

„Multitasking“ and Complex Patient Encounters in Family Medicine

Multitasking und komplexe Beratungssituationen in der Hausarztpraxis

Verena Tobert¹, Uwe Popert²

Background: Family practitioners (FPs) provide many aspects of care for their patients. Researchers have looked at the major reasons for encounter (RFE) (i.e. symptoms, wishes, complaints) and problems (i.e. diagnoses) identified by doctors, but little is known about the actual variety of aspects dealt with during individual encounters. Research on patient-related reasons for encounter, doctor-identified numbers of problems and consultation length could improve future practice.

Methods: For this quantitative observational study, a medical student visited twelve FP offices in Kassel and watched 226 consecutive FP-patient encounters. She took handwritten notes about the patients' reasons for encounter, the issues raised by the FP and the duration of the consultation. We used a classification scheme ("International Classification of Primary Care", ICPC-2) to organize the topics and identify the main problems. We used Excel and GraphPad Prism 7 for the analysis of anonymized data.

Results: Patients had a median of 2.00 RFE per consultation (95% CI = 2.44–2.80; mean = 2.62; range = 1–6). The median number of patient problems treated by doctors was 2.00 (95% CI = 2.29–2.65; mean = 2.47; range = 1–7). The average duration of one encounter was 07:59 min (95% CI = 08:17–09:37 min; mean = 08:57; range = 00:30–31:21 min). Correlation of time and number of problems was 0.5693 (95% CI = 0.471–0.6536; $p < 0.0001$).

Conclusions: We found that on average, German FPs handle between two and three problems/RFE per encounter. This is in line with international data and emphasizes the value of FPs in primary care. In contrast to results from other countries, consultation length in Germany was much shorter.

Keywords: family practice; reason for encounter; ICPC-2; problem; consultation length

Hintergrund: Hausärzte betreuen ihre Patienten in vielen Versorgungsbereichen. Bisherige Studien haben im Wesentlichen die Hauptberatungsanlässe (reasons for encounter, RFE) (d.h. Symptome, Anliegen, Beschwerden) bzw. vom Arzt identifizierte Probleme (d.h. Diagnosen) untersucht.

Methoden: Für diese quantitative Observationsstudie beobachtete eine Medizinstudentin 226 konsekutive Arzt-Patienten-Beratungen in zwölf hausärztlichen Praxen in Kassel und Umgebung. Beratungsanlässe, die vom Arzt behandelten Probleme und die Konsultationsdauer wurden handschriftlich notiert und anonymisiert. Die Themen wurden entsprechend der "International Classification of Primary Care" (ICPC-2) klassifiziert und mit Excel und GraphPad Prism 7 ausgewertet.

Ergebnisse: Patienten hatten im Durchschnitt 2,00 Beratungsanlässe/RFE (95%-KI = 2,44–2,80; Mittel = 2,62; Bereich = 1–6). Der Durchschnitt der von Hausärzten behandelten Probleme lag bei 2,00 (95%-KI = 2,29–2,65; Mittel = 2,47; Bereich = 1–7). Die durchschnittliche Dauer einer Konsultation betrug 07:59 min (95%-KI = 08:17–09:37 min; Mittel = 08:57; Bereich = 00:30–31:21 min). Die Korrelation zwischen Behandlungsdauer und Anzahl der behandelten Probleme betrug 0,5693 (95%-KI = 0,471–0,6536; $p < 0,0001$).

Schlussfolgerungen: Die Hausärzte in der vorliegenden Untersuchung behandeln durchschnittlich etwa zwei bis drei unterschiedliche Behandlungsanlässe bzw. Probleme pro Konsultation. Dies entspricht den Ergebnissen internationaler Studien und betont die Bedeutung von Hausärzten in der Primärversorgung. Im Gegensatz dazu war die durchschnittliche Konsultationsdauer in Deutschland erheblich kürzer.

Schlüsselwörter: Hausarzt; Beratungsanlass; Problem; Konsultationsdauer; Allgemeinmedizin

¹ Medizinstudentin im 6. Semester an der „Kassel School of Medicine“

² Hausarztpraxis in Kassel

Peer reviewed article eingereicht: 19.02.2017, akzeptiert: 13.03.2017

DOI 10.3238/zfa.2017.0222-0226

Background

Family practitioners (FPs) deal with both acute and chronic medical, social, psychological and administrative problems. They have to identify the patients' problems and also guide their treatment in the care of specialists, while protecting them from under-, over- and wrong treatment [1]. Moreover, FPs have to manage multiple complaints simultaneously, here called "multitasking".

The first study to examine the content of ambulatory medical care in Germany was the EVaS project ("Erhebung über die Versorgung im ambulanten Sektor") from 1981/82. The EVaS data showed the major reasons for visit and the type of diagnosis per patient in primary and secondary medical care, both coded in "reasons for visit classification" (RVC) [2]. This was helpful to analyze major morbidity and medical care in general, but did not consider multitasking.

The most comprehensive study to date was conducted by Salisbury et al. in Bristol, using video recordings which were analyzed by three independent researchers [3]. They found an average of 2.5 problems per doctor-patient encounter. The average consultation length was 11.9 min – each additional problem increased the consultation length by 2 min [3]. Along with findings from Flocke and Beasley [4, 5] they found underreporting of problems and diagnoses in the electronic record system. Because of frequent underreporting in patient routine data and frequent reservations regarding video recordings, for our project we chose to shadow doctor-patient encounters in the examination room.

Methods

Preparation of the study

In preparation of the topic, a literature search comprised Medline, Ovid, and Google scholar with the search terms "general practice", "consultation", "consultation length", "reason for encounter", "ICPC-2" (International Classification of Primary Care), and "problem" in various combinations. Moreover, English and German experts in the field of ICPC-2 and

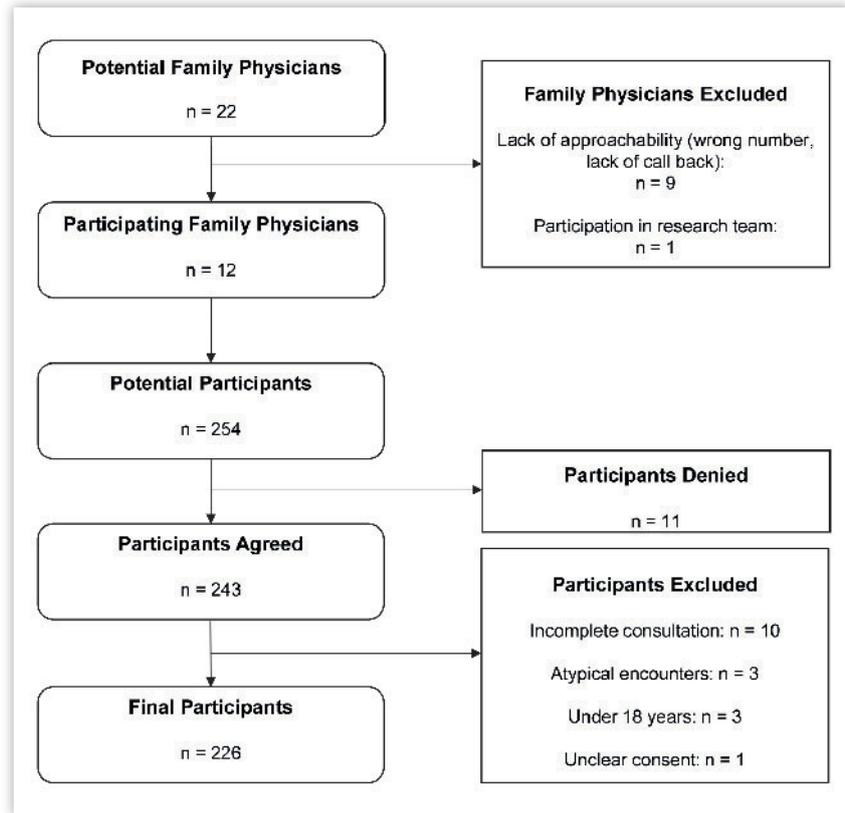


Figure 1 CONSORT Statement. Flow of participants during the study (CONSORT = Consolidated Standards of Reporting Trials)

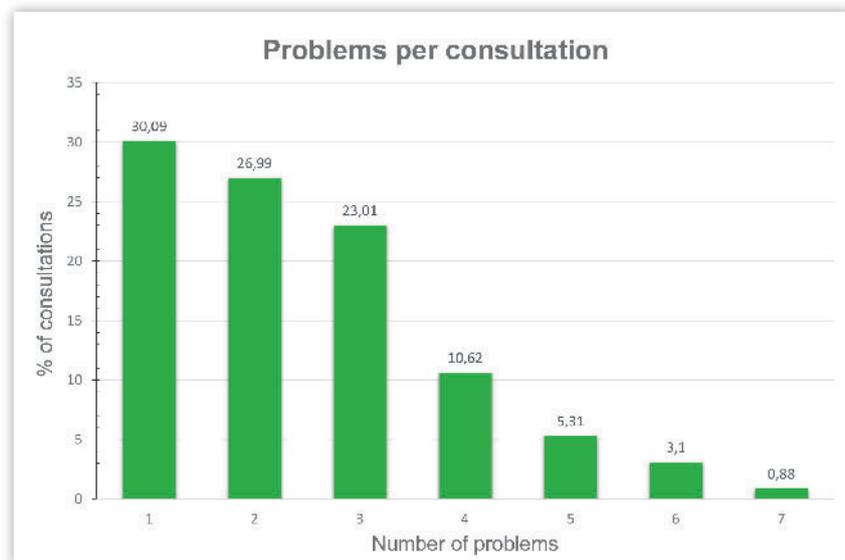


Figure 2 Frequency of problems managed per consultation.

research in family medicine were contacted. The medical student involved in the project was educated in ICPC-2.

The study was planned and the spreadsheet was developed by using the EVaS study as template [2]. Ethical approval was obtained via the British ERGO

system (Ethics and Research Governance Online) and the Landesärztekammer Hessen at the end of September 2016. The study was run at twelve FP offices which have an existing cooperation with Kassel School of Medicine, or are currently in the set-up phase. FPs were ident-

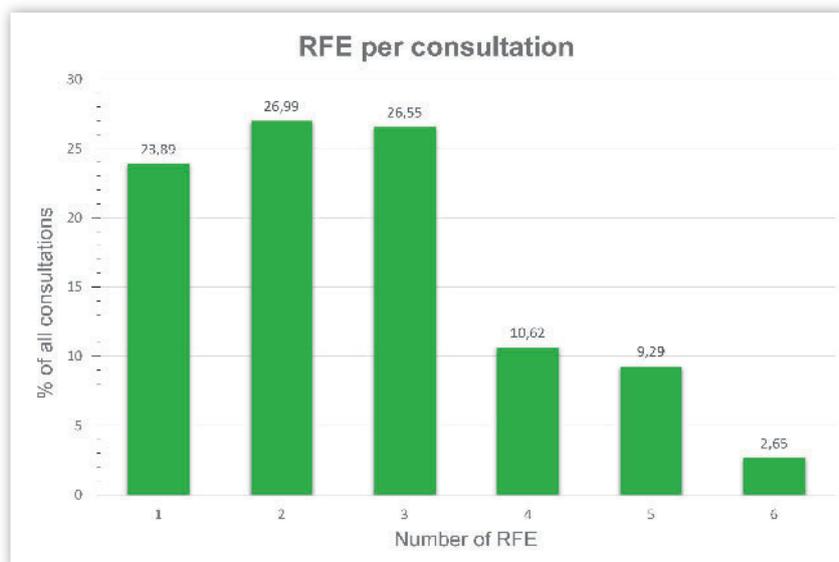


Figure 3 Proportion of reasons for encounter per consultation

ified by a contact list and approached via telephone or in person. Nursing staff were advised to distribute patient information sheets at reception, so that patients could read them in the waiting room. The eligibility criteria were: being at least 18 years old, being able to give informed consent and having a typical doctor-patient encounter. A typical doctor-patient encounter was defined as a meeting of doctor and patient in the consultation room, other contacts (e.g. via telephone, home visits or over the counter) and incomplete consultations were excluded (fig. 1). Apart from these eligibility criteria, there was no selection.

Data collection

Data collection took place over half a day to two consecutive days, aiming at a number of ~ 20 doctor-patient en-

counters. After obtaining written consent from patients and doctors, consecutive FP-patient consultations were shadowed by a medical student between September and December 2016. The researcher took handwritten notes on a pre-designed spreadsheet. The following data was obtained and anonymized: patient's sex and age, reason for encounter, issues raised by the FP, consequence of the encounter. Total consultation length from greeting to goodbye was measured using a stopwatch. In difficult cases, the researcher verified the data collected with the respective FP and/or the electronic health record after the consultation.

Analysis

Data from the spreadsheet was translated into English and entered into Excel for

analysis. In a first step, RFE (reasons for encounter) were identified and coded with ICPC-2. In a second step, problems dealt with were analyzed using all the data collected. One or several RFE can lead to one problem; several problems can share one RFE.

Results

Family practitioner and patient characteristics

254 patients from 12 FP offices in Kassel and surroundings were invited to the study. 11 patients refused, 17 were excluded (fig. 1). The 226 participants were between 18 and 93 years old, with an average age of 55.6 years. 64.6 % were female, 35.4 % were male patients.

Primary outcome: problems managed

The median number of problems managed per encounter was 2.00 (95% CI = 2.29–2.65; mean = 2.47; range = 1–7). The majority of patients had 1–3 problems (77.43 %). 69.91 % of patients had more than one problem managed (fig. 2).

On average patients presented initially with 1.06 RFE per problem (this does not include issues raised by the FP). 6.19 % of patients presented with one RFE but had more than one problem managed.

Reasons for encounter

The median number of reasons for encounter per consultation was 2.00 (95% CI = 2.44–2.80; median = 2.62; range = 1–6) (fig. 3).

	Britt et al [7] 2016	Salisbury et al. [3] 2013	Bjørland et al. [10] 2015	Flocke et al. [4] 2001	Beasley et al. [5] 2004
Country	Australia	England	Norway	USA	USA
Number of consultations analyzed	97,398	229	201	266	572
Number of participating FPs	965	30	4	37	29
Classification scheme	ICPC-1, 2	ICPC-2	Developed by Flocke		Developed by Beasley
Average consultation length [min]	14.9	11.9	17.5	19.3	?
Mean number of problems managed	1.54	2.5	2.6	2.7	3.05

Table 1 Previous studies analyzing the number of problems dealt with

Verena Tobert ...



... is a third-year medical student at Kassel School of Medicine (KSM). She has spent two years in Southampton (UK) and worked on “Multitasking” as part of her bachelor thesis.

Consultation time

Consultation length ranged from 00:30 to 31:21 min with an average of 07:59 min (95% CI = 08:17–09:37 min; mean = 08:57 min). Inter-doctor variation was apparent. Correlation of the number of problems and the duration of the consultation was analyzed using a two-tailed Spearman’s rank correlation coefficient. Correlation was positive ($\rho = 0.569$; CI = 0.471–0.6536; $p < 0.0001$).

Discussion

To our knowledge this was the first study to investigate the number of problems dealt with by German FPs. We found a median of 2.0 problems and 2.0 RFE per patient and encounter. The average consultation length was 07:59 min.

Comparison with existing literature

The distribution of ICPC-2 chapters (i.e. organ systems) is similar to previous studies [6–8]. Although in our study the majority of patients (77.43 %) presented with 1–3 RFE, there were still more than 20 % of patients who presented with 4 or more complaints. In the study Britt et al. [7] conducted, the number of RFE that could be reported was limited to three. Therefore the results of the BEACH study [7] are not comparable to ours. As shown in table 1, the results of all other relevant studies are well in line. This raises the external validity and applicability of the results.

Our project focused on reasons for encounter and “issues raised by the FP” as a first step. The RFE did not adequately reflect the number of problems dealt with, therefore we decided to analyze “problems managed” in a second step. During data analysis we also found that the scope of a reason for encounter highly depends on the definition used.

Therefore we suggest designing an advanced research tool which considers individual issues of a problem (e.g. RFE and issues raised by the FP) and the “problems” as an umbrella term for the main topic discussed. Ideally, this should be based entirely on ICPC-2 and should be implementable in the electronic health record system for automatic data collection. The research tool Procter et al. [9] developed could serve as a good basis.

Despite their different settings and methods, all relevant studies agree that on average, between two and three problems are usually dealt with in family medicine encounters [3–5, 10]. This emphasizes the importance of handling multiple patient problems at the same time, a way of proceeding that we call “multitasking”. Consultation length was highly variable among physicians in our study. Possible causes are the type of appointment (acute vs. scheduled), pressure from the number of patients in the waiting room, characteristics of the patient sample, cultural factors and differences in consultation styles.

The average consultation length of 07:59 min in this study is in line with other findings in Germany from 2003 with an average of 7.6 min [11]. Although dealing with the same amount of patient problems and diagnoses, German consultation times are much shorter than those that are reported from the UK (10:22 min) [12], Norway (17.5 min) [10] and the USA (19.3 min) [4].

Strengths and limitations

All encounters were unselected and included acute and scheduled appointments. The researcher shadowed all encounters which met the eligibility criteria (see methods section). Classification mistakes were minimized by proofreading and discussion among the research team. The diversity in participating FPs (group and single office, urban and rural en-

vironment) is likely to mirror Kassel and the area well.

Patients and FPs were not blinded to the study purpose, which might have influenced their consultation. Other possible influences on RFE include reading the patient information sheet, the exclusion of children and adolescents and the presence of a third person during the encounter. Similarly, the time period (September to December) and the weekday of data collection might be confounders for both consultation length and RFE.

Both a strength and a limitation of this study is that a single researcher (medical student) collected and coded all the data. Observation and coding by one person minimizes heterogeneity but might be a confounder. Data collection by video records and the discussion with an expert panel could improve precision in future studies.

Conclusion

We found that German FPs in this study handle on average between two and three problems/RFE per encounter. This is in line with international data and emphasizes the value of FPs in primary care: in order to keep up the number of medical problems solved, one well-trained FP would have to be replaced by two to three specialists. Of course, this requires good FP training in the full scope of family medicine. Focusing even more on multitasking or the “comprehensive approach” during FP training could improve future practice. We suggest further research comparing the efficiency of family medicine versus specialist centered care.

Conflicts of interest: VT reports no relevant conflicts of interest. UP has been working as FP since 1989, is engaged in postgraduate education and a representative of the German College of General Practitioners and Family Physicians (DEGAM) and the German General Practitioners’ Association (Hausärzterverband).

Correspondence address

Verena Tobert
Kassel School of Medicine
Mönchebergstraße 41–43
34124 Kassel
Phone: +49 (0)157 36326213
Verena.Tobert@googlemail.com

Literature

1. Deutsche Gesellschaft für Allgemeinmedizin und Familienmedizin (DEGAM). Fachdefinition. www.degam.de/fachdefinition.html (letzter Zugriff am 27.03.2016)
2. Schach E, Schwartz FW, Kerek-Bodden HE. Die EVaS-Studie: Eine Erhebung über die ambulante medizinische Versorgung in der Bundesrepublik Deutschland. Köln: Dt. Ärzteverlag, 1989
3. Salisbury C, Procter S, Stewart K, et al. The content of general practice consultations: cross-sectional study based on video recordings. *Br J Gen Pract* 2013; 63: e751–e759
4. Flocke SA, Frank SH, Wenger DA. Addressing multiple problems in the family practice office visit. *J Fam Pract* 2001; 50: 211–216
5. Beasley JW, Hankey TH, Erickson R, et al. How many problems do family physicians manage at each encounter? A WReN study. *Ann Fam Med* 2004; 2: 405–410
6. Kühlein T, Laux G, Gutscher A, Szecsenyi J. Kontinuierliche Morbiditätsregistrierung in der Hausarztpraxis. Vom Beratungsanlass zum Beratungsergebnis. München: Urban & Vogel, 2008
7. Britt H, Miller GC, Henderson J, et al. General practice activity in Australia 2015–16. General practice series 40. Sydney: Sydney University Press, 2016
8. Rosendal M, Carlsen AH, Rask MT, Moth G. Symptoms as the main problem in primary care: a cross-sectional study of frequency and characteristics. *Scand J Prim Health Care* 2015; 33: 91–99
9. Procter S, Stewart K, Reeves D, et al. Complex consultations in primary care: a tool for assessing the range of health problems and issues addressed in general practice consultations. *BMC Fam Pract* 2014; 15: 105
10. Bjørland E, Brekke M. What do patients bring up in consultations? An observational study in general practice. *Scand J Prim Health Care* 2015; 33: 206–11
11. Bahrs O. Mein Hausarzt hat Zeit für mich – Wunsch und Wirklichkeit. Ergebnisse einer europäischen Gemeinschaftsstudie. *G+G Wissenschaft* 2003; 1: 17–23
12. Elmore N, Burt J, Abel G, et al. Investigating the relationship between consultation length and patient experience: a cross-sectional study in primary care. *Br J Gen Pract* 2016; 66: e896–e903



DEGAM-Leitlinien frei im Netz

Die Leitlinien der Deutschen Gesellschaft für Allgemeinmedizin und Familienmedizin (DEGAM) stehen frei im Internet zur Verfügung. Die wissenschaftlich fundierten und vor der Veröffentlichung in Praxen erprobten DEGAM-Leitlinien richten sich nicht nur an Hausärzte, sondern auch an Patienten und Praxismitarbeiter. Neben der Langversion gibt es zu jeder Leitlinie eine Kurzfassung für die Anwendung im Praxisalltag. Mehrere tausend Leitlinien-Sets werden in Praxen und Universitäten in der täglichen Arbeit mit Patienten eingesetzt. Alle Module können auf der DEGAM-Leitlinien-Homepage (www.degam-leitlinien.de) oder auf der Homepage der AWMF (Arbeitsgemeinschaft der Wissenschaftlichen Medizinischen Fachgesellschaften, <http://leitlinien.net/>) bei Bedarf heruntergeladen und ausgedruckt werden.

Kontakt:

Dr. Philipp Leson
DEGAM-Bundesgeschäftsstelle
Friedrichstraße 133
10117 Berlin
Tel.: 030 209669800
Fax: 030 209669899
E-Mail: presse@degam.de
Homepage: www.degam.de

PD Dr. med. Anne Barzel
DEGAM-Geschäftsstelle Leitlinien
c/o Institut für Allgemeinmedizin
Universitätsklinikum Hamburg-Eppendorf
Martinistraße 52
20246 Hamburg
Tel.: 040 741059769
Fax: 040 741053681
E-Mail: leitlinien@degam.de