TOP-PAPER ARZNEIMITTELINFORMATION

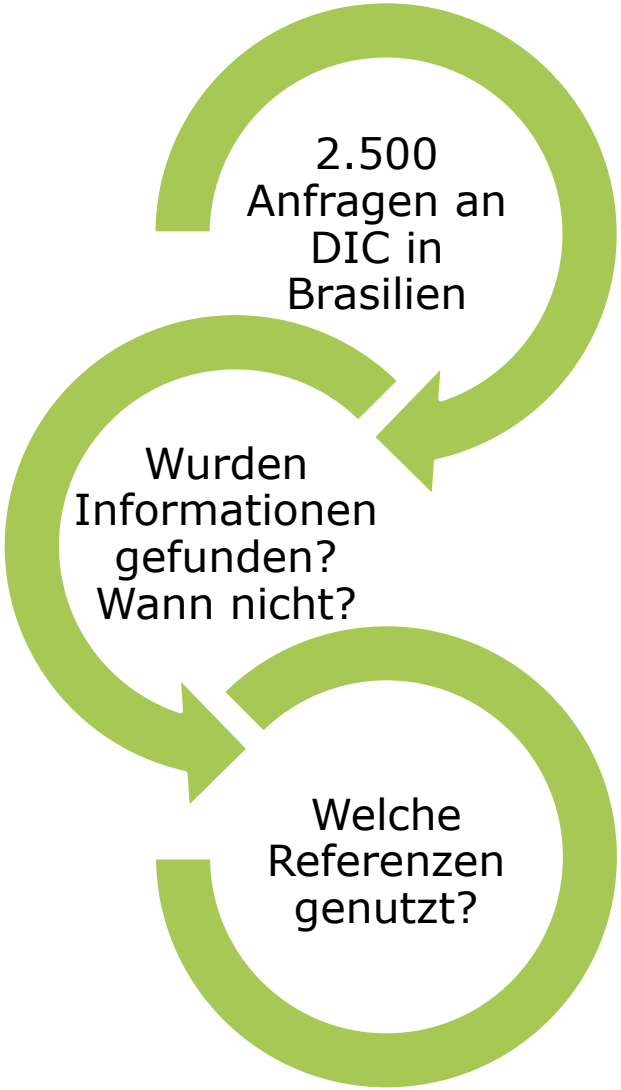
Dr. Dorothea Strobach, München

Drug information center: challenges of the research process to answer inquiries in hospital pharmaceutical practices

Damiana da Rocha Vianna Flôres,[1] Alexandre Augusto de Toni Sartori,[2] Julia Borges Antunes,[1] Alessandra Nunes Pinto,[1] Julia Pletsch,[1] Tatiane da Silva Dal Pizzol[1]

Flôres DDRV, Augusto de Toni Sartori A, Antunes JB, *et al* Drug information center: challenges of the research process to answer enquiries in hospital pharmaceutical practices. *Eur J Hosp Pharm* 2018;**25**:262-266.

FLORES 2018: REQUESTS WITHOUT INFORMATION



625 (25%) Anfragen ohne verfügbare Information in der Literatur

51% aus Krankenhäusern;
davon 52% zu off-label-use

Themen:
53% Applikation
10% Indikation
7% Nebenwirkungen

Referenzen: Ø 7,5
davon 5,5 tertiär
1,5 sekundär
0,5 primär

FLORES 2018: REQUESTS WITHOUT INFORMATION

UKMI Enquiry Level 2-3
2: Complex enquiries – multiple sources
3: Complex enquiries – professional judgement

Dauertrend:
Mehr komplexe Anfragen
[Rosenberg 2009; Schjott 2012]

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Themen:
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7% Nebenwirkungen

Nat Med. 2017 April 07; 23(4): 405–408. doi:10.1038/nm.4306.

The Drug Repurposing Hub: a next-generation drug library and information resource

Steven M. Corsello[1,2,3], Joshua A. Bittker[1], Zihan Liu[1], Joshua Gould[1], Patrick McCarren[1], Jodi E. Hirschman[1], Stephen E. Johnston[1], Anita Vrcic[1], Bang Wong[1], Mariya Khan[1], Jacob Asiedu[1], Rajiv Narayan[1], Christopher C. Mader[1], Aravind Subramanian[1], and Todd R. Golub[1,3,4,5,*]

ZU VIEL INFORMATION

The Mass Production of Redundant, Misleading, and Conflicted Systematic Reviews and Meta-analyses

JOHN P.A. IOANNIDIS

Stanford University School of Medicine; Stanford University School of Humanities and Sciences; Meta-Research Innovation Center at Stanford (METRICS), Stanford University

The Milbank Quarterly, Vol. 94, No. 3, 2016 (pp. 485-514)

IOANNIDIS 2016: MASS PRODUCTION OF REVIEWS AND METAANALYSES

Figure 1. Number of PubMed-Indexed Articles Published Each Year Between 1986 and 2014 That Carry the Tag "Systematic Review" or "Meta-analysis" for Type of Publication

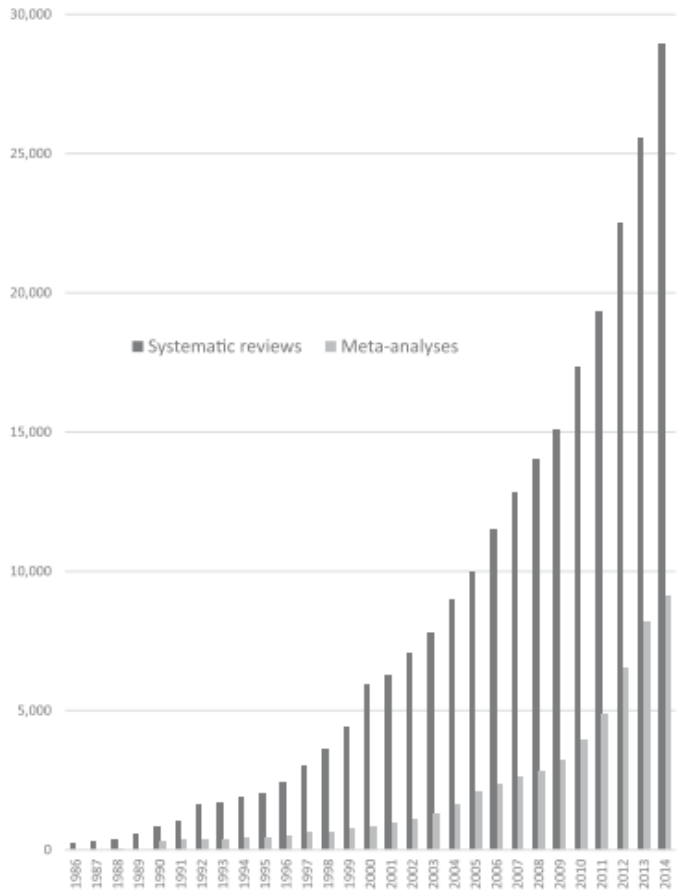
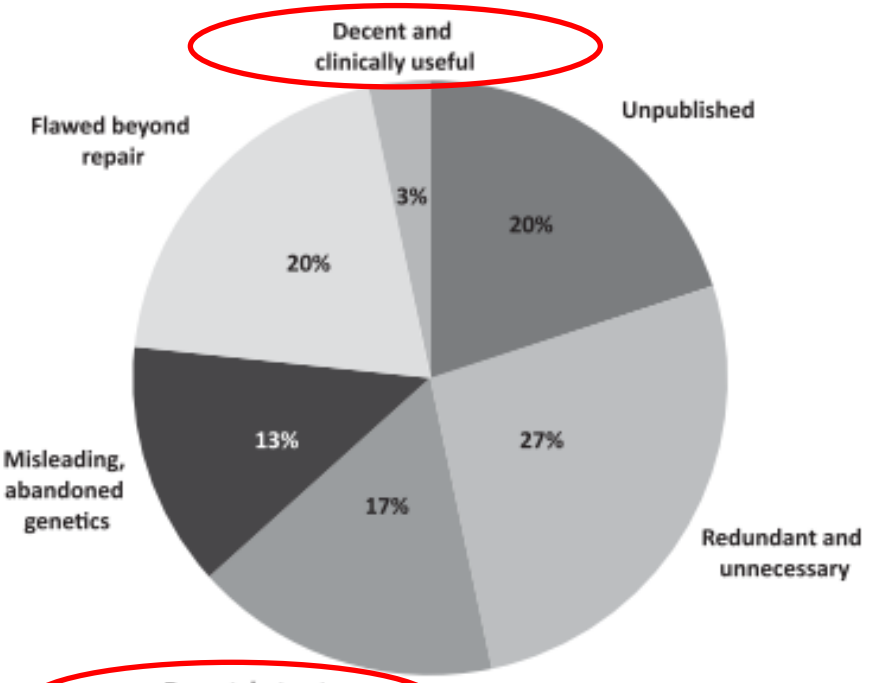


Figure 4. A Summary Overview of Currently Produced Meta-analyses



SYSTEMATIC REVIEWS AND META-ANALYSES – USEFUL?

Intensive Care Med (2018) 44:515–517
https://doi.org/10.1007/s00134-018-5066-3

EDITORIAL

Are systematic reviews and meta-analyses still useful research? No

Sylvie Chevret[1*], Niall D. Ferguson[2,3] and Rinaldo Bellomo[4,5,6]

Intensive Care Med (2018) 44:518–520
https://doi.org/10.1007/s00134-017-5039-y

EDITORIAL

Are systematic reviews and meta-analyses still useful research? We are not sure

Morten Hylander Møller[1*], John P. A. Ioannidis[2] and Michael Darmon[3,4]

UMBRELLA REVIEWS

09:26
14.01.2019

Clin Nutr. 2018 Jun 1. pii: S0261-5614(18)30204-8. doi: 10.1016/j.clnu.2018.05.019. [Epub ahead of print]

Is chocolate consumption associated with health outcomes? An umbrella review of systematic reviews and meta-analyses.

Veronese N[1], Demurtas J[2], Celotto S[3], Caruso MG[4], Maggi S[5], Bolzetta F[6], Firth J[7], Smith L[8], Schofield P[9], Koyanagi A[10], Yang L[11], Solmi M[12], Stubbs B[13].

- Umbrella Review of observational and interventional studies (RCT)
- 10 systematische Reviews mit 84 Studien
- 19 Outcomes, vorwiegend kardiovaskulär; Depression u. Kognition

Conclusions: There is weak evidence to suggest that chocolate consumption may be associated with favorable health outcomes.

through some hypotheses. First, the kinds of chocolate included were heterogeneous, whilst it is reported that dark chocolate might give its consumers health benefits, the milk variety cannot [38] probably for an higher presence of flavonoids and anti-oxidant components. Unfortunately, the studies included in our syntheses did not differentiate between the consumption of dark and milk chocolate. Second, chocolate is rich added sugars and added sugar consumption seems to be associated with an increased risk for CVD.[39] Moreover, as shown by a large study in European people, persons eating more frequently chocolate had more frequently an unhealthier diet, e.g. they eat less frequently vegetables and fruits and introduce less amounts of fibers.[40] Even if the analyses

Romagnoli *et al. BMC Medical Informatics and Decision Making* (2017) 17:21
DOI 10.1186/s12911-017-0419-3

BMC Medical Informatics and Decision Making

RESEARCH ARTICLE Open Access

Information needs for making clinical recommendations about potential drug-drug interactions: a synthesis of literature review and interviews

Katrina M. Romagnoli[1], Scott D. Nelson[2], Lisa Hines[3], Philip Empey[4], Richard D. Boyce[1] and Harry Hochheiser[1,5*]

ROMAGNOLI 2017: TO CREATE DDI RECOMMENDATIONS

Ziele

- Welche Faktoren beeinflussen Entscheidungsfindung zur Angabe von DDI?
- Wie wird in der Praxis recherchiert?
- Welche Hürden treten in der Praxis auf?

Methoden

- Literaturrecherche
- Strukturierte Interviews mit 6 Experten (klinische Pharmazeuten, Editoren von DDI-Kompendien, akademische Experten)

ROMAGNOLI 2017: TO CREATE DDI RECOMMENDATIONS

Table 1 Information needs for interpreting potential drug-drug interaction reports, with indications of sources identifying those needs (literature and/or interviews) and counts of the number of sources mentioning each need

Category	Source	Subcategory	Information needs
Drug and Interaction Information	Literature and Interviews		Mechanisms of action (45 sources); pharmacokinetics (34); temporal overlap in administration of interacting drugs (27); pharmacodynamics (22); frequency of co-administration (16); category (drug class/related drugs) (14); biological plausibility of interaction (14); interaction role (object/precipitant) (4);
Study Design (randomly controlled trials)	Interviews		Dosage (5); participant characteristics (4); number of participants (3); controls (2); sample size calculation (1);
Evidence	Literature and Interviews	Quality and content of report	Drug Interaction Probability Scale [38] scores (10); differentiation between statistical and clinical significance (3); statistical characterization of results (3); inclusion of result magnitude (3); lack of evidence of interactions (2); thoroughness of new drug application (1); inclusion of human (non-animal) data as more credible (1); omissions of important details (1); Number of cases (1)
		Patient Factors	Clinical status (50); demographics (28); medication history (10); allergies (7); body weight (7); lifestyle (6); compliance (4); inter-patient variability (4); number of prescribers/pharmacies (2); length of hospital stay (1); payer status (1)
		Clinical	Dose (28); risk factors for consequences (21); clinical context (15); mitigating factors (11);
		Seriousness	Clinical importance (25); likelihood of irreversible morbidity (17); likelihood of mortality (14); likelihood of prescriber action (2)
		Adverse effects	Frequency of adverse events (numeric and/or estimated) (10); toxicity (6); reversibility of adverse effects (2); alteration of therapeutic effect (2);
Recommendations	Literature and Interviews		Monitor (33); dose adjustment (25); change medication (20); contraindication (20); discontinue or temporarily hold medication (13); modify administration (11); patient education (10); alternative therapy (10); strength of recommendation (9); continue treatment (7); when to start/stop management (2); seek medical attention (1); cost-effectiveness of recommendation (1)

ROMAGNOLI 2017: TO CREATE DDI RECOMMENDATIONS

Experten

nutzten Kombination aus methodischem und subjektivem Vorgehen zur Synthese der Informationen zu einer Empfehlung

Kommen zu unterschiedlichen Wertungen aufgrund unterschiedlicher Ziele für die Verwendung der Empfehlungen

Was heißt das?

Ist die strukturuierte Recherche nur eine Idee?

DDI-Datenbanken, Alert-Systems,… differieren in ihren Aussagen aufgrund des unterschiedlichen Fokus

JOURNAL OF MEDICAL INTERNET RESEARCH Grizzle et al

Original Paper

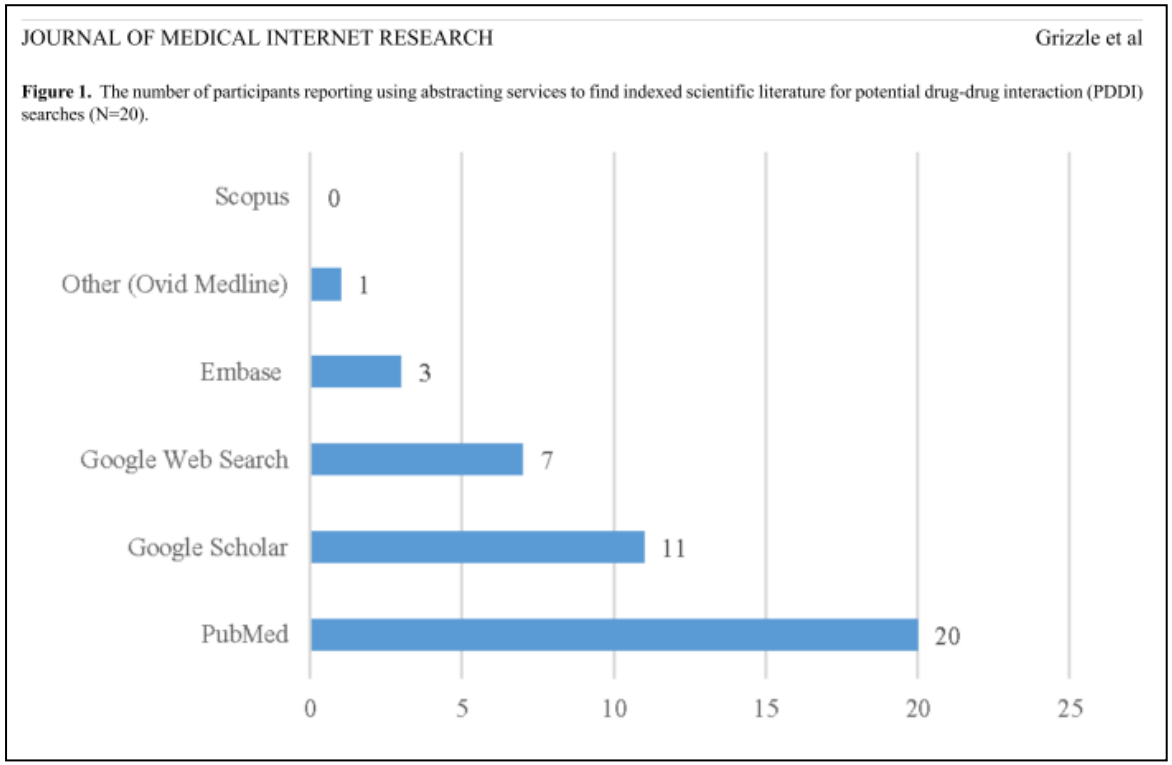
Identifying Common Methods Used by Drug Interaction Experts for Finding Evidence About Potential Drug-Drug Interactions: Web-Based Survey

J Med Internet Res 2019 | vol. 21 | iss. 1 | e11182 | p.1

Amy J Grizzle[1], PharmD; John Horn[2], PharmD; Carol Collins[2], MD; Jodi Schneider[3], PhD; Daniel C Malone[4], PhD; Britney Stottlemyer[5]; Richard David Boyce[5], PhD

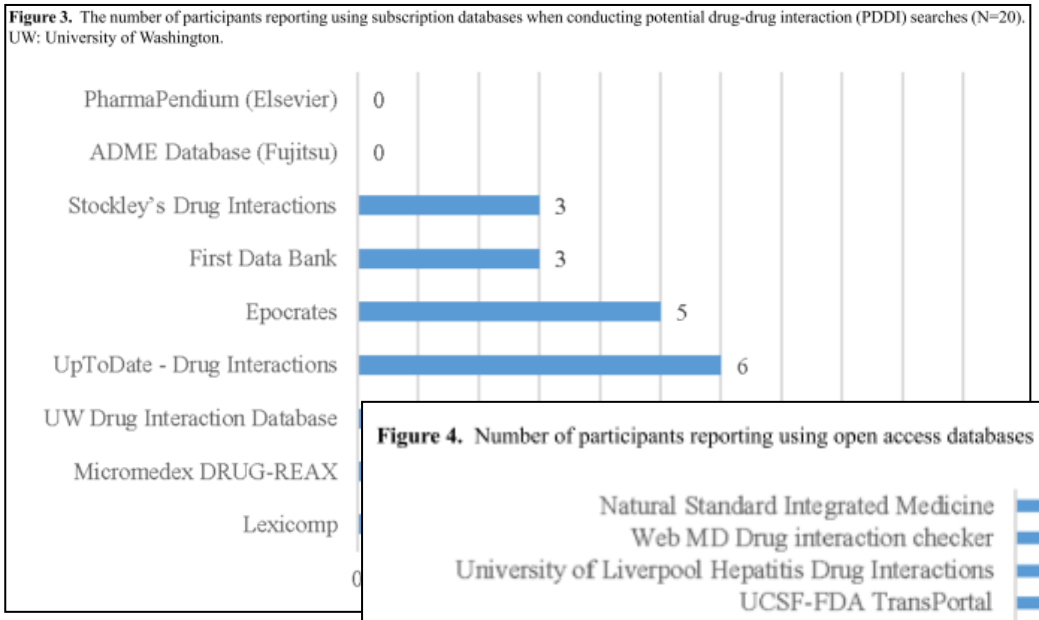
- 20 Experten (1 HospPharm, 2 DIC, 4 Datenbanken, 6 akademische Experten, 7 Anwendungssoftware)
- Strukturiertes Interview mit 16 Fragen zur Recherche: Wie entwickelt? Welche Quellen? Welche Schlagworte? Welche Studientypen berücksichtigt?
- Ergebnis: jeweils eigene Suchstrategie entwickelt

GRIZZLE 2019: FINDING EVIDENCE ON DDI

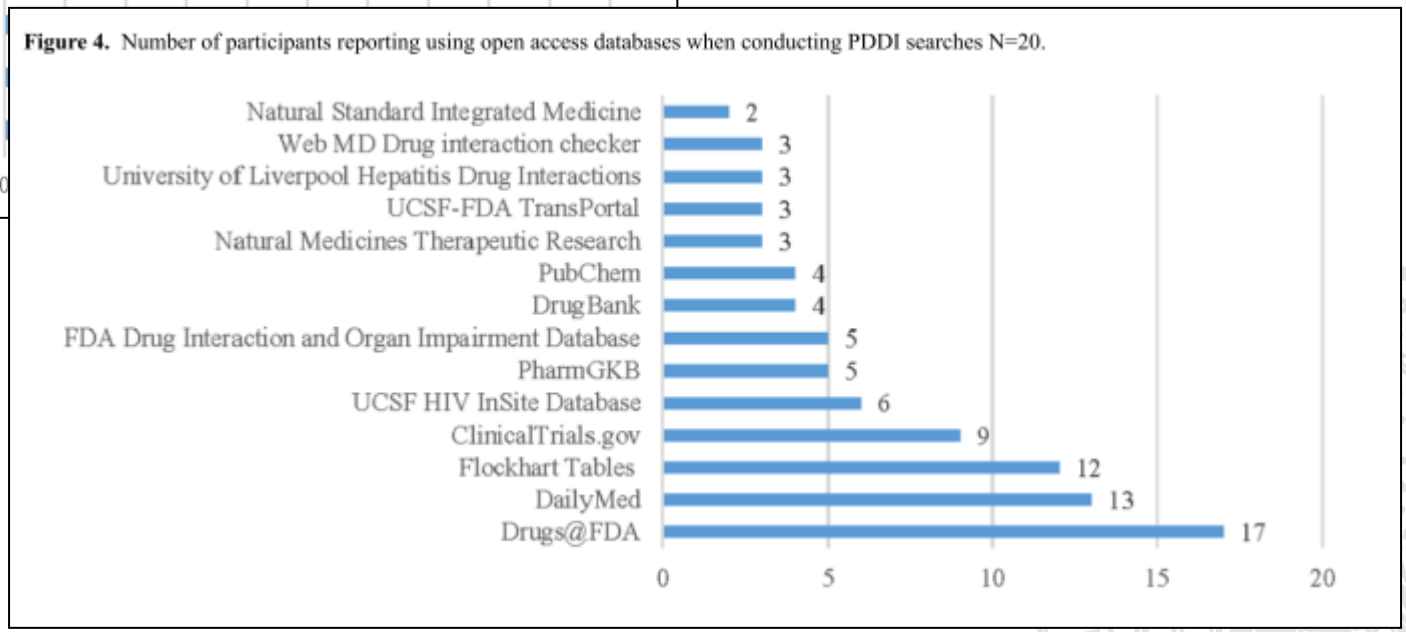


- Eine gute Suche kombiniert!
- PubMed hat weniger, aber spezifischere Treffer, Google Scholar breiter und mehr Volltext
  [Freemann 2008; Sharuff 2013; Bramer 2017 u.a.]

GRIZZLE 2019: FINDING EVIDENCE ON DDI



„Auch Experten suchen nicht nach Schema F; Viele Wege sind möglich"



Use of References in Responses from Scandinavian Drug Information Centres

Jan Schjøtt [1,2,*], Ylva Böttiger [3], Per Damkier [4,5], Linda Amundstuen Reppe [6], Jens Peter Kampmann [7], Hanne Rolighed Christensen [7] and Olav Spigset [8,9]

Medicines **2018**, *5*, 66; doi:10.3390/medicines5030066

- 7 skandinavische DI Center
- 6 Testanfragen aus unterschiedlichen typischen Themengebieten gestellt
- Auswertung der verwendeten Referenzen

SCHJOTT 2018: REFERENCES USED IN DI

Category	References		
	Total	Mean	Range
Adverse effects	35	5.0	3–6
Pharmacokinetics	41	5.9	3–14
Pregnancy	21	3.0	1–9
Complementary medicine	40	5.7	1–17
Polypharmacy	74	10.6	5–17
Breast feeding	33	4.7	1–11
Total	**244**	**5.8**	**1–17**

(from table 1)

(from table 2)

Type of reference	Total n (%)
Primary (original studies)	43 (17.6)
Secondary (reviews)	52 (21.3)
Tertiary (drug monographs, handbooks, etc.)	124 (50.8)
DIC database	22 (9.0)
Personal communication	3 (1.2)
Total	**244 (100.0)**

WAS BRAUCHEN WIR IN DER AM-INFO?

Wir haben

- Ø 5,8-7,5 Referenzen [Schjott 2018; Flores 2018]
- Art und Anzahl kontaktierter Referenzen sehr verschieden

Wir brauchen

- Zugang zu mehreren, aber nicht allen Quellen
- aktuelle Tertiär- und Sekundär-literatur
- Zugang zu, Zeit und Können für Primär-literatur