long […]. This can result in me having to send them to hospital […].” (GP 4)

Patient’s capacity to make an adequate decision

Interviewee’s opinions regarding the capacity of their patients to make a proper decision on where to go with a perceived health problem were quite heterogeneous. Corresponding quotes are presented in **Table 3.** In the majority of the interviews, GPs tended to judge patient’s general ability to assess their own symptoms adequately as poor, and many were of the impression that such competences were currently in decline. The perceived deficiency in judgement of patient’s own health status was frequently stressed as an important reason for non-urgent ED consultations. The internet as a source of health information was seen very critically in this context, as online information might have a negative impact on patient's disease perception. Patient’s ability to adequately process and assess information consumed from media sources was frequently deemed limited. Some interviewees stressed the potential escalating effect of frightening information, especially on already anxious patients. The widely perceived lack in patient’s competence in regard to health matters despite abounding information was frequently attributed to a deficiency in health education and even basic medical knowledge especially ascribed to younger patients. Some GPs remarked that in addition to individual health literacy, patient’s respective social environment also may have great influence on how they perceive and appraise their symptoms. The crucial role of the doctor-patient relationship and the importance of the GP as a key health educator was also stressed. Counseling and health education by the individual patient’s GP was mentioned as having a potentially de-escalating effect, as it may help patients not to over-interpret their symptoms. Some GPs also stressed the importance of educating their patients about the function of the ED vs. the GP after a non-urgent visit to avert similar events in the future.

Table 3 Quotes – Patient's Capacity to make an adequate decision

"Not very good, I would say [...] Patients cannot assess this [...]. The patients have zero competence there." (GP 9)
"[...] as far as the younger patients are concerned, only 25 percent make the right decision. The general direction is: emergency services are visited much too quickly or hectically, although in fact it may not be really necessary." (GP 8)
"Like I said, nowadays they "google" and then: "This is very bad, can get very bad […] and this must be resolved on a Saturday or Friday evening." (GP 8)
"[...] the older ones [...] I rarely see them going there without an emergency, I say. [...] They more often go to ED in cases where I would say "Well, these are indications that actually belong in an ED [...]."
"I think, old patients, the old grandma, the grandpa, who thinks three times before he decides to visit a doctor. He'll wait until it doesn't work anymore." (GP 10)
"In this context it is important to me, to evaluate the GP's role differently. I believe that we are the ones who have long-standing and in part intensive relationships with our patients. We are probably the ones who can achieve the most, because we can steer the patients a lot, much better than any other medical specialist can." (GP 5)
"The more I explain, the more the patient knows. The more he knows, the more competent he becomes [...]. If I explain well, people are more competent. And health education is important [...]." (GP 1)
"[...] the most important thing is de-escalation policy [...] to put banalities into perspective. Not to over-interpret things and not to stir up anxieties. Because this eventually drives people to the doctor […]. (GP 1)

DISCUSSION

In the interviews, GPs depicted a wide spectrum of factors potentially influencing their patient's decision to visit an ED, and also their own decision-making process in possible referrals. Common themes concerned the attractiveness of EDs due to constant and instant availability of an advanced diagnostic and therapeutic spectrum, and patient-specific factors like severity and acuity of symptoms as well as health-related anxiety and a need for reassurance. Organizational shortcomings of practice-based ambulatory care, e.g. appointment problems, were also raised as potential triggers for ED utilization. Patient's health competence and capacity to decide adequately was frequently depicted as limited, and the impact of health information derived from media sources was seen very critically.

Corresponding factors in patient's and GP's decision-making

Severity and acuity of symptoms

Justifiably, severity and acuity of symptoms were seen as major triggers of ED consultations, as depicted in the "attractive offer" and "patient-specific factors" themes. Much has been written about patients and GPs turning to the hospital sector in cases of severe or potentially dangerous symptoms [10, 18, 43, 44], which is not surprising – and altogether adequate – considering the ED's purpose. However, in the GP's view, both reasons for self-referral and physician-initiated referral go far beyond the medical question "emergency or not", and it is very interesting that a number of additional considerations may actually also correspond to each other. As such conceivable parallel factors have not been discussed before in-depth, they warrant special emphasis.

Perceived shortage of alternative options

Patients as well as GPs might turn to the hospital sector for – real or perceived – lack of alternative ports of call for timely diagnostic procedures or specialist consultations. Access problems in the primary care sector have been described as an important trigger for ED visits in a number of previous works [45-47]. In our study, unavailability of practice services of both GPs and medical specialists during weekends and off-hours was problematized as leading to both self-referred and physician-initiated ED visits. Crowding of specialist practices may also make GPs feel forced to refer patients. The identification of lack of access in the outpatient sector as a key factor for patient's decision making is in line with the results of Durand et al. [21], who interviewed ED health care professionals and patients. The situation of patients visiting EDs because they do not have a regular GP – or may not be able to visit her or him for a variety of reasons – was also described by others [17, 27].

Internationally, a variety of measures to improve out-of-hours care for less urgent acute patients have been evaluated. In the Netherlands for example, EDs and GP cooperatives have created Emergency Care Access Points (ECAP), where patients are triaged under GP supervision and steered to either GP or ED care, thus avoiding direct patient self-referral to EDs [48]. This concept has been shown to reduce ED consultations considerably [49], and evidence for GP cooperatives as an effective concept is convincing [50]. A "single-desk" access point model for acute care comparable to the ECAP has been proposed for Germany in a recent expertise by the government-appointed "Advisory Council on the Assessment of Development in the Health Care System" [51]. Some authors have however raised concerns regarding the cost-effectiveness of entirely new service models for out-of-hours care, as such might ultimately increase demand, while simple extension of GP opening hours might be a resource-sparing alternative [52].

Desire for reassurance and the role of health literacy

A wish for reassurance emerged as another important factor that might prompt both a self-referred and a GP-initiated ED consultation. For one thing, GPs considered health-related anxiety a principal reason for ED self-referrals, as patients perceive themselves as emergencies urgently needing attention. Anxiety as a driving motive for ED consultations was described in a substantial number of international studies [17, 21, 22, 53]. A state of anxious concern regarding patient's general health – beside the worry caused by unclear acute symptoms – was described as an important factor. Correspondingly, the GPs in our sample stressed both the importance of the subjectively threatening acute symptoms and also the general trepidation in regard to potential serious disease or complications. This corresponds to a recent survey by Scherer et al. [11]. Regarding physician's decision-making, the motivations attested to anxious patients reflect in the doctor's desire for having the patient's care ensured while not being available as a provider, for example when considering whether to admit a patient prior to the weekend. Interviewees described how they would consider factors like patients being elderly, frail, or alone at home – situations in which physicians might feel anxious that ambulatory management may not suffice to ensure comprehensive care. As already mentioned, previous studies have also discussed the role of factors like GP's personal experience and personality traits – like level of cautiousness and apprehensions about the consequences of the decision not to admit [31]. Interestingly, such aspects were not overtly addressed by our sample, but may be veiled in descriptions of decisions to refer to EDs to assure care, e.g. prior to weekends.

The few available published studies on GP's reasoning when deciding about a potential referral suggest that decisions usually result from a complex process of consideration, taking into account many factors besides the medical necessity [31, 44]. Dempsey et al. [32] described such processes as an attempt at integration of conflicting consequences for many stakeholders in time-pressured situations, which seems an apt conclusion when looking at our results. Interestingly, GPs in our interview sample seemed to perceive the considerations of patients self-referring to EDs because of access issues or a desire for reassurance as essentially legitimate, as compared to reasons of pure convenience. Understanding for anxiety-driven self-referrals has been correspondingly expressed by GPs in other studies [18]. The finding that both factors also feature prominently in the physician's decision-making may explain such judgement. Interestingly, while there is a considerable number of scientific literature on the phenomenon of non-urgent self-referrals, the role of GP

referrals of patients with non-urgent complaints has not been much evaluated or discussed before, and there is no scientific data quantifying the extent of this phenomenon. Previous studies have suggested that hospital referral rates vary considerably between GPs [54], which cannot not be comprehensively explained with the body of available evidence [55]. Concerning the underlying reasoning actually leading up to a referral, our data gives a unique insight into potentially underestimated triggers of ED consultations.

While physicians ascribed a comparably minor role to convenience issues, the main criticism was notably directed at health literacy and patient's competence to assess their own symptoms, and therefore at the cognitive and emotional process leading up to the decision to consult, rather than at the decision itself. In the interviews, patients were frequently attested deficiencies in adequately appraising their situation as dangerous or harmless. In this context, internet health information was seen as potentially deleterious to already scared patients. Concern in health care professionals about "disinformation despite information overflow" has been reported by others [56]. Correspondingly, a higher utilization of EDs and hospital services by people with low health competence could be shown in international studies [23, 57], and also a larger proportion of potentially avoidable consultations in such patients [24]. In our interviewee's statements, the conceived preponderance of younger patients in regard to low health competency and subsequent non-adequate ED visits was quite notable. Other works seem to hint at the genuineness of this perceived phenomenon, finding a higher rate of non-urgent consultations in the young in their quantitative evaluations [58, 59]. While higher internet use and consumption of online information in younger age groups is an undeniable fact [60], the causal role of media consumption on the path to low health competency voiced in some of our interviews must be considered conjecture, as there is no scientific corroboration. However, the statements relate a „felt" connection between two modern-age phenomena. GPs stressed their own role as key health educators in this context. Interestingly, the presumed phenomenon of younger patients constituting a main group of non-urgent ED utilizers is not consistently supported throughout the literature, and other works have stressed the role of chronically ill patients as a high-utilizing population [17, 61]. However, as qualitative studies are not suited to give any estimation regarding prevalence or proportions, we can only relate the impression gained from our interviews here. A conceivable explanation for the comparable dominance of the aspect "young people's consultations" may be that ED visits by the chronically ill could be perceived by the GPs as altogether legitimate, whereas non-urgent ED consultations by the young – and

otherwise healthy – might be more “memorable“ when prompted to think about self-referrals, as they were judged critically.

Strengths and limitations

Our study paints a complex and comprehensive picture of patient’s motives for self-referral and GP referral motives from the provider perspective. Interviews gave detailed and profound accounts of GP’s perceptions of their patient’s motives and their own thought processes leading to ED referrals. Our results allow relating and comparing both sets of motivations and corresponding decision-making processes.

We are aware that deriving patient’s motives from provider interviews poses the problem of secondhand assumptions and conjecture. However, there also are some important benefits of this approach: Firstly, GPs have experience with a very large number of patients and are not centered on a single case, allowing them a more global and analytical perspective. Secondly, providers intimately know the mechanisms and structures of the health care system, which is important to understand the process of utilization. As GPs frequently care for their respective patients for many years, they know a lot about their thoughts and decision processes, but are also able to give insights into the role of health competencies. Naturally, this perspective is limited to patients who at least occasionally visit GP practices, and not all ED patients may do so.

Researcher and interviewer bias can never be completely excluded, but we strived to minimize any unwitting influence of our own hypotheses and opinions by constant reflection and peer-review of our research process. Additionally, independent coding was performed to enhance reliability and reveal alternative interpretations. Concerning limitations of our study, the rather cognitive nature or our interview questions should be addressed, as this could have potentially impeded interviewees from revealing deeper layers of personal thoughts and feelings. A member-check was not performed. The composition of the sample could also have influenced the results: only physicians in an age range of 44 to 64 years were interviewed, and we do not know whether younger GPs might have different reasons for referral. However, as the mean age of GPs in Germany is 55 years [62], our sample reflects the demographics of the target group.

Transferability to other settings is also an issue. The metropolitan setting of Berlin might have influenced the results, as health care structures are abundant and close-meshed. This

is true for both EDs and physician's practices – patient's choices might be much more limited in rural areas, which could have an impact on decision-making. However, earlier studies hint at a fundamental concordance of considerations in less urbanized settings [13]. It must also be noted that access to health care services depends markedly upon the structures and organization of the local and national health system, and our results may reflect the specifics of our setting. In Germany, neither access to GPs, specialist practices or EDs is restricted in any way, patients can choose freely. Some practices may be appointment-only, others might accept walk-ins. Germany has neither a gatekeeping system nor rules for attachment of patients to specific practices, except within some disease management programs. Therefore, in other settings, consultation patterns might differ.

CONCLUSIONS

In the provider's view, patient's decision to self-refer to an ED results from a complex set of motives. Besides the overt central role of severity and acuteness of symptoms, a perceived lack of alternative care offers and a prevalent desire for reassurance emerged as important factors that are mirrored in the GP's considerations when deciding about an ED referral. If a patient's decision is based on a rationale corresponding to the physician's own reasoning, an ED self-referral may be perceived as comparably legitimate by providers, even if the case may not qualify as a genuine emergency in a medical sense. In this regard, it must be stressed that "emergency markers" like symptom severity and urgency can only partly explain ED consultations, as decision-making for both self-referrals and GP referrals is the result of an intricate set of considerations of medical, psychological, social and organizational nature.

Concerning the desire for reassurance, physicians ascribe a potentially escalating effect to information obtained from the media and the internet, especially in younger patients. A focus on appropriate health education could hold promise when aiming to reduce non-urgent ED consultations. In this regard, primary care providers are in a key position that may allow them a special opportunity to actually make a difference.

Organizational restrictions of the health care system – like appointment problems and practice closure times – also strongly influence both patient's and GP's decision-making. Provisions to ensure easier and faster access to diagnostics in the ambulatory sector might make both patients and GPs more comfortable with a decision not to immediately turn to the

hospital sector. Naturally, the feasibility, acceptance and impact of such measures needs to be evaluated in future studies.

List of abbreviations

GP General Practitioner

ED Emergency Department

DECLARATIONS

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Author contributions

MM initiated the research network “EMAnet”, he also is principal investigator and speaker of the umbrella project. LS is deputy co-speaker of EMANet. FH and CH designed the subproject “EMACROSS”, including quantitative and qualitative modules. SO and FH developed the study protocol including research questions and methods of evaluation of the qualitative study module. SO recruited participants, carried out the interviews and transcribed audio files. SO and FH analyzed and interpreted the data. MS reviewed the category system. SO drafted the manuscript for this paper. FH and CH revised the manuscript. SO and FH drafted the final version. MS, MM and LS critical revised the manuscript. All authors read and approved the final manuscript.

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Competing interests

All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf and declare: besides the grant specified in the funding declaration, no support from any organization for the submitted work; no financial relationships with any organizations that might have an interest in the submitted work in

the previous three years; no other relationships or activities that could appear to have influenced the submitted work.

Ethics approval and consent to participate

The study was approved by the ethics committee of Charité – Universitätsmedizin Berlin (EA1/361/16). Informed consent was obtained from all participants.

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No additional data are available.

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Reporting checklist for qualitative study.

Based on the SRQR guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

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In your methods section, say that you used the SRQR reporting guidelines, and cite them as:

O'Brien BC, Harris IB, Beckman TJ, Reed DA, Cook DA. Standards for reporting qualitative research: a synthesis of recommendations. Acad Med. 2014;89(9):1245-1251.

	Reporting Item	Page Number
#1	Concise description of the nature and topic of the study identifying the study as qualitative or indicating the approach (e.g. ethnography, grounded theory) or data collection methods (e.g. interview, focus group) is recommended	1
#2	Summary of the key elements of the study using the abstract format of the intended publication; typically	1

		includes background, purpose, methods, results and conclusions	
2Problem formulation	#3	Description and signifcance of the problem / phenomenon studied: review of relevant theory and empirical work; problem statement	3-4
Purpose or research question	#4	Purpose of the study and specific objectives or questions	3-5
Qualitative approach and research paradigm	#5	Qualitative approach (e.g. ethnography, grounded theory, case study, phenomenolgy, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g. postpositivist, constructivist / interpretivist) is also recommended; rationale. The rationale should briefly discuss the justification for choosing that theory, approach, method or technique rather than other options available; the assumptions and limitations implicit in those choices and how those choices influence study conclusions and transferability. As appropriate the rationale for several items might be discussed together.	5-7
Researcher characteristics and reflexivity	#6	Researchers' characteristics that may influence the research, including personal attributes, qualifications / experience, relationship with participants, assumptions and / or presuppositions; potential or actual interaction between researchers' characteristics and the research	6

		questions, approach, methods, results and / or transferability	
Context	#7	Setting / site and salient contextual factors; rationale	5-7
Sampling strategy	#8	How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g. sampling saturation); rationale	5-7
Ethical issues pertaining to human subjects	#9	Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	7, 21
Data collection methods	#10	Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources / methods, and modification of procedures in response to evolving study findings; rationale	6-7
Data collection instruments and technologies	#11	Description of instruments (e.g. interview guides, questionnaires) and devices (e.g. audio recorders) used for data collection; if / how the instruments(s) changed over the course of the study	6-7
Units of study	#12	Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	5-6

Data processing	#13	Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymisation / deidentification of excerpts	7-8
Data analysis	#14	Process by which inferences, themes, etc. were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale	7-8
Techniques to enhance trustworthiness	#15	Techniques to enhance trustworthiness and credibility of data analysis (e.g. member checking, audit trail, triangulation); rationale	7-8, 17
Syntheses and interpretation	#16	Main findings (e.g. interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	8-13
Links to empirical data	#17	Evidence (e.g. quotes, field notes, text excerpts, photographs) to substantiate analytic findings	11-13
Intergration with prior work, implications, transferability and contribution(s) to the field	#18	Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application / generalizability; identification of unique contributions(s) to scholarship in a discipline or field	13-17

Limitations	#19	Trustworthiness and limitations of findings	17-18
Conflicts of interest	#20	Potential sources of influence of perceived influence on study conduct and conclusions; how these were managed	20
Funding	#21	Sources of funding and other support; role of funders in data collection, interpretation and reporting	20

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How to decide adequately? Qualitative study of GPs' view on decision-making in self-referred and physician-referred emergency department consultations in Berlin, Germany

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ABSTRACT

- **Objectives:** Patients with acute symptoms present not only to general practitioners (GPs), but also frequently to emergency departments (EDs). Patients' decision processes leading up to an ED self-referral are complex and supposed to result from a multitude of determinants. While they are key providers in primary care, little is known about GPs' perception of such patients. This qualitative study explores the GPs' view regarding motives and competences of patients self-referring to EDs, and also GPs' rationale for or against physician-initiated ED referrals.
- **Design:** Qualitative study with semi-structured, face-to-face interviews; qualitative content analysis.
- **Setting:** GP practices in Berlin, Germany.
- **Participants:** 15 GPs (f/m: 9/6; mean age 53.6 years).
- **Results:** Interviewed GPs related a wide spectrum of factors potentially influencing their patients' decision to visit an ED, and also their own decision-making in potential referrals. Considerations go beyond medical urgency. Statements concerning patients' surmised rationale corresponded to GPs' reasoning in a variety of important areas. For one thing, the timely availability of an extended spectrum of diagnostic and therapeutic options may make ED services attractive to both. Access difficulties in the ambulatory setting were mentioned as additional triggers for an ED visit initiated by patient or GP. Key patient factors like severity of symptoms and anxiety also play a major role; a desire for reassurance may lead to both self-referred and physician-initiated ED visits. Patients' health competence was prevailingly depicted as limited, with the internet as an important influencing factor. Counseling efforts by the GP were described as crucial for improving health literacy.
- **Conclusions:** Health education could hold promise when aiming to reduce non-urgent ED consultations. Primary care providers are in a key position here. Amelioration of organizational shortages in ambulatory care, e.g. limited consultation hours, might also make an important impact, as these trigger both self-referrals and GP-initiated ED referrals.

ARTICLE SUMMARY

Strengths and limitations of this study

- This qualitative study explores the perspective of primary care providers on self-referred and physician-initiated ED consultations.
- Interviews gave detailed and profound insights into decision-making processes and the underlying complex set of considerations.
- A particular feature of the study is the incorporation of the provider perspective on both patients' and physicians' motivations leading up to ED consultations.
- Deriving estimations of patients' motives from provider interviews is prone to conjecture, hence a measure of caution is warranted in regard to inferences.
- Although ED crowding is an international phenomenon, transferability of study results to other settings may be limited, as characteristics of the health care system and the specifics of the metropolitan location have influence on consultation patterns.

INTRODUCTION

Patterns of healthcare utilization are in transition. Especially in metropolitan settings like Berlin, patients often utilize more than one care sector and may present either to their GP or to a hospital ED in case of acute symptoms [1, 2]. Out-of-hours care in Berlin is principally provided by statutory health insurance physicians, services include a triage and counseling hotline, a home visit service and two hospital-based urgent care centers. More severe emergencies are handled by the Fire Brigade's ambulance rescue service. However, patients are at liberty to self-refer to a hospital ED anytime, without having to call a hotline or consult a GP before. While part of these patients may in fact be severely ill and subsequently require inpatient treatment, a large proportion of ED visits results in exclusively ambulatory treatment [3]. ED utilization by non-urgent patients represents a growing phenomenon, contributing to crowding and time shortage in ED workflow [4, 5], as such patients tie up resources and may even endanger timely treatment of critically ill patients [6-9]. Scientific data suggests a detrimental effect of ED crowding and subsequent longer ED waiting times on hard endpoints like short-term mortality of both patients admitted to hospital and ED outpatients. Thus, the potential impact of efforts to reduce ED utilization by non-urgent cases is substantial, as such are considered to account for a high proportion (up to >60%) of ED patient load, depending on study and setting [10-12]. In Germany, the current true total number of emergency department treatments is quite difficult to estimate, as there are no official comprehensive nationwide statistics [13]. However, the data sources available suggest a steady rise in total ED consultations over a decade [14], and also a growing proportion of ED outpatient treatments [14, 15].

Consultation reasons of self-referring patients have been evaluated in a number of recent studies [10, 16-19], and utilization is considered to result from a complex set of motivations, encompassing a lack of connection to continuous primary care, the convenience of low-threshold ED access or the surmised availability of advanced diagnostic options in the hospital setting [19-21]. Nescience concerning alternative care facilities for acute illness – or the lack of such alternative offers in the ambulatory care sector – may also play a role for patients self-referring to ED [13, 22], as well as patients' health literacy, which is an important prerequisite for appraising their own symptoms adequately [23, 24].

There are comparatively few current publications on the views of primary health care providers [18, 21, 25-27] regarding patient-initiated ED consultations, which is surprising

considering the GP's key position in patient care and also her or his potentially substantial influence on decision-making [28].

However, there is an important additional trigger of ED visits that is less frequently focused: utilization does not only depend on patients' self-referral behavior, but may also be initiated by primary care physicians referring some of their patients to a hospital ED. Interestingly, there is very limited literature concerning GPs' decision-making processes when ruling for or against referrals. However, previous studies suggest that knowledge about a patient's personal background as well as the physician's gut feeling play a role, besides the mere assessment of signs and symptoms [29]. Personal characteristics of GPs, like cautiousness vs. readiness to take risks, are as well discussed as influencing factors on referral decisions [30, 31], as are social issues and other factors of contextual pressure [32]. Considering the literature, it is also quite unclear to what extent GPs may potentially decide to refer non-urgent cases to EDs, and why they might do so.

In this study, we therefore wanted to investigate the twofold problem of self-referral and GP-initiated referral to EDs. The aim was to better understand the motivations and decision-making processes of patients and GPs in regard to ED self-referrals and physician-initiated referrals by a qualitative evaluation of the provider perspective. Looking at the patients' and GPs' motives, we considered it highly interesting to further assess these in regard to conceivable parallelism, as such has not yet been scientifically addressed to our knowledge. The exploration of this aspect therefore constitutes a particular aim of this study. Furthermore, the situation of self-referrals being discussed as a contributor to ED crowding [33] leads up to the very interesting question of whether patients are actually in a capacity to adequately decide on the appropriateness of utilization, e.g. depending on individual health literacy [24]. This is why we decided to additionally focus on this aspect.

Consequentially, the main research questions for this study were: What do GPs think about their patients' motives for self-referring to an ED? How do GPs judge patients' capacity to make an adequate decision for or against visiting an ED in acute situations? What are GPs' considerations when initiating referrals to such facilities themselves? As we aimed to gather in-depth insights and thoroughly explore GPs' views, a qualitative study design was deemed appropriate.

METHODS

Study context

This qualitative interview study is a module of the mixed-methods research project "EMACROSS", part of the Berlin-based health services research network EMANet. EMACROSS aims to evaluate the characteristics, motivations and utilization patterns of patients consulting one of eight EDs in Berlin-Mitte, the district in the city center of Berlin, Germany. For further details of rationale and design, please refer to the German Clinical Trials Register (trial registration number: DRKS00011930) [34]. The quantitative study module consists of a repeat questionnaire survey of ED patients complemented by an analysis of hospital records. While this quantitative part of the project focuses on respiratory diseases as a model condition, we did not restrict our research questions to a single health problem for the qualitative study module presented here. Study design and results are reported in line with the SRQR guidelines [35].

Sampling and participants

Participants were sampled purposively. We aimed to achieve a diverse sample in regard to age groups, length of professional experience and number of patients per practice. We aimed to diversify our sample according to a set of characteristics that were considered to have a possible influence on the interviewee's stance, in order to cover a wide spectrum of views. Physician gender has been described as an influencing factor on referral decisions, as well as personal risk tolerance [30]. From a theoretical point of view, risk tolerance might be conceivably associated with characteristics like length of professional experience and physician's age, while there is no literature to prove or discard this. Professional experience might also have influence on the GP's insight into patients' motives, which is grounded on her or his personal experience with a larger – or smaller – number of patients treated in the course of her or his career. GPs were recruited (SO) from the GP research network of the Institute of General Practice that is also part of the EMANet consortium. Potential interviewees were sent an information sheet on the study; participants were selected from the pool of responders. The sample consisted of nine female and six male GPs, details of the sample are provided in **Table 1**.

Table 1 Characteristics of interviewees (n=15)

Study ID	Gender (f/m)	Age at time of interview	Work experience as	Patients per quarter year

		(years)	a GP (years)	
GP1	f	46	3	1000
GP2	m	59	28	1600
GP3	m	48	1	1100
GP4	f	58	26	1150
GP5	f	64	24	650
GP6	f	52	12	1100
GP7	f	61	13	375
GP8	m	56	24	1700
GP9	m	53	9	750
GP10	m	44	4	1250
GP11	m	60	27	1200
GP12	f	51	9	1850
GP13	f	53	14	900
GP14	f	54	8	750
GP15	f	45	13	1150
Mean	-	53.6	14.3	1100
Median	-	53	13	1100

f: female; m: male

Data collection

A semi-structured interview guide with open questions was developed to obtain in-depth, detailed accounts of GPs' perspectives [36]. The basic structure of the first draft was based on the literature [16-19, 21, 22, 24, 31] and the researchers' knowledge of the subject (SO and FH; SO is a health scientist and FH is a GP). Questions were intended to generate interview content suitable to answer the study research questions. The guide was then discussed in an interdisciplinary working group for qualitative methods and subsequently adapted. After a first set of interviews, it was revised again according to the experiences gained. Final structure of the interview guide was determined after the third interview (see excerpts in **Box 1**). Interviews were conducted in the interviewees' practices in Berlin between July and September 2017 (SO). Participants' written informed consent was obtained a priori. Interviews were audio-recorded and transcribed verbatim (SO), all

transcript data was pseudonymized. To document atmosphere, interaction, particularities and potential disturbances, field notes were taken throughout the interview process (SO). Data collection was concluded once no more new topics and viewpoints emerged and content therefore was deemed saturated [37]. This was achieved after 15 interviews.

Box 1 Examples of questions from the interview guide

What do you think are the motives of patients for seeking care in an ED?
What do you think about your patients' capacity to make an adequate decision for or against visiting an ED in a case of potential emergency?
Which patients do you refer to the ED and how do you decide?
What are your intentions when referring there?
Can you imagine situations in which you might send patients to the ED who are not severely or threateningly ill?

Questions could be individually adapted to the conversation flow of the respective interviews. Complete interview guideline is available from the authors upon request.

Data analysis

We conducted qualitative content analysis [38]. This approach was favored due to its suitability for describing and understanding social reality, while other conceivable methods (e.g. grounded theory) might be more appropriate for purposes of theory generation [39]. A first basic structure of the coding tree was based on the topics of the interview guide, which itself had been the result of a deductive process. Additional categories were derived from the interview material inductively during coding. The combination of both approaches allows taking into account both theoretical considerations and aspects and perspectives voiced in the interviews [40, 41]. For all categories, clear definitions, coding rules and anchor examples were formulated. SO reviewed and coded all interviews. For transcribing, coding and analysis, the qualitative data management software MAXQDA (Versions 12 and 2018) was used.

Strategies to enhance trustworthiness

The category system was repeatedly reviewed and discussed within the research team and additionally with an experienced qualitative researcher (MS) from EMANet not directly involved in data collection and analysis. Independent coding was performed by another researcher (FH), results and potential discrepancies in interpretation were discussed in the team. To further prevent involuntarily influencing interpretation of material by implicit

expectations and presuppositions of the researchers involved [42], coding and interpretation were peer-reviewed within the interdisciplinary qualitative methods working group to enhance credibility.

Patient and public involvement

Patients were not involved in the design and conduct of the study. Participants were asked whether they would like to receive a report on the study's findings. Study results will be disseminated to interviewees who desired such.

RESULTS

In the following results section, we first present data on patients' motives for self-referral and GPs' referral motives, structured by common themes that emerged during analysis. A further subsection will demonstrate the results regarding GPs' assessment of patients' capacity to decide adequately about an ED consultation. The research aim of exploring possible congruities of motives on the patient and physician side will be addressed in the discussion section.

Patients' motives for self-referral and GPs' referral motives

Three principal themes emerged during analysis of interview data concerning GPs' views of patients' presumed self-referral motives and the passages on GPs' reasons for referrals to EDs: "attractiveness of emergency department care", "patient-specific factors" and "organizational issues". Corresponding quotes are presented in **Table 2**.

Attractiveness of emergency department care

Patients' motives for self-referral: Interviewed GPs considered the attractiveness of the ED due to availability of timely and comprehensive diagnostic and treatment options – as compared to the services usually provided in GP practices – a major factor for self-referred ED utilization. Some stressed that patients may believe in better, safer and more advanced procedures provided in the hospital. Further occasionally mentioned factors were the constant availability of the ED and the surmised presence of specialists there, as compared to generalist services provided in primary care. Convenience reasons apart from the aforementioned comprehensiveness and ready availability of diagnostics were also addressed, but altogether seemed not to be considered a pivotal trigger for self-referrals by most interviewees. A few mentioned surmised consultation reasons like

patients' desire to avoid the hassle of making an appointment at a doctor's office. Some GPs also presumed that in case of practice closure at their own practice, certain patients might prefer the ED to spare themselves the trouble of arranging a consultation at an alternative GP practice. The phenomenon of patients seeking out-of-hours ED care specifically for convenience reasons (e.g. after finishing work) was also addressed critically, but only by few participants. Concerning appropriateness of ED utilization, a number of GPs criticized a questionable and excessive sense of entitlement in some patients, particularly regarding the availability and responsibility of the ED in non-emergency cases.

GPs' referral motives: Many GPs reported to send patients to the ED if they would consider them in need of diagnostic procedures or treatment not available in the primary care setting, for example for confirmation or exclusion of a suspected – and potentially threatening – diagnosis. Some GPs especially stressed the fact that hospital infrastructure might allow for a more speedy workup. For a majority of GPs, EDs are the "port of call" where to send patients if they would want them admitted to inpatient care.

Patient-specific factors

Patients' motives for self-referral: In the GPs' experience, acute onset or perceived rapid deterioration of symptoms were important triggers for self-referral. This aspect was mentioned in a majority of interviews. Such ED consultations were judged by the interviewees as legitimate, as they may indicate "real emergencies". Many of the interviewed GPs stressed the important role of "perceived severity of illness" and "anxiety" as reasons for visiting the ED, especially in chronically ill patients. Anxiety in a subjectively threatening situation was frequently described as influenced by patients' personality traits, for example a high sensitivity to physical symptoms. The issue of anxiety triggered or augmented by media reports about serious illness or dangerous complications was discussed in this context. A number of interviewees considered this especially a problem in younger patients. GPs surmised that such patients visit the ED for quick and thorough reassurance, a second opinion on their symptoms or other kinds of health information, while in fact not being in any dangerous situation health-wise. Other patient-specific self-referral reasons mentioned in the interviews encompassed a possible lack of trust of the patient in her or his GP, or even doubt about the primary care provider's competency.

GPs' referral motives: A majority of GPs reported to refer in cases of acute and severe symptoms, a subject already broached in the "attractiveness of emergency department care" section above. However, it was notable that domestic care situation was another major point of consideration for some of the interviewed GPs when deciding for or against hospital referral, as well as factors like frailty or limited mobility, which might impede adequate outpatient management, even in cases where the health situation would usually not require an ED referral.

Organizational issues

Patients' motives for self-referral: Access problems in the ambulatory care sector were quite frequently addressed in the interviews. GPs problematized the limitation of consultation hours in primary care and in specialist doctors' offices, driving patients to the ED off-hours in lack of an alternative. Notably, this seemed not to be perceived as a "convenience issue", but as a problem of availability. In the GPs' experience, patients with acute symptoms or increasing worries feeling in need of urgent investigation or reassurance might see no other option than presenting to an ED off-hours. Length of appointment waiting times at specialist practices was also problematized: GPs criticized that some ambulatory medical specialists' schedules may be booked out for months in advance. Patients' hope of being seen by a physician of the desired specialty more quickly – or at all – might then drive them to an ED self-referral. It was also mentioned that the ED offers a low-threshold access to health care for patients not regularly attached to a GP practice.

GPs' referral motives: Some GPs reported to more frequently refer patients to hospital prior to the weekend or on days when practices might close, and no further outpatient diagnostic investigations might be possible on the day or the following days. One GP indicated that she sometimes felt forced to refer acutely ill patients to the ED if she would not succeed in arranging a necessary appointment at a specialist's practice.

Table 2 Quotes – Patients' motives for self-referral and GPs' referral motives

	Patient's motive	**GP's motive**
Attractiveness of emergency department	"[...] because they think that they get everything quickly in the ED, which they do not have instant access to in the	"I refer to the ED only in situations that are no longer manageable in the outpatient sector." (GP 12)

care	outpatient sector […].” (GP 10) “Meaning, that they can go there anytime [...].” (GP 9) “They believe that the real specialists […] are in the hospital.” (GP 12) “[...] because they do not have the time or might just not feel like sitting down in the GP’s waiting area.” (GP 15) “[…] patients go to the ED because they don't want to wait for an appointment.” (GP 13)	“If there is another acute exacerbation […] this patient belongs in the hospital, because the guidelines say so for such constellations […].“ (GP 8) “If I would have to wait 24 hours for my laboratory results […] and my differential diagnosis is potentially life-threatening, then I send to the ED.” (GP 14) “If I really need either rapid tests or clinical parameters that I can't ascertain here.” (GP 8)
Patient-specific factors	“Usually they are suffering from acute symptoms [...]. Such are situations that cannot be coped with at home […]. Then my patients go to the hospital […].” (GP 5) “Then of course, because they experience something acute, which scares them.” (GP 6) “[...] the age of the patient plays a role. Young people are much more hectic and much more afraid [...].” (GP 8) “I do believe that it plays a role [...] in making the decision: "I won't go to my GP, but straight to the ED". Which of course signifies that the doctor-patient relationship and the bond of trust with the GP is not so good.” (GP 11) “Suddenly they all come and have something. There was something on TV again [...]. In my view, they scare patients there.” (GP 4)	“And I always decide to refer to the ED when my gut tells me “attention, attention, this is dangerous, acutely dangerous”. […] – for me, the criterion is “acutely dangerous for the person affected.““ (GP 11) „And this patient came to the practice with most severe dyspnea during the week, […]. I experienced him as […] severely ill.“ (GP 14) “It plays a role in the decision, how is the patient’s care situation at home? […] Is care ensured? And if it is not ensured, in case of an acute event, he has to be admitted to hospital.” (GP 2) “Sometimes it is an issue, with very frail patients, who are not able to organize themselves, […] you know this will not work in the outpatient situation.“ (GP 7)
Organizational issues	“There are always times when I'm not here. It is Tuesday afternoon now, my practice closed at 2 pm today. Where do the patients go? They go to the ED.” (GP 12) "[...] if it's a strong cough [...] I must be	“[…] when there is no other option to get this resolved in the outpatient sector prior to the weekend.“ (GP 3) „I think we have a massive problem at the moment, the problem of “finding appointments with specialist”. Patients

	able to go to my doctor on the same day. And if I can't, because I'm denied access, I'll go to an ED." (GP 13) "There are people who may not even have a GP [...]. It may seem the easiest option for them." (GP 13)	wait very long […]. This can result in me having to send them to hospital […]." (GP 4)

Patients' capacity to make an adequate decision

Interviewees' views regarding the capacity of their patients to make a proper decision on where to go with a perceived health problem were quite heterogeneous. Corresponding quotes are presented in **Table 3.** In the majority of the interviews, GPs tended to judge patients' general ability to assess their own symptoms adequately as poor, and many were of the impression that such competences were currently in decline. The perceived deficiency in judgment of patients' own health status was frequently stressed as an important reason for non-urgent ED consultations. The internet as a source of health information was seen very critically in this context, as online information might have a negative impact on patients' disease perception. Patients' ability to adequately process and assess information consumed from media sources was frequently deemed limited. Some interviewees stressed the potential escalating effect of frightening information, especially on already anxious patients. The widely perceived lack in patients' competence in regard to health matters despite abounding information was frequently attributed to a deficiency in health education and even basic medical knowledge especially ascribed to younger patients. Some GPs remarked that in addition to individual health literacy, patients' respective social environment also may have great influence on how they perceive and appraise their symptoms. The crucial role of the doctor-patient relationship and the importance of the GP as a key health educator were also stressed. Counseling and health education by the individual patient's GP were mentioned as having a potentially de-escalating effect, as these may help patients not to over-interpret their symptoms. Some GPs also stressed the importance of educating their patients about the function of the ED vs. the GP after a non-urgent visit to avert similar events in the future.

Table 3 Quotes – Patients' capacity to make an adequate decision

"Not very good, I would say [...]. Patients cannot assess this [...]. The patients have zero competence there." (GP 9)

"[...] as far as the younger patients are concerned, only 25 percent make the right decision. The general direction is: emergency services are visited much too quickly or hectically, although in fact it may not be really necessary." (GP 8)

"Like I said, nowadays they "google" and then: "This is very bad, can get very bad […] and this must be resolved on a Saturday or Friday evening." (GP 8)

"[...] the older ones [...] I rarely see them going there without an emergency, I say. [...]. They more often go to EDs in cases where I would say "Well, these are indications that actually belong in an ED [...]."

"I think, old patients, the old grandma, the grandpa, who thinks three times before he decides to visit a doctor. He'll wait until it doesn't work anymore." (GP 10)

"In this context it is important to me to evaluate the GP's role differently. I believe that we are the ones who have long-standing and in part intensive relationships with our patients. We are probably the ones who can achieve the most, because we can steer the patients strongly, much better than any other medical specialist can." (GP 5)

"The more I explain, the more the patient knows. The more he knows, the more competent he becomes [...]. If I explain well, people are more competent. And health education is important [...]." (GP 1)

"[...] the most important thing is de-escalation policy [...], to put banalities into perspective. Not to over-interpret things and not to stir up anxieties. Because this eventually drives people to the doctor […]." (GP 1)

DISCUSSION

In the interviews, GPs depicted a wide spectrum of factors potentially influencing their patients' decision to visit an ED, and also their own decision-making process in possible referrals. Common themes concerned the attractiveness of EDs due to constant and instant availability of an advanced diagnostic and therapeutic spectrum, and patient-specific factors like severity and acuity of symptoms as well as health-related anxiety and a need for reassurance. Organizational shortcomings of practice-based ambulatory care, e.g. appointment problems, were also raised as potential triggers for ED utilization. Patients' health competence and capacity to decide adequately were frequently depicted as limited, and the impact of health information derived from media sources was seen very critically.

Corresponding factors in patients' and GPs' decision-making

Severity and acuity of symptoms

Justifiably, severity and acuity of symptoms were seen as major triggers of ED consultations, as depicted in the "attractiveness of emergency department care" and

"patient-specific factors" themes. Much has been written about patients and GPs turning to the hospital sector in cases of severe or potentially dangerous symptoms [10, 18, 43, 44], which is not surprising – and altogether adequate – considering the ED's purpose. However, in the GPs' view, both reasons for self-referral and physician-initiated referral go far beyond the medical question "emergency or not", and it is very interesting that a number of additional considerations may actually also correspond to each other. As such conceivable parallel factors have not been discussed before in-depth, they warrant special emphasis.

Perceived shortage of alternative options

Patients as well as GPs might turn to the hospital sector for – real or perceived – lack of alternative ports of call for timely diagnostic procedures or specialist consultations. Access problems in the primary care sector have been described as an important trigger for ED visits in a number of previous works [45-47]. In our study, unavailability of practice services of both GPs and medical specialists during weekends and off-hours was problematized as leading to both self-referred and physician-initiated ED visits. Crowding of specialist practices may also make GPs feel forced to refer patients. The identification of lack of access in the outpatient sector as a key factor for patients' decision-making is in line with the results of Durand et al. [21], who interviewed ED health care professionals and patients. The situation of patients visiting EDs because they do not have a regular GP – or may not be able to visit her or him for a variety of reasons – was also described by others [17, 27].

Internationally, a variety of measures to improve out-of-hours care for less urgent acute patients have been evaluated. In the Netherlands for example, EDs and GP cooperatives have created Emergency Care Access Points (ECAP), where patients are triaged under GP supervision and steered to either GP or ED care, thus avoiding direct patient self-referral to EDs [48]. This concept has been shown to reduce ED consultations considerably [49], and evidence for GP cooperatives as an effective concept is convincing [50]. A "single-desk" access point model for acute care comparable to the ECAP has been proposed for Germany in a recent expertise by the government-appointed "Advisory Council on the Assessment of Developments in the Health Care System" [51]. Some authors have however raised concerns regarding the cost-effectiveness of entirely new service models for out-of-hours care, as such might ultimately increase demand, while simple extension of GP opening hours might be a resource-sparing alternative [52].

Desire for reassurance and the role of health literacy

A wish for reassurance emerged as another important factor that might prompt both a self-referred and a GP-initiated ED consultation. For one thing, GPs considered health-related anxiety a principal reason for ED self-referrals, as patients perceive themselves as emergencies urgently needing attention. Anxiety as a driving motive for ED consultations was described in a substantial number of international studies [17, 21, 22, 53]. A state of anxious concern regarding patients' general health – beside the worry caused by unclear acute symptoms – was described as an important factor. Correspondingly, the GPs in our sample stressed both the importance of the subjectively threatening acute symptoms and also the general trepidation in regard to potential serious disease or complications. This corresponds to a recent survey by Scherer et al. [11]. Regarding physicians' decision-making, the motivations attested to anxious patients are reflected in the doctors' desire for having the patients' care ensured while not being available as a provider, for example when considering whether to admit patients prior to the weekend. Interviewees described how they would consider factors like patients being elderly, frail, or alone at home – situations in which physicians might feel anxious that ambulatory management may not suffice to ensure comprehensive care. As already mentioned, previous studies have also discussed the role of factors like GPs' personal experience and personality traits – like level of cautiousness and apprehensions about the consequences of the decision not to admit [31]. Interestingly, such aspects were not overtly addressed by our sample, but may be veiled in descriptions of decisions to refer to EDs to assure care, e.g. prior to weekends.

The few available published studies on GPs' reasoning when deciding about a potential referral suggest that decisions usually result from a complex process of consideration, taking into account many factors beside the medical necessity [31, 44]. Dempsey et al. [32] described such processes as an attempt at integration of conflicting consequences for many stakeholders in time-pressured situations, which seems an apt conclusion when looking at our results. Interestingly, GPs in our interview sample seemed to perceive the considerations of patients self-referring to EDs because of access issues or a desire for reassurance as essentially legitimate, as compared to reasons of pure convenience. Understanding for anxiety-driven self-referrals has been correspondingly expressed by GPs in other studies [18]. The finding that both factors also feature prominently in the physicians' decision-making may explain such judgment. Interestingly, while there is a

considerable amount of scientific literature on the issue of non-urgent self-referral, the role of GP referrals of patients with non-urgent complaints has not been much evaluated or discussed before, and there is no scientific data quantifying the extent of this phenomenon. Previous studies have suggested that hospital referral rates vary considerably between GPs [54], which cannot be comprehensively explained with the body of available evidence [55]. Concerning the underlying reasoning actually leading up to a referral, our data gives a unique insight into potentially underestimated triggers of ED consultations.

While interviewed physicians ascribed a comparably minor role to convenience issues, the main criticism was notably directed at health literacy and patients' competence to assess their own symptoms, and therefore at the cognitive and emotional process leading up to the decision to consult, rather than at the decision itself. In the interviews, patients were frequently attested deficiencies in adequately appraising their situation as dangerous or harmless. In this context, internet health information was seen as potentially deleterious to already scared patients. Concern in health care professionals about "disinformation despite information overflow" has been reported by others [56]. Correspondingly, a higher utilization of EDs and hospital services by people with low health competence could be shown in international studies [23, 57], and also a larger proportion of potentially avoidable consultations in such patients [24]. In our interviewees' statements, the conceived preponderance of younger patients in regard to low health competency and subsequent non-adequate ED visits was quite notable. Other works seem to hint at the genuineness of this perceived phenomenon, finding a higher rate of non-urgent consultations in the young in their quantitative evaluations [58, 59]. While higher internet use and consumption of online information in younger age groups is an undeniable fact [60], the causal role of media consumption on the path to low health competency voiced in some of our interviews must be considered conjecture, as there is no scientific corroboration. However, the statements relate a „felt" connection between two modern-age phenomena. GPs stressed their own role as key health educators in this context. Interestingly, the presumed phenomenon of younger patients constituting a main group of non-urgent ED utilizers is not consistently supported throughout the literature, and other works have stressed the role of chronically ill patients as a high-utilizing population [17, 61]. However, as qualitative studies are not suited to give any estimation regarding prevalence or proportions, we can only relate the impression gained from our interviews here. A conceivable explanation for the comparable dominance of the aspect "young people's consultations" may be that ED

visits by the chronically ill could be perceived by the GPs as altogether legitimate, whereas non-urgent ED consultations by the young – and otherwise healthy – might be more "memorable" when prompted to think about self-referrals, as they were judged critically.

Strengths and limitations

Our study paints a complex and comprehensive picture of patients' motives for self-referral and GP referral motives from the provider perspective. Interviews gave detailed and profound accounts of GPs' views of their patients' motives and their own thought processes leading to ED referrals. Our results allow relating and comparing both sets of motivations and corresponding decision-making processes.

We are aware that deriving patients' motives from provider interviews poses the problem of secondhand assumptions and conjecture. However, there also are some important benefits of this approach: firstly, GPs have experience with a very large number of patients and are not centered on a single case, allowing them a more global and analytical perspective. Secondly, providers intimately know the mechanisms and structures of the health care system, which is important to understand the process of utilization. As GPs frequently care for their respective patients for many years, they know a lot about their thoughts and decision processes, and are also able to give insights into the role of health competencies. Naturally, this perspective is limited to patients who at least occasionally visit GP practices, and not all ED patients may do so.

Researcher and interviewer bias can never be completely excluded, but we strived to minimize any unwitting influence of our own hypotheses and opinions by constant reflection and peer-review of our research process. Additionally, independent coding was performed to enhance reliability and reveal alternative interpretations. Concerning limitations of our study, the rather cognitive nature or our interview questions should be addressed, as this could have potentially impeded interviewees from revealing deeper layers of personal thoughts and feelings. A member-check was not performed. The composition of the sample could also have influenced the results: only physicians in an age range of 44 to 64 years were interviewed, and we do not know whether younger GPs might have different reasons for referral. However, as the mean age of GPs in Germany is 55 years [62], our sample reflects the demographics of the target group.

Transferability to other settings is also an issue. The metropolitan setting of Berlin might have influenced the results, as health care structures are abundant and close-meshed. This is true for both EDs and physicians' practices – patients' choices might be much more limited in rural areas, which could have an impact on decision-making. However, earlier studies hint at a fundamental concordance of considerations in less urbanized settings [13]. It must also be noted that access to health care services depends markedly upon the structures and organization of the local and national health system and our results may reflect the specifics of our setting. In Germany, neither access to GPs, specialist practices or EDs is restricted in any way, patients can choose freely. Some practices may be appointment-only; others might accept walk-ins. Germany has neither a gatekeeping system nor rules for attachment of patients to specific practices, except within some disease management programs. Therefore, in other settings, consultation patterns might differ.

CONCLUSIONS

In the providers' view, patients' decisions to self-refer to EDs result from a complex set of motives. Besides the overt central role of severity and acuteness of symptoms, a perceived lack of alternative care offers and a prevalent desire for reassurance emerged as important factors that are mirrored in the GPs' considerations when deciding about ED referrals. If a patient's decision is based on a rationale corresponding to the physician's own reasoning, an ED self-referral may be perceived as comparably legitimate by providers, even if the case may not qualify as a genuine emergency in a medical sense. In this regard, it must be stressed that "emergency markers" like symptom severity and urgency can only partly explain ED consultations, as decision-making for both self-referrals and GP referrals is the result of an intricate set of considerations of medical, psychological, social and organizational nature.

Concerning the desire for reassurance, physicians ascribe a potentially escalating effect to information obtained from the media and the internet, especially in younger patients. A focus on appropriate health education could hold promise when aiming to reduce non-urgent ED consultations. In this regard, primary care providers are in a key position that may allow them a special opportunity to actually make a difference.

Organizational restrictions of the health care system – like appointment problems and practice closure times – also strongly influence both patients' and GPs' decision-making.

Provisions to ensure easier and faster access to diagnostics in the ambulatory sector might make both patients and GPs more comfortable with a decision not to immediately turn to the hospital sector. Naturally, the feasibility, acceptance and impact of such measures needs to be evaluated in future studies.

List of abbreviations

GP general practitioner

ED emergency department

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Author contributions

MM initiated the research network “EMANet”, he also is principal investigator and speaker of the umbrella project. LS is deputy co-speaker of EMANet. FH and CH designed the subproject “EMACROSS”, including quantitative and qualitative modules. SO and FH developed the study protocol including research questions and methods of evaluation of the qualitative study module. SO recruited participants, carried out the interviews and transcribed audio files. SO and FH analyzed and interpreted the data. MS reviewed the category system. SO drafted the manuscript for this paper. FH and CH revised the manuscript. SO and FH drafted the final version. MS, MM and LS critically revised the manuscript. All authors read and approved the final manuscript.

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Competing interests

All authors have completed the ICMJE uniform disclosure form at www.icmje.org/coi_disclosure.pdf and declare: besides the grant specified in the funding declaration, no support from any organization for the submitted work; no financial relationships with any organizations that might have an interest in the submitted work in

the previous three years; no other relationships or activities that could appear to have influenced the submitted work.

Ethics approval and consent to participate

The study was approved by the ethics committee of Charité – Universitätsmedizin Berlin (EA1/361/16). Informed consent was obtained from all participants.

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No additional data are available.

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Reporting checklist for qualitative study.

Based on the SRQR guidelines.

Instructions to authors

Complete this checklist by entering the page numbers from your manuscript where readers will find each of the items listed below.

Your article may not currently address all the items on the checklist. Please modify your text to include the missing information. If you are certain that an item does not apply, please write "n/a" and provide a short explanation.

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In your methods section, say that you used the SRQR reporting guidelines, and cite them as:

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	Reporting Item	Page Number
#1	Concise description of the nature and topic of the study identifying the study as qualitative or indicating the approach (e.g. ethnography, grounded theory) or data collection methods (e.g. interview, focus group) is recommended	1
#2	Summary of the key elements of the study using the abstract format of the intended publication; typically	1

		includes background, purpose, methods, results and conclusions	
2Problem formulation	#3	Description and signifcance of the problem / phenomenon studied: review of relevant theory and empirical work; problem statement	3-4
Purpose or research question	#4	Purpose of the study and specific objectives or questions	3-5
Qualitative approach and research paradigm	#5	Qualitative approach (e.g. ethnography, grounded theory, case study, phenomenolgy, narrative research) and guiding theory if appropriate; identifying the research paradigm (e.g. postpositivist, constructivist / interpretivist) is also recommended; rationale. The rationale should briefly discuss the justification for choosing that theory, approach, method or technique rather than other options available; the assumptions and limitations implicit in those choices and how those choices influence study conclusions and transferability. As appropriate the rationale for several items might be discussed together.	4-7
Researcher characteristics and reflexivity	#6	Researchers' characteristics that may influence the research, including personal attributes, qualifications / experience, relationship with participants, assumptions and / or presuppositions; potential or actual interaction between researchers' characteristics and the research	6

		questions, approach, methods, results and / or transferability	
Context	#7	Setting / site and salient contextual factors; rationale	4-7
Sampling strategy	#8	How and why research participants, documents, or events were selected; criteria for deciding when no further sampling was necessary (e.g. sampling saturation); rationale	4-7
Ethical issues pertaining to human subjects	#9	Documentation of approval by an appropriate ethics review board and participant consent, or explanation for lack thereof; other confidentiality and data security issues	6, 20
Data collection methods	#10	Types of data collected; details of data collection procedures including (as appropriate) start and stop dates of data collection and analysis, iterative process, triangulation of sources / methods, and modification of procedures in response to evolving study findings; rationale	6-7
Data collection instruments and technologies	#11	Description of instruments (e.g. interview guides, questionnaires) and devices (e.g. audio recorders) used for data collection; if / how the instruments(s) changed over the course of the study	6-7
Units of study	#12	Number and relevant characteristics of participants, documents, or events included in the study; level of participation (could be reported in results)	5-6

Data processing	#13	Methods for processing data prior to and during analysis, including transcription, data entry, data management and security, verification of data integrity, data coding, and anonymisation / deidentification of excerpts	7
Data analysis	#14	Process by which inferences, themes, etc. were identified and developed, including the researchers involved in data analysis; usually references a specific paradigm or approach; rationale	7-8
Techniques to enhance trustworthiness	#15	Techniques to enhance trustworthiness and credibility of data analysis (e.g. member checking, audit trail, triangulation); rationale	7-8, 17
Syntheses and interpretation	#16	Main findings (e.g. interpretations, inferences, and themes); might include development of a theory or model, or integration with prior research or theory	8-13
Links to empirical data	#17	Evidence (e.g. quotes, field notes, text excerpts, photographs) to substantiate analytic findings	10-13
Intergration with prior work, implications, transferability and contribution(s) to the field	#18	Short summary of main findings; explanation of how findings and conclusions connect to, support, elaborate on, or challenge conclusions of earlier scholarship; discussion of scope of application / generalizability; identification of unique contributions(s) to scholarship in a discipline or field	13-16

Limitations	#19	Trustworthiness and limitations of findings	16-18
Conflicts of interest	#20	Potential sources of influence of perceived influence on study conduct and conclusions; how these were managed	19
Funding	#21	Sources of funding and other support; role of funders in data collection, interpretation and reporting	19