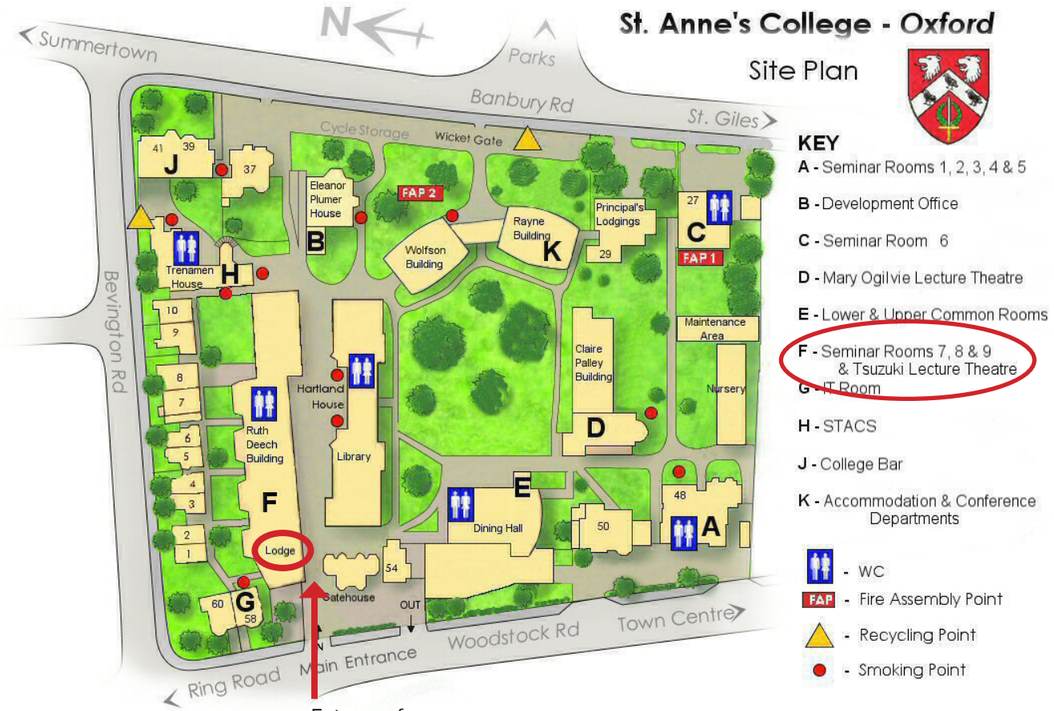
NHS
National Institute for Health Research

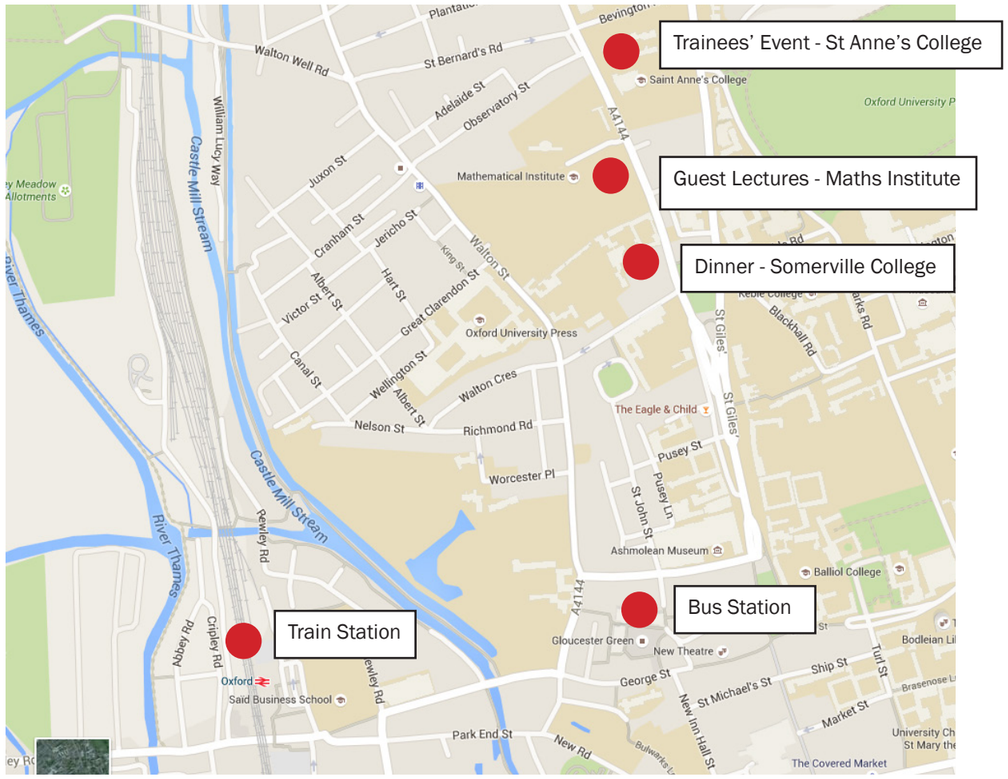
School for Primary Care Research

Annual Trainees' Event

21-22 September 2015
St Anne's College, University of Oxford



Entrance from
Woodstock Road



Programme

Check in at St Anne's on 21 September from 12 noon. Vacate rooms on 22 September by 10am.

DAY ONE	21 September		Venue
11.00 - 12.00	**Registration and poster hanging**	Poster hanging in Seminar Rooms 7,8 or 9 - see programme on page 3 for seminar room details	**Ruth Deech Foyer**
12.00 - 1.00	**Lunch**	Buffet	**Ruth Deech Foyer**
1.00 - 1.10	**Welcome and introduction**	Richard Hobbs SPCR Director	**Tsuzuki Lecture Theatre**
1.10 - 1.20	**Introduction and poster session instructions**	Christian Mallen SPCR Training Director	**Tsuzuki Lecture Theatre**
1.20 - 2.05	**Parallel sessions**	**Qualitative Research Case Studies** - Leila Rooshenas & Fiona MacKichan *Chair: Sarah Knowles*	**Tsuzuki Lecture Theatre**
		CPRD/THIN Databases - Evan Kontopantelis *Chair: Paula Dhiman*	**Seminar 9**
2.10 - 3.10	**Poster session 1**	Programme on page 3	**Seminar 7,8 & 9**
3.20 - 4.00	**Guest Lectures**	Welcome tea	**Maths Institute**
4.00 - 5.30	**Guest Lectures**	**w(h)ither the NHS!** Professor Chris Ham **Is academic primary care an oxymoron?** Professor Graham Watt	**Maths Institute**
7.00 - 10.00	**Dinner**	**SPCR renew and refresh** Professor Dame Sally Davies	**Somerville College Dining Hall**

DAY TWO	22 September		Venue
7.00 - 8.30	**Breakfast**		**St Anne's Dining Hall**
9.00 - 10.00	**Parallel sessions**	**Balancing an academic career, life and clinical practice** - Professor George Lewith *Chair: Jeremy Howick*	**Tsuzuki Lecture Theatre**
		Handling the media - Dr Tom Calver **Pathways to impact** - Professor Gene Feder *Chair: Sara Muller*	**Seminar 9**
10.05 - 11.00	**Poster session 2**	Programme on page 3	**Seminar 7,8 & 9**
11.00 - 11.30	**Refreshments**		
11.30 - 12.00	**Parallel sessions**	**Applying for further funding** Dr James Sheppard Dr Andrew Flower *Chair: Adam Geraghty*	**Tsuzuki Lecture Theatre**
		Recruitment in primary care (PCRN) - Dr Tricia Ellis	**Seminar 9**
12.05 - 1.00	**Presentation**	**Publishing your research** - Dr Nia Roberts *Chair: Helen Atherton*	**Tsuzuki Lecture Theatre**
1.00 - 2.00	**Lunch**	Buffet	**Ruth Deech Foyer**
2.00 - 3.00	**Poster session 3**	Programme on page 3	**Seminar 7,8 & 9**
3.00 - 3.15	**Closing comments**		**Tsuzuki Lecture Theatre**

Board Members and Training Leads

University of Birmingham	**David Fitzmaurice**	Antje Lindenmeyer
University of Bristol	**Chris Salisbury**	Ali Heawood and Rebecca Barnes
University of Cambridge	**Jonathan Mant**	Fiona Walter
Keele University	**Elaine Hay**	Christian Mallen and Carolyn Chew-Graham
University of Manchester	**Peter Bower**	Aneez Esmail
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University of Nottingham	**Tony Avery**	Nadeem Qureshi
University of Oxford	**Carl Heneghan**	Dan Lasserson
University of Southampton	**Paul Little**	George Lewith
University College London	**Irwin Nazareth**	Elizabeth Murray

Poster Sessions

	Session 1 **Monday** 2.10 to 3.10	**Session 2** **Tuesday** 10.05 to 11.00	**Session 3** **Tuesday** 2.00 to 3.00
Group 1 **Seminar 7**	Helen Atherton Mairead Murphy Sonia Coton Emily Wersocki	Sarah Knowles Kieran Ayling Jane Vennik	Grace Moran Ruth Baker David Jameson
Facilitators	Louise Robinson Christian Mallen	Elaine Hay Aneez Esmail	Rebecca Barnes Paul Little
Group 2 **Seminar 8**	Abi Eccles Sophie Orton Sarah Hardoon Adam Geraghty	Hilary Davies Ashley Bryce Toby Helliwell Christos Grigoroglou	Josie Messina Ben Fletcher Feroz Jadhakhan
Facilitators	Chris Salisbury Antje Lindenmeyer	Barbara Hanratty Carl Heneghan	Dan Lasserson Irwin Nazareth
Group 3 **Seminar 9**	Kethakie Lamahewa Sarah Rodgers Sarah Stevens Shoba Poduval	Clare McDermott Cliona McRobert Alison Gregory Paula Dhiman	Jeremy Howick Edmore Chamapiwa Ingrid Muller
Facilitators	Elizabeth Murray Nadeem Qureshi	Peter Bower Jonathan Mant	George Lewith David Fitzmaurice

Abstracts

Helen Atherton 2011

The potential for alternatives to face to face consultations in UK Primary Care: a realist review

Policymakers believe that alternatives to face-to-face (F2F) consultation could have a transformative impact on general practice. The existing literature does not tell us under what conditions, with which patients and in which ways alternative methods of consultation may actually work. We conducted a realist review to explore this further. We conducted a literature search to identify studies that explore, or test, the effects of alternatives to F2F consultations in relation to experiences, or described theories or ideas about the potential effects. We devised a matrix for data extraction and used constant comparison between reading and the matrix to identify the point at which no new ideas were emerging and we had achieved "saturation."

We identified both positive and negative effects of alternatives to F2F consultations according to different groups e.g. patient versus practice staff. Even where alternatives are in use primary care professionals share concerns based on speculation rather than their experiences, and this influences the implementation of alternatives. Patients value improved access, convenience and continuity of care. The review is part of a wider study (AltCon) which aims to understand how, under what conditions, for which patients, and in what ways, alternatives to F2F consultations such as use of the telephone or email may offer benefits to patients and practitioners in general practice. The findings of the review will guide a focused ethnography in general practice, occurring over 8 practices in 3 areas.

Abi Eccles 2011

How people with MS make decisions

Introduction

MS is a condition characterised by uncertainty because it is complex and personalised with largely inconclusive research evidence into prognosis and effective treatments. This paper explores decision making experiences specific to people with MS.

Methods

Thirteen qualitative interviews with people with MS were carried out to explore their experiences of decision making and interactions with healthcare professionals. Interview data was coded and thematic analysis performed.

Results

Uncertainty and fear of prognosis emerged as overarching themes which shape decision making experiences for people with MS. The information that participants accessed when making decisions could be divided into two distinct information spheres: clinical and experiential. Participants displayed sophisticated understandings of factors which form information in these spheres. Such understandings influence how information is used to make decisions.

Conclusions

Participants recognise that clinical information as limitations due to the lack of effective treatment options available and perceived potential biases such as politics, disciplinary epistemologies and pharmaceutical industry interests; therefore participants are aware that certain types of information about potentially effective interventions may be excluded from this arena. These perceived limitations meant that participants were inclined to consider information from other sources outside clinical consultations when making decisions. Participants consider the experiential information sphere a vital source when making decisions. Participants draw upon their own embodied experiences and experience of others in many ways. They also recognise the limitations of experiential information and used it in a reflexive manner to address these limitations.

Kethakie Lamahewa (Sumathipala) 2011

Course of unexplained physical symptoms in primary care: a longitudinal cohort study

Introduction

Unexplained physical symptoms (UPS) are common in primary care. These can be distressing for patients, difficult for doctors to diagnose and manage, and costly for the NHS. Few studies have explored how UPS progress over time.

Objective

To describe how UPS symptoms progress over six months follow up.

Methods

Consecutive adults (aged 18 and over) at nine general practices in socio-economically diverse locations in London were screened using the Patient Health Questionnaire, somatic symptom module (PHQ-15). Eligible respondents scoring ≥5 were invited to take part in the longitudinal study. Baseline data included quality of life, psychological well-being and past health and social history. Outcomes were somatic symptom score and symptom persistence at six months.

Analyses

Descriptive analyses were conducted to describe symptom scores and symptom persistence (resolved, still under investigation, received a diagnosis or still unexplained) at follow up.

Results

294 participants (231 female, median age 43 (IQR 32-57)) had mean baseline PHQ-15 score of 12 (SD=5). Response rate at six months was 245/294 (83%) and mean PHQ-15 score was 11 (SD=5). 135/245 (55%) reported symptoms as still unexplained; 26/245 (11%) reported that their symptoms had resolved. 24% had received an explanation or diagnosis and 126/245 (51%) were still under investigation by a doctor.

Conclusion

The majority of participants continued to have UPS and were under investigation at six months. Self-reported symptom persistence provides important insight into the management of patients with UPS in primary care over time.

Clare McDermott 2011

Feasibility study for a community based intervention for individuals with severe CFS/ME

Introduction

Chronic Fatigue Syndrome/ME (CFS/ME) is characterised by debilitating fatigue, pain and other symptoms. Severe CFS/ME can lead to patients becoming housebound or bedbound.

Method

Feasibility and acceptability study of a community based intervention for adults with severe CFS/ME, with qualitative and quantitative evaluation.

Study Aims

1. To establish whether the intervention can be successfully delivered as planned and how it could be improved.
2. To collect quantitative outcome data to document likely effect sizes and variability, rates of recruitment and retention to guide the design of a future RCT.
3. To explore, through qualitative interviews, the experience of patients, carers and clinicians in participation.

Setting

Domiciliary care delivered by multi-disciplinary teams based at two specialist NHS CFS/ME Services in Dorset and Oxfordshire.

Participants

12 patients diagnosed with CFS/ME, who are severely affected according to Cox & Findley (1998) criteria.

Intervention

Intervention includes home visits from therapist, audiorecordings and social contact via peer recovery support group. Based on the concept of 'modelling success' (derived from Neuro-Linguistic Programming), adapted for use in severe CFS/ME through Patient and Public Involvement development work. One year active intervention + one year support and follow-up.

Primary measure

Clinical Global Impression of Change

Secondary outcome measures include

- Electronic activity and sleep measurement
- Patient reported validated outcome measures on physical fatigue, mental fatigue, pain, anxiety, depression, self-efficacy and quality of life.
- Therapist completed validated outcome measures on physical function.

Recruitment now complete. All participants retained in study to date. Results are expected in 2016.

Hilary Davies 2012

Neonatal drug withdrawal syndrome: cross-country comparison using hospital administrative data in England, the USA, Western Australia and Ontario, Canada

Objectives

I determined trends over time in the prevalence of neonatal drug withdrawal syndrome (NWS) in England compared with that reported in the USA, Western (W) Australia, and Ontario, Canada. We examined variation in prevalence of NWS according to maternal age, birth weight and across the English NHS by hospital trusts.

Design and Setting

Retrospective study using national hospital administrative data (Hospital Episode Statistics) for the NHS in England between 1997 and 2011. NWS was identified using international classification of disease codes in hospital admission records. We searched the research literature and contacted researchers to identify studies reporting trends in the prevalence of NWS.

Main outcome measures

Prevalence of NWS by calendar year per 1000 live births for each country/state. For births in England, prevalence by maternal age and birth weight. Prevalence by NHS trust and region at birth, and funnel plot to show outlying English NHS hospital trusts (>3 sd of mean prevalence).

Main results

Mean prevalence rates of recorded NWS increased in all 4 countries. Rates stabilised in England and W.Australia from the early 2000s and rose steeply in the USA and Ontario during the late 2000s. The most recent prevalence rates were 2.7/1000 live births in England (2011; 1544 cases); 2.7 /1000 in W.Australia (2009); 3.6/1000 in the USA (2009) and 5.1/1000 in Ontario (2011). The highest prevalence in England was among babies born to mothers aged 25-34 years at delivery and among babies born with low birth weight (1500 – 2500g). In England in 2011, 8.6% of hospital trusts had a recorded prevalence outside 3 sd of the overall average (7% above, 1% below). The North East region of England had the highest recorded prevalence of NWS.

Conclusions

Although recorded NWS is stable in England and W.Australia, rising rates in the USA and Ontario may reflect better recognition and/or increased use of prescribed opioid analgesics and highlight the need for surveillance. The extent to which different prevalence rates by hospital trust reflect variation in occurrence, recognition or recording requires further investigation.

Jeremy Howick 2012

Practitioners' positive "framing" as a powerful medication in pain: a meta-analysis

Background

A growing body of evidence suggests that empathetically inducing positive expectations can improve clinical outcomes in patients suffering from pain. However no systematic reviews published thus far have yet provided an estimate of the effect size of empathy and positive expectations for treating pain. Such an estimate is useful to understand the extent to which positive expectations can enhance standard care for patients suffering from pain.

Methods

We extracted data from a recent systematic review of randomized trials of interventions that modified all "context factors" (including but not limited to) inducing positive expectations) in adults suffering from pain. The systematic review concluded that positive expectations were effective, but did not pool the results so no effect size was provided. Two authors independently extracted data from the studies and conducted the analysis. Our primary outcome was patient self-reported pain.

Findings

In poolable studies with continuous outcomes (n = 13) the standardized effect size was −0.64 (95% confidence interval −0.99 to −0.28, $p < 0.001$). For dichotomous outcomes in binary studies (n = 2), the pooled odds ratio was 1.71 (95% confidence interval 0.82–3.57, p = 0.15). The effect size remained positive but not statistically significant when we excluded studies deemed to have a high risk of bias (standard effect size −0.29, 95% CI −0.60 to 0.01, p = 0.05, I2 = 72%).

Interpretation

The effect of inducing positive expectations is comparable to the effects of some pharmacological drugs. However many of the studies had a high risk of bias, and heterogeneity was significant. Future research is warranted including investigating ways to implement this evidence into patient care in an ethical way.

Sarah Knowles 2012

Using the Future Workshop method to explore user experience of mental health technology

Introduction

Computerised therapies play an integral role in efforts to improve access to psychological treatment for patients with depression and anxiety, but there are recognised problems with uptake and retention. This has led to a greater focus on user experience of such technologies. Methods from the design sciences could be employed to facilitate evaluation of user experience in health services research.

Method

Future workshop method, established in Human Computer Interaction research, employed with 7 mental health service users to explore their experience of using computerised therapies. The workshop includes specific stages to explore ideal technologies, identify barriers to engagement and consider implementation in practice. 2 consecutive workshops were conducted, with lo-fidelity prototypes presented to participants for discussion.

Results

The workshop was acceptable to participants with mental health problems and enabled them to both comment generally on the appropriateness of the technology but also share their own experiences. Provision of prototypes enables participants to directly critique specific design features and provide concrete recommendations for improvement. Participants emphasised the need for support during their entry into programmes, the need for sensitivity to the specific cognitive and motivational problems of people with mental health problems, and a desire for greater integration with peer or professional support systems.

Discussion

The workshop outputs will be integrated with an existing meta-synthesis of user experience of mental health technologies to produce guidelines for the design of future mental health technologies. The results demonstrate the feasibility and value of the method for health services intervention design.

Josie Messina 2012

The challenges and opportunities for diabetes preventative services in primary care

Background

Primary care is seeing an alarming rise in diabetes cases which could potentially be prevented through lifestyle interventions. Clinical trials indicate that diabetes risks can be cut by as much as 60% through lifestyle interventions; however very little is known about the practicalities of providing such services in primary care.

Objectives

To explore how physicians and nurses approach diabetes prevention for at risk-patients in routine appointments in primary care to understand how health professionals personalized care for diabetes prevention.

Methods

Four primary care sites serving mixed urban city populations in the UK recruited 32 'at-risk' patients for appointment observations. Follow-up interviews with 30 patients, and 20 professions were completed. Thematic analysis uncovered themes in the data.

Results

Patients and health professionals placed a high value on preventative services in primary care, although competing interests, lack of time, and motivation to change proved to be barriers. Professionals made note of the challenges of working in urban practices where socio-economic status and health literacy varied considerably. Opportunities for change arose from a new diagnosis of pre-diabetes or a patient's family history. This was a health professional's chance to engage the patient in a tailored lifestyle change plan. For instance, professionals provided lifestyle advice depending on a patient's level of risk, health literacy, and lifestyle. This approach was useful for patients and they valued primary care as a venue for preventative services.

Conclusion

Very little is known about diabetes prevention outside of clinical trials, and this study demonstrated that primary care can play a useful role in promoting healthy lifestyles for diabetes prevention despite challenges.

Grace Moran 2012

Missed opportunities for the prevention of stroke and transient ischaemic attack (TIA) in primary care

Context

Stroke is one of the leading causes of death and disability globally; approximately 16.9 million first-strokes occur each year. Primary prevention through targeting modifiable risk factors is important to reduce the burden of stroke. However, evidence suggests that primary stroke prevention is sub-optimal in primary care.

Objectives

To investigate the proportion of strokes/TIAs with prior missed opportunities for prevention in primary care.

Design

Retrospective analysis of anonymised electronic primary care medical records from The Health Improvement Network (THIN), a primary care database. PATIENTS: 29,043 first-ever stroke/TIA patients between 2009 and 2013, aged over 18 years.

Outcome measures

Missed opportunities were defined as: untreated high blood pressure in patients eligible for treatment (either blood pressure ≥160/100mmHg or ≥140/90mmHg in patients at high cardiovascular disease (CVD) risk); atrial fibrillation patients with high stroke risk and no anticoagulant drugs prescribed; no lipid-lowering drugs prescribed in patients at high CVD risk or with familial hypercholesterolaemia.

Results

Approximately half of eligible stroke/TIA patients were not prescribed anticoagulant drugs (52%; 1,647/3,194) or lipid-lowering drugs (48%; 7,836/16,028) and a quarter not prescribed antihypertensive drugs (26%; 540/2,038). There was no improvement in the proportion of missed opportunities between 2009 and 2013, with the exception of anticoagulant prescribing. Different patient/demographic characteristics were associated with having a missed opportunity for each type of prevention drug.

Conclusions

A substantial number of strokes/TIAs had prior missed opportunities for prevention. Knowledge of patient characteristics predictive of having a missed opportunity may highlight those vulnerable to not being prescribed prevention therapy.

Mairead Murphy 2012

Development and Cognitive Testing of the PCOQ: A questionnaire to measure outcome in primary care

Background

There is a need for a new patient reported outcome measure (PROM) for primary care. Previously we carried out: 1) a qualitative study 2) a systematic review of PROMs 3) a Delphi consensus process. This resulted in 28 sub-outcomes across 4 domains: Health status, Health Perceptions, Health Empowerment – Internal and External.

Methods

1. We reviewed PROM formats and decided to develop two: one that measures change directly, and one that measures status.
2. We generated identical items for each PROM, using different 5-point scales, e.g. :

   "At the moment, how much are you bothered by pain or discomfort"

   Change PROM scale: "much less [than before my appointment], "less…", "same…" "more…", "much more…"

   Status PROM responses: "not at all"……."extremely"
3. Items were reviewed by an advisory group of 6 (2 academics, 2 clinicians, 2 patients)
4. 3 rounds of cognitive interviews were held with 20 patients. Questionnaires were adjusted after each round.

Results

Status PROM: This had good face validity. Patient comprehension improved throughout the 3 rounds following questionnaire adjustments. Scores in the domains reflected verbally reported status.

Change PROM: 3/6 (50%) of participants misunderstood the scale. It also had poor face validity. It was dropped after the first round.

Conclusions

The study confirmed previous research about change questionnaires: while apparently sensitive to change, these may give spurious results in a proportion of patients.

Our status PROM, the primary care outcomes questionnaire (PCOQ) has shown promise as a sensitive and valid outcome measure for primary care. It is currently being tested quantitatively.

Sophie Orton 2012

Smoking in the home after childbirth: a qualitative exploration of the experiences and beliefs of women who abstained from smoking for at least part of pregnancy but had relapsed by the early postnatal period

Many women stop smoking during pregnancy but relapse shortly afterwards, putting their infants at risk of secondhand smoke (SHS) exposure. Women who were able to stop during pregnancy are a potentially motivated group who may be receptive to making behaviour changes postnatally to protect their infant from SHS. Understanding more about their views and home smoking behaviours may inform intervention development to prevent infant SHS exposure. We conducted and analysed nine semi-structured interviews with women who quit smoking during pregnancy, but relapsed ≤3 months postnatally, using Interpretative Phenomenological Analysis. Central to mothers' accounts of their smoking behaviours during pregnancy and postnatally was their desire to be a 'responsible mother'. Mothers described using strategies to protect their infant from SHS exposure, and held strong negative attitudes towards other smoking parents. After relapsing, mothers tended to reposition themselves as 'social/occasional' smokers rather than 'regular' smokers. Findings suggest that interventions to prevent/reduce infants' home SHS exposure should build on mothers' intentions to be responsible parents. As mothers who relapse principally view themselves as occasional or social smokers, interventions that are highlighted as relevant for women with these types of smoking patterns are more likely to be responded to, and, ultimately, be effective.

Sarah Rodgers 2012

Development of prescribing safety indicators for inclusion in a patient safety toolkit

Background

The PINCER trial has shown that a pharmacist-led intervention is an effective method for reducing a range of clinically important and commonly made medication errors in primary care. There is interest in a national rollout of the approach taken in the PINCER trial and the potential to increase the range and scope of indicators included in the rollout beyond the 10 used in the trial.

Aim

To pilot the acceptability, technical feasibility, reliability, and validity of 23 NIHR/RCGP prescribing safety indicators to determine whether they should be included in a patient safety toolkit for use in general practices.

Methods

Practices downloaded the prescribing safety indicators from the PRIMIS Hub using CHART software, ran the computer queries on their GP clinical system to identify patients at risk of medication error and uploaded the anonymised results to CHART online to allow for comparative analysis of at-risk patients at CCG level. Reliability and validity of the results were established through analysis of anonymised patient level data and acceptability and feasibility were explored using qualitative methods.

Results

All general practices in one Clinical Commissioning Group were recruited into the study (n=15; total list size 121,809). Numbers of at-risk patients identified for each of the prescribing safety indicators will be presented at the conference along with findings from the qualitative work.

Conclusions

Use of the prescribing safety indicators will make it easier for GPs to avoid some of the common medication errors made in primary care and will demonstrate a practice's commitment to patient safety.

Kieran Ayling 2013

Psycho-behavioural Factors Associated with Optimal Influenza Vaccine Response in Older Adults

Objectives

Effective vaccination relies on an individual's immune system responding robustly to antigens present in the vaccine. Therefore, those with reduced immune functionality (e.g., the elderly), frequently achieve suboptimal vaccine outcomes. Psycho-behavioural factors (including diet, mood and physical activity) have been shown to impact both directly and indirectly on immune responses to vaccination. Thus, interventions targeting these factors have the potential to act as an effective, non-pharmacological vaccine adjuvant. As the first step in developing a psycho-behavioural vaccine adjuvant, this study aimed to establish which psycho-behavioural factor(s) exerts the greatest influence on vaccine outcomes and at what time (pre- or post-vaccination) this influence occurs.

Method

138 older adults (65-85 years) were be recruited from primary care. Behavioural (Diet, Physical Activity, Sleep) and psychological factors (Positive and Negative Affect, Perceived Stress) were assessed at frequent intervals during the two weeks before, and four weeks following influenza vaccination. Antibody responses were assessed via antibody microarray performed on serum samples taken pre-vaccination, at 4 weeks and 16 weeks post-vaccination.

Results

As analyses on serum samples remain on-going, an interim analysis of currently available data will be presented. The independent and combined contribution of psycho-behavioural factors to vaccine outcomes will be determined by multivariate regression techniques.

Conclusions

Understanding the factors associated with optimal vaccine response among the elderly is vital for developing an effective psycho-behavioural adjuvant to enhance vaccine efficacy in older adults.

Ruth Baker 2013

Maternal depression and the risk of injuries in children aged 0-4 years: a population-based cohort study

Background

The relationship between maternal depression and childhood injuries is underexplored, with existing studies relying on maternal reporting of injury occurrence. We aimed to estimate the incidence of three common childhood injuries according to whether the mother had antenatal depression (AN), postnatal depression (PN), or both.

Method

Using a cohort of 209,418 mother-child pairs who had linked primary care and hospitalisation data from the Clinical Practice Research Datalink and Hospital Episode Statistics for the period 1997-2014, we estimated the incidence of poisonings, fractures and burns per 10,000 person-years (PY) from birth to the child's fifth birthday, stratified by whether the mother had AN, PN or both. Adjusted incidence rate ratios will be estimated using Poisson regression.

Findings

Crude injury rates were higher for each injury type among children whose mothers had AN and/or PN depression. Poisoning incidence was 63.1 per 10,000PY for children of mothers with AN (95% confidence interval 52.1-76.4), 62.2 (55.4-69.8) for PN, 78.4 (67.3-91.4) for both AN+PN, compared to 35.5 (34.1-37.1) among children whose mothers did not have perinatal depression. Similar patterns were seen for fractures and burns, with those exposed to perinatal depression having rates of fractures and burns of 101-106/10,000 PY and 78-87/10,000 PY, respectively. Comparatively, rates of fractures and burns were 87.6 (85.3-90.0) and 59.2 (57.4-61.2), respectively, for those unexposed to perinatal depression.

Interpretation

Both antenatal and postnatal depression were associated with higher crude rates of three common childhood injuries. Maternal depression is potentially an important modifiable risk factor for child injury.

Ashley Bryce 2013

Background

The faecal reservoir provides optimal conditions for the transmission of resistance genes within and between bacterial species. As key transmitters of infection within communities, children are likely to be important contributors to endemic community resistance. We sought to determine the prevalence of antibiotic-resistant faecal E. coli from healthy children worldwide, and investigate the impact of routinely prescribed primary care antibiotics to that resistance.

Methods

We systematically searched for studies investigating faecal carriage of resistant E. coli in healthy children and the relationship between previous routine use of primary care antibiotics and resistance. We calculated pooled resistance prevalence for commonly prescribed primary care antibiotics, stratified by study country Organisation for Economic Co-operation and Development (OECD) status. We conducted random-effects meta-analysis to quantify the association between previous antibiotic exposure and resistance.

Results

Thirty-four studies investigating resistance in 10,563 E. coli faecal isolates were included. In OECD countries, the pooled resistance prevalence to trimethoprim was 40.6% (95% CI: 18.2-63.0%); tetracycline 37.4% (28.9-45.9%); and ampicillin 33.9% (26.6-41.3%). Resistance in non-OECD countries were uniformly higher: trimethoprim 67.5% (32.2-100%); tetracycline 71.7% (54.5-88.9%); and ampicillin 64.5% (50.3-78.7%). We found evidence of an association between primary care prescribed antibiotics and resistance, persisting for up to three months (OR 1.65; 95% CI: 1.36-2.0).

Conclusions

Resistance is common to many primary care prescribed antibiotics among faecal E. coli isolates carried by healthy children, with higher resistance rates seen in non-OECD countries. Carriage of resistant faecal E. coli may persist for up to three months post-antibiotic treatment.

Edmore Chamapiwa 2013

Application of Marginal Structural Models (MSMs) to unbalanced longitudinal health data

Background

Marginal Structural Models (MSMs), a class of structural causal models, are being increasingly used in the analysis of complex longitudinal health data because of their ability to give unbiased effect estimates of a time-varying treatment in the presence of time-varying confounding/mediating covariates. However, MSMs have shown good performance to settings where observations occur at regularly separated time points for all patients, whereas in "real-life" health record data, different patients are commonly seen and measured at different and irregular time points. The impact of unbalanced, but more realistic, data on the performance of MSMs is unknown.

Objective

To evaluate the performance in effect estimation of inverse-probability-weighted MSMs in unbalanced longitudinal data

Methods

A simulation study was conducted to compare treatment effect estimates from inverse-probability-weighted MSM, unadjusted generalised estimating equation (GEE) model and adjusted GEE model of a hypothetical treatment model for type 2 diabetes (T2DM). Unbalanced longitudinal data was generated by sampling the time between consecutive visits for each individual from an inverse Gaussian distribution. Treatment at each observation time was sampled from a Bernoulli distribution with likelihood of getting treated dependent on the confounder level, and confounder values were sampled from an inverse Gaussian distribution. Outcome values at each observation time were generated using a mixed effects model. Data simulation and analysis were conducted in R.

Results

This simulation study shows that inverse-probability-weighted MSMs continue to give unbiased effect estimates when times between consecutive visits of unbalanced longitudinal data come from an inverse Gaussian distribution model.

Sonia Coton 2013

Evaluating recording of adverse pregnancy outcomes in diabetic pregnancy using UK primary care database

Objectives

This study evaluated the recording of five adverse pregnancy outcomes related to pregestational diabetes in pregnancy. The outcomes of interest were: pre-eclampsia and gestational hypertension; difficult delivery (a composite of forceps and ventuose assisted delivery); delivery by caesarean section; perinatal death and major congenital anomalies.

Data

We used data from The Health Improvement Network (THIN), which is an electronic primary care database of medical records from GPs starting in the 1990s.

Methods

Pregnant women with and without pregestational diabetes aged 16 years and older, permanently registered with a GP and delivering between 1st January 1995 and 31st December 2012 were identified. THIN was searched using Read and additional health (AHD) codes to identify women who experienced each outcome. The prevalence of each outcome was calculated.

Preliminary Results

We identified 400,700 pregnancies recorded in THIN of which, pregestational diabetes affected 1%; 0.4% type 1 diabetes (T1D), and 0.6% type 2 diabetes (T2D). Compared to pregnant women without diabetes women with pregestational diabetes were twice as likely to experience: preeclampsia and gestational hypertension (1% versus 2.3%) and perinatal death (0.4% versus 1%). Major congenital anomalies affects 4.5% of T1D pregnancies compared to 2.5% of T2D pregnancies. A third of pregnant women with T2D deliver by caesarean section compared to 49% of women with T1D. Difficult delivery affects 6.5% of non-diabetic pregnancies, 6% of T1D pregnancies and 3.8% of T2D pregnancies

Ben Fletcher 2013

Self-monitoring blood pressure in hypertension, patient and provider perspectives; a systematic review and thematic synthesis

Objective

To systematically review the qualitative evidence for patient and clinician perspectives on self-measurement of blood pressure (SMBP) in the management of hypertension with a focus on: how SMBP was discussed in consultations; the motivation for patients to start self-monitoring; how both patients and clinicians used SMBP to promote behaviour change; perceived barriers and facilitators to SMBP use by patients and clinicians.

Methods

Medline, Embase, PsycINFO, Cinahl, Web of Science, SocAbs were searched for empirical qualitative studies that met the review objectives. Reporting of included studies was assessed using the COREQ framework. All relevant data from results/findings sections of included reports were extracted, coded inductively using thematic analysis, and overarching themes across studies were abstracted.

Results

Twelve studies were included in the synthesis involving 358 patients and 91 clinicians. Three major themes are presented: interpretation, attribution and action; convenience and reassurance v anxiety and uncertainty; and autonomy and empowerment improve patient-clinician alliance.

Conclusions and practice implications

SMBP was successful facilitating the interaction in consultations about hypertension, bridging a potential gap in the traditional patient-clinician relationship. The target of SMBP should not be seen to be patients or clinicians separately, but the patient-clinician partnership.

Sarah Hardoon 2013

The importance of accounting for preventive treatment use in risk score development studies

Background

Risk scores are used in different clinical contexts to identify individuals at high risk of developing a particular outcome, e.g. cardiovascular disease (CVD), for targeted intervention. New scores are continually developed, often derived from contemporary cohort studies, which typically include people who initiate preventive medications, e.g. statins for CVD, during follow-up ("treatment drop-in").

Aim

To investigate the extent and impact of statin treatment drop-in in a CVD risk score development cohort.

Methods

A cohort, typical of cohorts used for CVD risk score development, was derived from The Health Improvement Network primary care database, comprising 957,638 individuals aged 35-74 years with no CVD or statin use at baseline. The cohort was followed for 11 years from 2003. A CVD risk score derived from the cohort was applied to a separate validation cohort to assess the impact on individual patient risk.

Results

15% of the cohort received statins during follow-up (30% among those aged 60-74 years), for a median of 4.2 years (IQR 1.79-6.89). When the risk score derived from the cohort was applied to the validation cohort, 4% of men and 3% of women were misclassified as low risk (35% and 20% for men and women aged 60-74 years).

Conclusions

Treatment drop-in is extensive and may lead to underestimation of patient risk. Future research will investigate methods to account for treatment drop-in in risk score development studies to ensure risk score validity.

Toby Helliwell 2013

The management of Giant Cell Arteritis in general practice

Background

Giant Cell Arteritis (GCA) is the commonest large vessel vasculitis. Untreated GCA can lead to permanent visual loss, thus it is essential GPs recognise and instigate appropriate management at an early stage.

Objective

To investigate the management of GCA in UK General Practice using mixed methods.

Methods

A cross-sectional postal questionnaire survey of UK GPs and a qualitative semi-structured telephone interview study was undertaken. Simple descriptive analysis was used for quantitative data. Thematic analysis was used for open ended questions and transcribed interviews.

Results

1249 questionnaires were returned. 70.4% of responders indicated that they had managed a patient with GCA. 78.7% reported that they initiated treatment with appropriate doses of prednisolone. 20% would refer patients immediately to hospital without doing any investigations whereas 16.5% would only refer if initial investigations were abnormal. Less than half of GPs would initiate treatment prior to referral.

There were marked reported differences in referral pathways with 38.3% referring to rheumatology, 29.3% to ophthalmology and 11.5% referring to general medicine. Thematic analysis of free text comments and transcribed interviews highlighted the difficulties GP have with accessing specialist care with some responders having to arrange temporal artery biopsy prior to specialist review. GPs were also concerned about a lack of fast track pathways to support this patient group.

Conclusions

There are marked differences in the management of patients with GCA in the UK, with conflicting referral pathways and difficulties in accessing appropriate services. The development of a national standard for fast tracking suspected GCA patients to relevant expertise and further clinical education of GPs would be beneficial to improve care and outcomes for patients with GCA.

Feroz Jadhakhan 2013

A systematic review investigating the cumulative of Chronic Kidney Disease in young adults with Impaired Glucose Tolerance

Objective

It is known that risk of chronic kidney disease (CKD) is elevated in patients with diabetes mellitus but it is not clear whether the risk is also elevated with impaired glucose tolerance (IGT).

Methods

Review of CINAHL, EMBASE, MEDLINE, PubMed, Cochrane libraries and grey literature were conducted from inception to January 2015. Studies including young adults with IGT and reporting any of the following CKD markers were included: eGFR, ACR, proteinuria ≥1, SCr and CrCl levels. Risk estimates of CKD were grouped separately according to effect measures and CKD markers. Pooled estimates of OR and HR using a random effect model were combined in separate meta-analyses. Adjusted and unadjusted pooled estimates were reported. Studies where effect measures could not be combined, results were reported narratively.

Results

A positive association was found between IGT compared to normoglycaemia and development of CKD determined by (eGFR<60ml/min.1.73m2). Summary effect (unadjusted OR: 1.31; 95% CI, 0.99, 1.73), and unadjusted HR (1.24; 95% CI, 0.70, 2.20). The strength of association was significant in studies adjusting for confounders. Summary effect (adjusted OR: 1.13; 95% CI, 0.81, 1.57) and adjusted HR (1.18; 95% CI, 0.90, 1.56). Adjusted and unadjusted RR of CKD also shows a significant association (RR: 1.28; 95% CI 0.94, 1.75; RR: 1.22; 95% CI 0.89, 1.07).

Conclusion

Patients with IGT are at higher risk of developing CKD compared to patients with normoglycaemia. Reduced renal function determined by any of the CKD markers shows a significant association in patients with IGT.

Cliona McRobert 2013

Selecting Primary Care Treatment for Patients with Shoulder Disorders: International Conjoint Analysis Study

Objectives

To investigate how patient attributes influence clinicians' treatment choices in patients with shoulder pain.

Content of Presentation

International online conjoint analysis survey results.

Relevance/Impact

Primary care shoulder pain treatments include: (i) advice+analgesia, (ii) steroid injection, and (iii) physiotherapy, however optimal treatment selection rationale is unknown. Systematic review and expert consensus identified 12 patient attributes relevant to treatment selection, which were used to develop hypothetical patient profiles for an online international conjoint analysis study. Hierarchical multinomial analysis identified each attributes' impact on likelihood of selecting steroid injection or physiotherapy over advice+analgesia.

Outcomes

Data was received from 387 clinicians from 31 countries (64% UK). Patient attributes that discriminated between treatment choices included; lack of condition improvement, previous positive response to injection or physiotherapy, and presence of weakness or instability. Furthermore, clinicians selected steroid injection over advice+analgesia for patients with sleep disturbance (Relative Risk Ratio RRR(95%CI)=1.49(1.45,1.95)) but were less likely to select physiotherapy (RRR=0.67(0.55,0.82)). Similar results were found for high pain severity. Patients' treatment preference significantly influenced clinicians' treatment choice. Co-morbid neck pain and overuse significantly influenced choosing physiotherapy but not injection. Severe work/function impact increased injection but not physiotherapy selection, whilst having a traumatic onset or unstable diabetes or cardiac problems reduced injection selection.

Discussion

This study has quantified the relative importance of different patient attributes in the selection of shoulder treatments by clinical experts. Individual patient data analysis is underway to test if the attributes identified in this study indeed modify the effects of treatment.

Jane Vennik 2013

Implementing autoinflation as a treatment for glue ear in primary care: A qualitative study using the normalization process theory

Objectives

Recent evidence has found autoinflation to be an effective, non-surgical treatment for symptomatic children with glue ear. However it is uncertain about what factors might influence its wider implementation in the primary care setting. Using the normalization process theory (NPT) as a theoretical framework, this qualitative study aims to explore the views and experiences of GPs to understand how autoinflation can become 'routinized' and 'embedded' in every day primary care practice.

Methods

Semi-structured interviews were conducted with a purposive sample of 31 GPs from 12 CCG regions in the UK. Transcripts were analysed using a thematic framework approach, facilitated by computer software. Themes and sub-themes were consequently mapped to the four constructs of NPT.

Results

Autoinflation was described as a low-harm, low-cost intervention with a logical mode of action, however there were reported concerns about credibility of a nasal balloon treatment and the lack of widely available evidence (coherence). Whilst GPs regarded training of families in the use of autoinflation to be their responsibility, most considered that nurses or pharmacists could deliver the training if the issues were addressed about time pressures and financial considerations (cognitive participation). Concerns were raised about the time to prescribe autoinflation during a routine consultation. A web-based training video and demonstration pack were described as important to supplement training given by the practice staff (Collective action). GPs would appraise the effectiveness of autoinflation from experience of use within their practice population (reflexive monitoring).

Discussion

Successful implementation of autoinflation in primary care requires addressing issues about how the intervention is perceived by GPS and how it fits with local policy, practice and guidelines. Training in the use of the nasal balloon could be supplemented with good quality videos and online resources, which would minimise the burden on the consultation process. NPT proved useful in conceptualising the issues around the implementation of autoinflation in the context of primary care, and will help direct the development of a web-based support/training system for families.

Paula Dhiman 2014

The added value of Bone Mineral Density in Fracture Risk Prediction: a Cost Effectiveness Analysis

Background

Fracture risk prediction tools are used in primary care to identify patients most likely to benefit from treatment to prevent fragility fractures. Currently, measure of bone mineral density (BMD) is optionally used as part of fracture risk assessment; and NICE clinical guidance has recommended research to evaluate the added value of BMD to fracture risk prediction. The aim of this study is to evaluate the added value of bone mineral density to fracture risk assessment used in primary care.

Methods

Prospective cohort study using data collected from the Aalborg University Hospital Record for Osteoporosis Risk Assessment (AURORA). Fracture risk tools were developed with and without BMD using Cox regression for a fragility fracture outcome (hip, spine, forearm, pelvis, and humerus); and were validated using calibration and discrimination measures to inform a cost-effectiveness analysis using a decision tree framework.

Results

Bone mineral density showed a strong association with a fragility fracture ($p<0.001$). Adding continuous and categorical BMD measurement to fracture risk prediction showed a 1.15% increase and 0.62% decrease in Harrell's C – Index, respectively. Further, adding continuous BMD measurement to standard fracture risk factors produced and ICER of £346.58 (-£4,094.54 to £4,270.29) per percentage unit increase in Harrell's C-Index. The maximum probability of adding BMD to standard fracture risk factors being cost-effective is 0.6 with a minimum willingness the pay of £42,000.

Conclusion

Bone mineral density showed added value to fracture risk prediction; however it was limited to its continuous t-score format; adding categorical BMD did not improve Harrell's C-Index.

Adam Geraghty 2014

Distinguishing emotional distress from psychiatric disorder in primary care patients

Detection of psychiatric disorder in primary care is a complex issue. Distinctions between 'normal' emotional distress and psychiatric disorder depend on how disorder is conceptualised. The aims of the current project are to use existing and new datasets to explore the nature of these conceptualisations and subsequent implications by examining 1) quantitative severity measures 2) primary care patients' perceptions and understanding of their symptoms, and 3) General Practitioner's (GP) accounts of distress/disorder distinctions. A quantitative study was conducted showing that the number of patients classified as 'cases' of disorder reduces when using a psychometric scale with a multidimensional structure, in comparison to often used one-dimensional scales such as the PHQ-9. In a second study, qualitative analysis highlighted that patients use disorder terms in many different ways that may have important implications for GP consultations and the subsequent course of their care. Finally, the methods of a third, ongoing study will be described. In this final study GPs are being interviewed to determine how they conceptualise psychological disorder, and how these conceptualisations may affect consultations with patients presenting with psychological symptoms.

Alison Gregory 2014

Preventing the ripple-out effect: developing support for relatives, friends, colleagues and neighbours of domestic violence survivors

Women experiencing domestic violence often choose to discuss their situation or seek support from friends, relatives and colleagues, even if they don't access professional support. The people in this network have the potential to play significant roles, with positive social support buffering against effects on survivors' physical health, mental health and quality of life, and protecting against future abuse. What's been missing is information about how impacts experienced by survivors might radiate to effect the wellbeing of adults close to them. My PhD explored this, and indicated that impacts were substantial, diverse, and that there was clearly a need for support.

The long-term vision for this research is about better equipping and supporting friends and family members of survivors, in order to better support survivors, and part of this is understanding how informal supporters currently access support for themselves. Around 7% of calls to the National Domestic Violence Helpline are from people providing informal support to survivors but little information is routinely collected about these calls. During the launching fellowship, I have carried out focus groups with Helpline staff to investigate this. I have also secured further funding to carry out secondary analyses of data collected during my PhD to directly explore supporters' views about what help might be useful, and to conduct a systematic literature review of existing support interventions developed for carers of people with physical and mental health conditions. This preliminary work will underpin the development and trialling of an intervention to support those informally supporting survivors.

David Jameson 2014

Perspectives of General Practitioners on potential use of a self- monitoring application (ClinTouch) for people with serious mental illness (SMI) in a primary healthcare setting

Background

People with SMI are usually asked about experience of symptoms at intermittent appointments with health care professionals, but have problems recalling how symptoms have changed between appointments. This can be a significant barrier to accessing treatment and support at the right time in order to prevent relapse, and is a barrier to self-management based on insight into triggers and mediating factors on symptoms. The University of Manchester has developed a smartphone application called ClinTouch, which is based on a validated and routine measure of symptoms (PANSS). The feasibility and validity of the system has already been demonstrated in secondary care. Current work is also exploring use of the system for monitoring physical health in people with SMI which is important due to high co-morbidity and reduced survival in this population.

Aims

This study explores the views of General Practitioners about using such a system, including attitudes towards the ClinTouch application, feasibility and perceived barriers to its use in primary care. In addition we will explore views on using eHealth applications for other conditions in primary care. The results of this study will improve our understanding of the potential for using self-monitoring eHealth applications in primary care.

Methods

Qualitative semi-structured interviews are currently being conducted with general practitioners recruited from the greater Manchester area (approximately10).

Analysis

The interviews will be audio-recorded, transcribed and analysed using thematic analysis techniques to identify key themes.

Results

The results will be analysed and completed towards the end of 2015.

Ingrid Muller 2014

Developing accessible web-based support for people with COPD

Aim

The 'Healthy Living with COPD' intervention has been developed to examine the potential for brief digital interventions to provide enhanced support and encourage physical activity for people with COPD.

Method

The intervention content was developed in consultation with an expert panel and PPI representatives, drawing on psychological theory and behaviour change techniques. The intervention was developed using free LifeGuide software, a platform for developing internet-based health interventions. Intervention design was interactive, tailored to individuals, and aimed to be suitable for people with all levels of health literacy.

Results

A brief digital intervention that can be accessed by PC or smart phone has been developed to be highly interactive and tailored to the individual. The intervention follows a quiz format, physical activity tips and a physical activity planner. Qualitative testing is currently underway to assess the acceptability and usability of the intervention before testing it in a feasibility RCT later this year.

Shoba Poduval 2014

Online self-management education for newly diagnosed patients with Type 2 Diabetes: a pilot study

Background

Type 2 Diabetes Mellitus (T2DM) is one of the most prevalent non-communicable diseases in the world affecting 3.8 million people in the UK alone. Annually £9 billion is spent on diabetes in the UK. Many of these costs are due to preventable complications. Data suggests that improved self-management can reduce the risk of complications fourfold. Uptake of self-management education programmes has been low, and one possible reason for this is that almost all are delivered through group-based sessions. Our research seeks to provide a more effective way of delivering self-management education to people with T2DM.

Aims

I am working with a multidisciplinary team at UCL who have developed an online structured education programme called "HeLP-Diabetes: Starting Out". The intervention has the potential to provide easily accessible self-management education to a large number of patients in a cost-effective way. A pilot study is needed to determine its acceptability and effectiveness, in order to optimize the programme and inform the design of a feasibility trial. We will be contributing towards the body of knowledge on computerised self-management programmes for long term conditions.

Methods

We have designed a single arm mixed methods study to determine follow-up rates; uptake and adherence; data quality; changes in self-reported knowledge, self-efficacy, health behaviours, and diabetes-related distress; and resources required.

Results

Results will be analysed and reported January-March 2016. The results of this research will allow us to apply for competitive funding for a feasibility study and subsequently for a definitive Phase 3 RCT.

Sarah Stevens 2014

Variability in blood pressure: true effect or much ado about nothing? A systematic review and meta-analysis of the influence of blood pressure mean and variability on outcomes

Mean blood pressure (BP) is an established risk factor for cardiovascular disease (CVD) used to diagnose and monitor hypertension. Variability in BP has been considered historically as a "nuisance" phenomenon to be overcome by improved monitoring, but more recently as a risk factor in its own right. Understanding the true impact of variability has been difficult due to variation in methodology and presentation of results. We aimed to comprehensively synthesise the existing literature concerning the effect of BP variability in the short, medium and long-term on CVD and mortality outcomes. Results from the systematic review will be presented and discussed, in particular with respect to CVD risk prediction and patient management in primary care.

Emily Wersocki 2014

The association between long-term opioid use for chronic non-cancer pain in females and endocrine side effects: a comprehensive systematic review of the literature

Background

22% of those attending primary care suffer from chronic non-cancer pain (CNCP), with women affected more often than men. 12% of all affected patients are prescribed opioids. There is good evidence that long-term use is related to hypogonadism in men and in women using heroin, however the relationship to therapeutic opioid use in women is unclear.

Objectives

To conduct a comprehensive systematic literature review of hypogonadism in women (<55 years old) treated with long-term opioids (>1 month) for CNCP.

Methods

A search of seven databases including EMBASE and Medline was undertaken (October 2014). The search contained key words for opioids and side effects and found 10684 papers. Titles were screened using predefined criteria by a single reviewer and abstracts and full texts were reviewed by two independent reviewers (third for any disagreements).

Results

12 full texts were included covering oral (6), intrathecal (5) and transdermal opioids (1). Amenorrhoea occurred in 31-71% of those receiving intrathecal opioids and 23-52% using oral opioids. Decreased libido was reported in 2 intrathecal studies (71% and 100%) and one oral (61%). Two out of 10 studies in which hormonal assays were made showed a statistically significant decrease in hormone levels.

Conclusions

This review supports the view that there is a potential relationship between the use of long-term opioids in women and hypogonadism. This may not be seen in all opioids and the mode of administration, duration and dose might influence associations. Further investigation is required with larger cohorts and analysis of different delivery methods.

Christos Grigoroglou 2015

Investigating the relationships between overall quality of care of Primary care,disease-specific levels of care and outcomes

My research will contribute to the understanding of the relationships between overall primary care quality of care, costs, disease-specific levels of care and outcomes. This study will use novel spatial-analysis methodologies to investigate and quantify the relationships between quality of care as measured by achievement across clinical indicators of a national pay-for-performance scheme; the Quality and Outcomes Framework, primary care costs and additional factors to population level outcomes. The spatial analysis will be conducted at the Lower Layer Super Output Area (LSOA) level and will look at data on pollution, smoking, obesity, deprivation and demographic characteristics. This framework will allow to explore the relationships that arise from the nature of the spatial units as well relationships that arise from the variables under study.

Additional research questions will involve the investigation of the relationships between Index of Multiple Deprivation (IMD) sub-scales on obesity, mortality and hospitalisation at the population level. Mediating and moderating relationships will be considered and I will identify the most important predictors of adverse outcomes. Moreover, I will explore the continuity of care literature and consider advanced methods to develop and quantify a continuity of care index through involvement of patient-level data from the Clinical Practice Research Datalink (CPRD). Consequently, the developed index will be linked to outcomes such as hospitalisation, mortality, referrals and prescribing costs. Finally, I aim to pursue linkage of the CPRD data to patient satisfaction data, at practice-level, and investigate if there is a relationship between continuity practice scores and patient satisfaction.

2015 Cohort

Isabel Lane	Bristol
Sophie Turnbull	Bristol
Gemma-Claire Ali	Cambridge
Claire Burton	Keele
Lucy Riley	Keele
Christos Grigoroglou	Manchester
Bethany Bareham	Newcastle
Amy O'Donnell	Newcastle
Sarah Audsley	Nottingham
Elizabeth Fergie	Nottingham
Stephen Weng	Nottingham
Marcia Clark	Nottingham
Charlotte Albury	Oxford
Oghenekome Gbinigie	Oxford
Rachel Ryves	Southampton
Rosie Stanford	Southampton
Nathan Davies	UCL
Marie-Laure Morelli	UCL
Claire Oakland	UCL

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