Research on medical overuse: Overdiagnosis and overtreatment in family medicine and primary care

Abstracts from the EGPRN meeting in Tel Aviv (Jaffa), Israel 20–24 May 2016

KEYNOTE LECTURES

Research into overtreatment and overdiagnosis

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Overdiagnosis is the diagnosis of deviations, abnormalities, risk factors and/or pathology that never in itself will cause symptoms (applies only to risk factors and pathology), lead to morbidity or be the cause of death. Treating an overdiagnosed condition (deviation, abnormality, risk factor and/or pathology) will by definition not change the patient’s prognosis to the better and can therefore only be harmful. Treatment of overdiagnosed conditions is one category of overtreatment. Another type of overtreatment is when best available external evidence shows that the treatment has no beneficial effect on diagnosed conditions.

At the individual level, neither we as general practitioners (GPs), nor the patient, can be sure when the patient is overdiagnosed. Only at the end of the individual patient’s life, we can be certain for biomedical conditions if our diagnosis was correct or iatrogenic. Within the area of psychosocial conditions, we will never get an absolute answer. Therefore, the dilemmas and pitfalls in all diagnostic processes in the GPs’ daily clinical patient-centred practice—with low prevalence of biomedical diseases and high prevalence of psychosocial illnesses—is so beautifully captured in the aforementioned quote of Kirkegaard. Accordingly, the million (or more accurately multi-billion) dollar question is: how can we conduct research about something that cannot be instantly observed and thereby be able to reduce or prevent overdiagnosis and overtreatment?

If we want to know more about the lived life, the experiences and the thoughts among overdiagnosed individuals, we are in most cases raising research questions that have to be explored in qualitative designs: interviews, observational fieldwork, documents, etc. Because we can never be 100% sure that the individual person has been overdiagnosed, informants who are most likely to be overdiagnosed, or informants that for a shorter period are overdiagnosed, could be interviewed, e.g. healthy women (over)diagnosed with osteoporosis via screening, men (over)diagnosed with small abdominal aortic aneurysms via screening and screening participants having abnormal screening findings later confirmed to be false positive. If the research question is about how many people are overdiagnosed, quantitative designs are required. The best available evidence is provided by high quality randomized controlled trials. Next best available evidence comes from cohort studies and least best available evidence comes from results generated in modelling studies.

A final type of research questions could focus on the consequences of overdiagnosis. Harris and colleagues have suggested a taxonomy describing seven different categories that could be explored: financial strain; hassles/inconveniences; medical costs; opportunity costs; physical harms; psychological harms; and societal costs [1]. In addition, we have identified empirical evidence for an additional category: work-related costs. All kinds of study designs are needed to explore the empirical evidence in these eight categories of consequences of overdiagnosis.

References

[1] Harris, RP, Sheridan, SL, Lewis, CL., et al. The harms of screening: a proposed taxonomy and application to lung cancer screening. JAMA Intern Med. 2014;174, 281–285.

How Israel achieves value in healthcare—Israeli healthcare system—achieving excellence through primary care

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The Israeli healthcare system is based on the 1994 National Insurance Act that provides universal coverage to all of its inhabitants. Healthcare is provided by four competing health-care funds. The health benefit basket is quite extensive and includes novel treatments such as KEYTRUDA for metastatic malignant melanoma. Israel has achieved excellent healthcare indices including longevity, seventh among OECD countries and cardiovascular mortality, fourth lowest, and all of that has been achieved with relatively low expenditures: 7.5% of GDP, compared to 17% of USA GDP and 9% OECD average. These achievements of low spending and cost effectiveness can be attributed to the organization of the healthcare system, namely, to its structure, financing, regulation and quality. The system is based on community care provided by the health funds, strict regulation by the Ministries of Health and
Finance, which curb excessive spending, affordable voluntary health insurance that helps in preventing long waiting times, and quality measurements that are transparent. The OECD report of 2012 stated that Israel had established one of the most enviable healthcare systems among all of the OECD countries.

Israel, like other nations, faces future healthcare challenges, including the aging population, costs of new drugs and technologies, patient-physician relationships, the big data revolution, and the need to invest more extensively in preventive medicine. Israel meets these and other challenges by relying on the innovative nature of its people, the start-up nation. Together with, and no less important than the factors mentioned previously, are the humanitarian aspects and the caring for our people as well as caring for other nations facing man-made or natural disasters. Israel’s rescue missions have helped thousands of people all over the world, spreading the message and the reality of Israeli healthcare.

PRIZE-WINNING POSTER

Understanding non-compliance for occult blood test in the Jewish and Arab communities in Israel

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Background: Colorectal cancer is the second most frequent malignancy in Israel. Faecal occult blood testing (FOBT) has proved to be an effective screening tool. In Israel, it is offered to all persons aged 50 and above through an active reaching out and centralized public health system. Despite being non-invasive and free of charge, the programme implementation is characterized by a low compliance rate.

Research question: Could a better understanding of the reasons for not performing FOBT lead to remedial measures appropriate to the multi-cultural context in Israel?

Methods: Adaptation of a validated questionnaire of 13 closed and 1 open question, based on published literature and individual interviews of patients, translated and tested in Hebrew and Arabic languages. Patients between 50 and 70 years old who had not performed the FOBT within a month were requested by their family physician to fill in the questionnaire anonymously. Excluded were patients who had or were due to perform a colonoscopy. The project has received local Helsinki Committee approval.

Results: Two hundred questionnaires were collected, half from Jewish and half from Arabic patients, with an average age of 59, 56% of them female, 41% of them with secondary education level in both communities. To all reasons for not performing the test, Arabic participants answered positively at a much higher rate than Jewish participants (10 out of 13 with significant differences). The reasons most acknowledged by both but mainly by Arabs were “I didn’t know it had to be performed ever year”, “I’m afraid of detecting bowel cancer as I believe there is not cure for it”, “The possibility that the test would result in an operation frightens me”, especially among elders. The highest prevalent answer for both was “I don’t feel comfortable dealing with stool”. In the Arab community, other frequent reasons were related to less interest or knowledge about detection, about the test being free and included in the Israeli “health basket” and “feeling healthy”.

Conclusion: Measures that could improve the performing rate of FOBT are:

- Offering a less “cumbersome” testing method.
- Providing more public information about CRC and the benefits of early detection that may also prevent the need for an operation.
- Encouraging the Arab population to make better use of the Israeli “health basket”.

THEME PRESENTATIONS

Population-based screening for breast and ovarian cancer risk due to BRCA1 and BRCA2

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Background: In the Ashkenazi Jewish (AJ) population of Israel, 11% of breast cancer and 40% of ovarian cancer are due to three inherited founder mutations in the cancer predisposition genes BRCA1 and BRCA2. For carriers of these mutations, risk-
reducing salpingo-oophorectomy significantly reduces morbidity and mortality. Population screening for these mutations among AJ women may be justifiable if accurate estimates of cancer risk for mutation carriers can be obtained.

**Research question:** What are the life risks of breast and ovarian cancer for *BRCA1* and *BRCA2* mutation carriers ascertained irrespective of personal or family history of cancer?

**Methods:** Families harbouring mutations in *BRCA1* or *BRCA2* were ascertained by identifying mutation carriers among healthy AJ males recruited from health screening centers and outpatient clinics. Female relatives of the carriers were then enrolled and genotyped.

**Results:** 8222 male index subjects enrolled in the study. DNA samples from 8195 subjects (99.7%) were successfully genotyped. 175 carried a mutant allele. Among 431 female relatives, 211 were identified as *BRCA1* or *BRCA2* mutations carriers. Cumulative risk of developing either breast or ovarian cancer by age 60 and 80, respectively, were 0.60 (±0.07) and 0.83 (± 0.07) for *BRCA1* carriers and 0.33 (±0.09) and 0.76 (±0.13) for *BRCA2* carriers. Risks were higher in recent versus earlier birth cohorts (P = 0.006).

**Conclusion:** High cancer risks in *BRCA1* or *BRCA2* mutation carriers identified through healthy males provide an evidence base for initiating a general screening programme in the AJ population. General screening would identify many carriers who are not ascertained by genetic testing based on family history criteria. Such a programme could serve as a model to investigate implementation and outcomes of population screening for genetic predisposition to cancer in other populations.

Overscreening for cancer in patients with limited predicted life expectancy. A cross-sectional study

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**Background:** The benefit of screening for colorectal and breast cancer becomes significant only after ten years of screening. Still, only a few guidelines include limited estimated life expectancy as screening cessation criteria. Schonberg Index was validated to estimate five and nine year’s survival by questionnaire data. Clalit is the largest HMO in Israel with 4.2 million patients. It uses a quality indicators programme to make sure eligible patients are being screened.

**Research question:** Calculate Schonberg score of predicted life expectancy using EHR data, evaluate the rates of cancer screening for patients with limited predicted life expectancy in Israel, and recognize drivers for overdiagnosis in this group.

**Methods:** EHR data was used to estimate life expectancy by Schonberg Index for all adults aged 65 and older. A threshold of Schonberg score 10 was used (50% nine-year survival). We used EHR data to evaluate cancer screening during 2014—annual FOBT, colonoscopy in the past ten years, mammography in the past two years and PSA in the past year (not recommended in the guidelines).

**Results:** Included were 355,260 community-dwelling participants aged 65–79. At ages 65–74 rates of FOBT screening were 36% for high estimated life expectancy and 30% (9151 screened) for limited life expectancy. Of the 180,547 female rates of mammography at ages 65–74 were 70% for high estimated life expectancy and 53% (2121 screened) for limited life expectancy. Of the 164,007 male patients ages 65–79 43% had a PSA test done in the last year, regardless of age group or estimated life expectancy.

**Conclusion:** An overuse of screening tests for patients with limited life expectancy was found. Cancer screening inclusion criteria should include predicted life expectancy criteria to reduce overscreening. Schonberg Index should be validated for use with EHR. Tool to calculate predicted life expectancy should be incorporated in the algorithm in cancer screening programmes and for clinical use.

Overscreening for cancer in patients with limited predicted life expectancy. A cross-sectional study

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**Background:** Although the majority of patients with chronic disease have multimorbidity, medical guidelines are structured around single diseases. This can lead to overtreatment.

**Research question:** Can we develop and test the feasibility of an intervention to support patient-centred prescribing in the context of multimorbidity in primary care?

**Methods:** The existing evidence on general practitioners’ (GPs’) perceptions of the management of multimorbidity was systematically reviewed. A purposive qualitative interview study was conducted with 20 GPs. The Behaviour Change Wheel, a novel method from behavioural science to develop interventions, was used to integrate behavioural theory with the findings of the systematic review and qualitative study to develop our intervention. A feasibility study of the intervention was conducted with 20 GPs from ten primary care centres.

**Results:** The systematic review revealed difficulties for GPs in four areas: disorganization and fragmentation of healthcare; inadequacy of guidelines and medical evidence; challenges delivering patient-centred care; and barriers to shared decision making. The qualitative interviews showed that GPs responded to these difficulties by ‘satisficing’ accepting care that they deemed satisfactory for a particular patient. In multimorbids perceived as stable, GPs preferred to maintain the status quo than actively change medications. These findings informed the development of a structured peer-support intervention which encouraged GP collaborative reviews of patients, called the Multimorbidity collaborative medication review and decision making (MY COMRADE) intervention. In the feasibility study, GPs reported that the intervention was appropriate for the context of primary care; was widely applicable to their patients with multimorbidity; and that recommendations for optimizing medications arose from all collaborative reviews.

**Conclusion:** This work responds to the call for interventions to improve patient-centred prescribing in multimorbidity. Applying theory to empirical data has led to an intervention that fits well into clinical practice, and has the potential to change GPs’ behaviour positively.
Risk factors and predictors for chronic use and abuse of hypnotic medication. A 10-year retrospective cohort study of 190,000 patients

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Background: Insomnia is highly prevalent. Long-term use of hypnotic medications is very common, although not recommended. Newer benzodiazepine receptor agonists (BZrAs or Z-drugs) are claimed to be safer for long-term use and are heavily marketed.

Research question: What is the long-term risk for chronic use and abuse of new benzodiazepine hypnotics and Z-drugs?

Methods: The computerized database of Clalit Health Services (CHS) was used, Israel’s largest healthcare provider. A cohort of 190,044 adult first-time users of hypnotic medications between 2000 and 2005 were identified and followed for ten years. Patients with major psychiatric morbidity or other medical indications for chronic benzodiazepine use were excluded. Demographic data, type of hypnotic used and redemption of prescriptions were assessed in a multivariate model.

Results: Average age was 63.5 years. Seventy per cent of first-time hypnotic use was with Brotizolam, and 22.5% was with BZrAs; 4.1% used at least one daily defined dose (DDD) a day on the tenth year, while 0.21% used more than two DDDs a day. A composite of concurrent use of more than two hypnotics, constant dose escalation or use of more than two DDDs a day was achieved in 1.0% after ten years. Risk factors for daily use were prior use of antidepressants (RR: 1.34, CI: 1.12–1.42), opioid use (RR: 1.20, CI: 1.15–1.26), higher socioeconomic status (RR: 1.19, CI: 1.13–1.16), and being over 65 years of age (RR: 2.34, CI: 2.23–2.45). On multivariate analysis, first use of a BZRA was associated with higher risk of daily use on the tenth year compared with benzodiazepines (RR: 1.30, CI: 1.2–1.5), while initial brotizolam use was protective (RR: 0.79, CI: 0.68–0.92).

Conclusion: Risk of chronic use and misuse of hypnotic medications is not negligible, although its scope varies with different definitions applied. Use of BZrAs was not associated with a reduced risk of long-term use and misuse after ten years.

Who chooses laboratory tests? The physician or the computer?

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Background: Computerized health records can both help and harm the quality of healthcare. In the Leumit Health Services HMO physicians have several ways to choose laboratory tests. Gamma glutamyl transferase (GGT) appears in the ‘liver tests’ and also in the ‘general chemistry,’ and also via the search feature. The use of GGT as a screening test for liver function is controversial. Its main utility is in cases where alkaline phosphatase is elevated.

Research question: In April 2014 a decision was made to remove GGT from the main laboratory screen (so that it could only be sent if searched for specifically) and two months later it was returned, at first completely and then partially. We hypothesized that the convenience of ticking off GGT on the main screen would lead to larger numbers of physicians ordering the test as compared to having to search specifically for the test.

Methods: Leumit has a central laboratory which serves the entire country. The numbers of GGT tests ordered were compared during different periods while the parameters were changed on the main lab screen.

Results: There was a dramatic decrease in orders when GGT could only be ordered by the search function—from 36,000 to 1000 per month. When GGT was added back to one place on the main screen the numbers jumped to 18,000 and back to over 35,000 when GGT returned to both places.

Conclusion: A slight decrease in the convenience of ordering a laboratory test which is not indicated for routine screening led to a dramatic reduction in the number of tests sent. This is a subject, which needs to be studied further. Convenience is a positive thing when it saves precious time but if it leads to overtreatment we shall not have gained much.

Overmedicalization: A qualitative study to explore GPs’ point of view

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Background: (Over)medicalization seems to be a growing phenomenon according to literature. This is partly due to societal reasons, among which the concomitant rise of consumerism, technical and biological breakthroughs, individualism, and a new definition of the concept of ‘health.’ General practitioners (GPs) address overmedicalization in a particular way, which has been theorized as quaternary prevention. This requires the doctor and patient’s ability to manage uncertainty.

Research question: What are the feelings and points of view of GPs about overmedicalization?

Methods: In 2015, three focus groups were conducted with the same group of nine French and Swiss GPs. Participants were invited to share their own experience and point of view about overmedicalization and were encouraged to give concrete examples from consultations. Grounded theory was used to code and analyse verbatim by three researchers. Partial analysis was done after each focus group to influence the next one with new hypothesis and to conduct individual interviews with some participants (theoretical saturation).

Results: GPs reported overmedicalization in almost all medical fields (overdiagnosis, overtreatment, non-useful surgeries, end of life, pregnancy, social problems, etc.). They felt they needed first to define health and their role and limits as GPs. They thought they suffered from overmedicalization instead of creating it, as it was mostly due to external factors from their consultation, as a product of our society. As GPs, they...
were looking for solutions at different levels: health system, practice management and individual level. During consultation, a good doctor–patient relationship seemed to be the keystone to prevent overmedicalization.

**Conclusion:** GPs were very concerned about overmedicalization. They felt they suffered from it in various aspects, but they also were convinced they had a great role to play alongside their patients to avoid such a hazard.

**Antibiotic prescription and hospital admission after screening with C-reactive protein in out-of-hours services in Norway**

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**Background:** In Norway, 85% of antibiotics are prescribed in primary care. Despite a decrease in serious infections, the use of antibiotics has been increasing until 2012. C-reactive protein (CRP) as a point-of-care test is frequently used in out-of-hours (OOH) services, aimed to differentiate between bacterial infections and non-serious infections to keep the use of antibiotics low. Nevertheless, the use of antibiotics has increased since the test was introduced. Several studies have investigated the diagnostic value of laboratory tests for children with fever, but not in primary care with low prevalence of severe bacterial infections.

**Research question:** What effect will pre-consultation CRP screening have on antibiotic prescribing and hospital admission in primary care settings?

**Methods:** Randomized controlled observational study. Inclusion: 401 children <7 years, presenting fever to OOH-services. Randomizing: every third child was randomized to a CRP test before the consultation, for the rest CRP taken at request. Data: examination results and questionnaire to parents.

**Results:** In the group pretested with CRP the prescription rate was 26%, compared with 22% in the control group. The admission to hospital was 5% in the group pretested compared with 9% in the control group, results were not significant. A CRP test was ordered in 56% of consultations. Antibiotic prescription rate was highest with tonsillitis (68%) and otitis media/pneumonia (67%). Main predictors for prescription of antibiotics were a high CRP value and earache. A high respiratory rate, low oxygen saturation and parent’s assessment of serious illness were significantly associated with referral to hospital.

**Conclusion:** CRP is extensively used, especially with high fever. Antibiotic prescription rates in Norway are relatively low compared with other countries, but higher than recommended. CRP screening will not reduce the prescription. Respiratory rate is the most important sign predicting hospital admission.

**Increased contact frequencies in general practice for early malignancy detection—avoiding overdiagnosis**

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**Background:** Increase in a patient’s contact with doctors usually raises concerns. It may be considered a ‘red flag’ for a patient’s deterioration of health and trigger additional diagnostic activity.

**Research question:** Does the increased rate of patient–physician contact indicate a new malignancy in a patient’s near future and thus call for specific diagnostic efforts?

**Methods:** From 153 German general practices’ electronic patient records (EPR) cases with at least one malignancy diagnosis and no-malignancy controls were matched for gender and age. We calculated (1) the number of contacts in the first quarter up to the sixth quarter before a malignancy was diagnosed for the first time, (2) the inter-contact interval (ICI), i.e. the time lag between two consecutive patient–physician contacts measured in days. Differences between cases and controls were investigated in several analyses of variance, with group and time as main factors. Effect size was estimated from multiple correlation R-squared and overall/partial non-linear correlation coefficient eta-squared.

**Results:** A total of 3310 cases and 3310 controls were included. Quarterly frequency for cases in the six quarters before malignancy diagnosis increased from 4.8 contacts (SD: 4.3) to 5.5 contacts (SD: 4.8). Frequency for controls increased only marginally from 4.3 contacts (SD: 3.6) to 4.5 (SD: 4.2). The factor ‘group’ (cases versus controls) was highly significant in analyses of variance, also ‘time’ and the interaction ‘group * time’. However, effect size was very small.

**Conclusion:** An increase in contact frequency is a call for GPs to become more attentive towards these patients. It may raise suspicion of an impending serious disease but the increase is not so dramatic and unique that it can be interpreted a reliable sign of impending malignancy diagnosis, without additional support from evidence. To avoid overdiagnosis, watchful waiting (‘wait and see’) seems to be appropriate.

**Insulin pump therapy—high rate of non-adherence may indicate overuse: A population-based case–cohort study**

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**Background:** In recent years, an increasing numbers of diabetic patients in Israel have been placed on continuous subcutaneous insulin infusion (CSII) pump therapy.
Acute sinusitis—a common disease with overuse of diagnostic tool and medicine treatment

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Background: Acute sinusitis is one of the most common diseases in primary care. Guidelines consistently recommend against imaging for diagnosis and antibiotic routine use.

Research question: What is the level of adherence to guidelines of family doctors in Maccabi Healthcare?

Methods: This observational study was based on computerized databases in Maccabi Healthcare Service all over the country from 2012–2014. Patients diagnosed by a family doctor with acute sinusitis (Icd9-461X), were included. Patients with recurrent sinusitis or with immune compromised diseases were excluded. Data on imaging and on antibiotics’ purchase during the first months after diagnosis were collected.

Results: From 129,113 patients diagnosed with acute sinusitis 20,523 had imaging within 30 days of diagnosis, and 17,395 in the first week. CT scans were done in 0.27% and 15.6% had X-rays. Younger patients had less imaging 0.01% CT and 13% X-ray compared to older, with CT in 0.05% and X-ray 16.5%. Males had 17%, versus 14% of women. Differences between regions were found. Only 24.5% of diagnosed did not buy any antibiotics. The young got less (71.6%) than the older—over 50 (81.9%). No differences among gender and regions were detected. The rate of using imaging and antibiotics varied significantly among physicians. Patients who visit two doctors, ENT and family physician had two-to-three times higher chances to have imaging than if examined by one doctor (14% for visit a family doctor, 28% if previously visited ENT, and 38% if you visited the ENT doctor a week after).

Conclusion: We found a gap between the clinical guidelines and the practice in diagnosis and treatment of acute sinusitis. Clearly, there is considerable variation among physicians and their personal professional patterns. This has implications on the quality of medical care that patients receive and on the public cost.

FREESTANDING PRESENTATIONS

Sepsis aftercare in general practice

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Background: Sepsis survivors often suffer over years from considerable mental and physical complications. This requires substantial aftercare needs following ICU and hospital discharge, mostly provided in general practice.

Research question: The study’s aim was to evaluate the effectiveness of a primary care-based case management programme to reduce sepsis sequelae.

Methods: The Smooth study is a randomized, multicenter controlled trial (ISRCTN: 61744782). Recruited sepsis survivors were randomized to usual care or an intervention which comprised: (1) discharge management (structured information between inpatient and outpatient care); (2) training of general practitioners (GPs) and patients on evidence-based care options for sepsis sequelae; and (3) systematic telephone monitoring of symptoms with feedback for the GP by a case manager. Our primary outcome was the health-related quality of life (HRQoL) as assessed with the short form (SF-36) health survey at six months after ICU discharge. Secondary outcomes included several mental, functional and process of care outcomes at six, 12 and 24 months post-ICU.

Results: We recruited 290 patients from 20 ICUs. 220 (75.9%) completed six months, 204 (70.3%) 12 months and 185 (63.8%) 24 months follow-up. At baseline, there were no significant differences between randomization groups. At six months, we found significant improvements in musculoskeletal function (XSFMA) and activities of daily living (ADL), which tend to sustain at 12 months.

Conclusion: To our knowledge, this is the first large-scale, primary care-based interventional trial targeting reduction in post-sepsis sequelae. The intervention improved functional parameters which are of high relevance for daily life. Our findings may be attributable to improved GP awareness and increased patient activation facilitated by case manager monitoring and support.
Chronic depression care in general practice

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Background: Patients with chronic depression are mainly treated in primary care. They represent a clinically relevant group with extensive (co)morbidity, high functional impairment and associated costs. Evidence of treatment recommendations for chronically depressed patients with persisting symptoms for ≥2 years is limited and little is known about real-life management of these patients.

Research question: How do GPs manage patients with chronic depression and how do patient-related factors influence treatment decisions?

Methods: A total of 1000 randomly chosen German GPs were asked to complete a newly designed questionnaire. A cross-sectional study was performed through descriptive analysis.

Results: A total of 220 (22%) participated, 93% stated that they distinguish between treatment of patients with chronic depression and treatment of patients with first-onset major depressive episode. 92% would recommend psychotherapeutic co-treatment to their chronically depressed patients. More heterogeneity could be observed when the therapeutic consequences of patient-related factors were inquired. Most GPs favour a restraint on antidepressants (ADs) (52%) in older patients (≥75 years) with chronic depression whereas nearly 40% argue for long-term pharmacotherapy. The presence of severe physical comorbidity prompts GPs to either hold back on ADs (65%) or to urgently refer to specialists (40%). Two-thirds of GPs see the need for combination therapy in case of a coexisting anxiety disorder. A comorbid substance abuse leads GPs to an urgent referral (84%). Selection-bias and a non-validated questionnaire may limit the results.

Conclusion: Participating GPs present high awareness towards chronic depression. They report safe diagnosis and high-quality care. Patient-related factors including advanced age, severe physical comorbidity and mental comorbidity play a decisive role in their treatment decisions. Our findings may support further research on improved and individualized treatment strategies for chronic depression.

Struggling with an illness in narratives of patients presenting medically unexplained symptoms (MUS): A study from Poland

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Background: Patients who suffer from medically unexplained symptoms (MUS) belong to the most challenging group of sick people in primary care. Multiple symptoms have no abnormal proof in organic changes. Patients with MUS account for up to 30% of primary care consultations and up to 50% of secondary care outpatient appointments. For primary care doctors, maintaining a healthy doctor–patient relationship with these patients and not overlooking a serious organic disease poses a real challenge.

Research question: What are the content and the structure of illness narratives told by MUS patients?

Methods: Twenty semi-structured interviews were conducted with patients presenting with MUS. The narratives’ content and the narratives’ structure were explored by referring to a typology of illness narratives proposed by Arthur Frank as well as elements of conversation analysis.

Results: There were four major themes: patients’ description of the symptoms, patients’ explanations, patients’ coping and expectations regarding healthcare. MUS patients’ stories may display elements of either chaos narratives and be disempowering or restitution narratives. Regarding conversational structure, the patients’ descriptions of their condition exhibits characteristics of dispreferential organization.

Conclusion: Exploring MUS patients’ narratives may make it
A RAND UCLA procedure to select the best reliable tool to assess therapeutic alliance within Europe. (Tool assessment for therapeutic alliance STUDY)

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Background: Inside communication skills, therapeutic alliance (TA) is a relevant research theme for family medicine. A systematic literature review identified six scales to measure TA in adults. The purpose of the present study was to find the most validated scale (according to reproducibility, reliability and ergonomics) using a RAND/UCLA appropriateness method (RAM) in Europe.

Research question: What is the best possible scale to assess therapeutic alliance in general practice?

Methods: The six scales were the ‘working alliance inventory’ (WAI) and its short form ‘short-revised’ (WAI-SR), the ‘helping alliance questionnaire’, the ‘California psychotherapy alliance scale’, the ‘Kim alliance scale’, the ‘Vanderbilt therapeutic alliance scale’, and the ‘therapeutic bond scale’. A local university expert panel was recruited to rate reproducibility and reliability extracted from additional references. The primary endpoint was reproducibility, and the secondary endpoints reliability and ergonomics.

Results: Fourteen European experts rated reproducibility and reliability during the first Delphi round. Analysis of median quotes by RAM classified appropriateness for each scale in three levels: ‘appropriate’, ‘uncertain’ and ‘inappropriate’. The WAI, WAI-SR and CALPAS had an appropriate reproducibility. Reliability was uncertain for every scale. Only the WAI-SR gathered an appropriate validity median without disagreement and more than 70% of ratings in the appropriate area. The second Delphi round obtained the expert consensus for the WAI-SR.

Conclusion: A consensus for the WAI-SR was achieved. It was the most appropriate scale, according to its reproducibility and reliability to measure TA in adults. It could turn into an efficient teaching tool to assess TA in medical training, and to raise students’ awareness on communication. Further studies are needed to translate the WAI-SR in European language and to validate the translations’ qualities in every country.

The influence of using asynchronous e-visit technology in primary care on chronic disease management

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Background: Since 2012, patients belonging to MHS have had the opportunity to communicate with their family physicians via asynchronous online e-visit technology. These online visits are rapidly changing the nature of the primary medical interface. Our purpose was to examine the influence of these changes on medical outcomes of chronic diseases.

Methods: This is a retrospective study based on the large database of MHS. Study population included patients registered as having ischaemic heart disease and/or diabetes and/or hypertension, and statin users. We compared between patients who requested prescriptions via asynchronous e-visits during the end of 2014 and those who did not. We tested adherence to drug treatment, and medical indices in the two groups during entire 2015. Adjustments were made by regression analysis.

Results: Among the 242,218 patients in the study population, 33,629 were using online e-visits to family physicians. The latter group consisted of more men than women, had a higher SES level, while age and co-morbidity were similar. We found significantly improved adherence for the purchases of statins, oral anti-diabetic drugs, and anti-hypertensive drugs in the ‘virtual visitors’ group. Additionally, a slight but significant improvement in medical indices was exhibited among patients using e-visits (P < 0.001). Average HbA1c was lower in diabetic patients (7.07 versus 7.23%). Average LDL was lower in ischaemic heart patients consuming statins (84.6 versus 92 mg/dl), and average blood pressure was slightly lower in hypertensive patients (132.9 versus 134.2 mmHg).

Conclusion: Medical e-visits did not appear to be detrimental and even seem to improve the management and clinical outcomes of chronic diseases.

‘It’s a bit like in hospital’—general practitioners’ experiences and strategies to perform nursing home visits [poster]

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Background: Increasing numbers of nursing home residents will challenge medical care in this setting, and augment the collaboration of nurses and general practitioners (GPs) who deliver medical care for nursing home residents in Germany, usually through home visits.
Research question: How do German GPs currently experience home visits in nursing homes?

Methods: Open guideline-interviews about interprofessional collaboration and the process of the visit were conducted with 30 GPs in three study centers, digitally recorded and transcribed, and with grounded theory methodology. GPs were recruited via postal request and existing networks of the research partners.

Results: Four different types of nursing home visits were found: visits on demand, periodical visits, nursing home rounds and ad hoc decision-based visits. We identified the core category ‘productive performance’ of home visits in nursing homes which stands for the balance of GPs’ individual efforts and rewards. Routine visits were mostly considered as having in high productiveness in contrast to urgent visits whose high workload lead to an imbalance of ‘productive performance’ GPs used different strategies to perform a productive home visit: preparative strategies as scheduling and planning, on-site strategies and planning-ahead strategies (education, documentation). They feel the need to actively influence the structure of the visit and strive to balance their effort and perceived outcomes.

Conclusion: Our theory and findings can inform research, professional training as well as practice and nursing home management. Additional results of the interprofessional study will add perspectives of residents, relatives and nurses to inspire constructive discussions on how to improve interprofessional collaboration and quality of care in nursing homes.

Health behaviour and utilization of health services in ultra Orthodox Jews (UOJ) in Safed [poster]

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Background: Ultra-Orthodox Jews (UOJ) live in a closed defined community with uniform lifestyle. UOJs evaluate their health higher than other population; have higher levels of life satisfaction and lower levels of stress.

Research question: Is there a difference in the utilization of health services and health parameters between UOJs and non UOJs living in Safed?

Methods: A cross-sectional study in the patients of Clalit Health Services in Safed: UOJs as the study group and non-UOJs as the comparison. The groups were compared for sociodemographic parameters; hypertension, dyslipidaemia, ischaemic heart disease—prevalence and control; screening and immunizations, primary care and consultant visits; analgesics and respiratory medications.

Results: A total of 2652 participants were UOJs and 16,381 non-UOJs. The rate of visits for UOJs in a year was lower for primary care and consultants than for non-UOJs (78.7% versus 83.9%, P < 0.001 and 45% versus 55%, P < 0.001, respectively). UOJs were vaccinated against influenza less than non-UOJs, both in babies <2 years and the elderly (8.4% versus 18.98%, P < 0.05 and 51% versus 67.7%, P < 0.05). Performance of mammography and tests for occult blood were similar in both groups. Chronic diseases were less prevalent in UOJs (19% versus 37%, P < 0.0001). Control of hypertension and diabetes was similar but control of dyslipidaemia was better in UOJs (76.6% versus 63.9%, P = 0.012).

Fewer medications were purchased by UOJs.

Conclusion: UOJs rate their way of life more positively than the general population. Our research suggests that they also appear to utilize health services less, and have lower vaccination rates than non-UOJ, although screening for early detection of cancer is similar. Chronic diseases appear to be less, but control is similar or better than the general population suggesting that rates are not due to under-detection. Our research indicates a different but not necessarily inappropriate utilization of health services although lower immunization rates are a concern.

The influence of social networking sites on health behaviour change—meta-analysis

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Background: Lifestyle risk behaviours are nowadays responsible for the global burden of non-communicable diseases. The fact that social networking sites (SNSs) are widely accessible across geographical barriers, and are increasingly being used by people on a daily basis (namely through mobile phones), turn them into especially interesting loci for public health interventions in the behavioural domain.

Research question: What is the effectiveness of interventions using social networking sites (SNSs) to change health behaviours?

Methods: Five databases were scanned using a predefined search strategy. Studies were included if they focused on patients/consumers, involved an SNS intervention, had an outcome related to health behaviour change, and were prospective. Studies were screened by independent investigators and were assessed using Cochrane’s ‘risk of bias’ tool. Randomized controlled trials were pooled in a meta-analysis. A positive effect of SNS interventions on health behaviour outcomes was found (Hedges’ g 0.24; 95% CI: 0.04–0.43). There was considerable heterogeneity (I^2 = 84.0%; T^2 = 0.058) and no evidence of publication bias.

Conclusion: To the best of our knowledge, this is the first meta-analysis evaluating the effectiveness of SNS interventions in changing health-related behaviours. Most studies evaluated multi-component interventions, posing problems in isolating the specific effect of the SNS. Health behaviour change theories were seldom mentioned in the included articles, but two particularly innovative studies used ‘network alteration’, showing a positive effect. Overall, SNS interventions appeared to be effective in promoting changes in health-related behaviours, and further research regarding the application of these promising tools is warranted. In conclusion, our study showed a positive effect of SNS interventions on health behaviour-related outcomes.