SCHARR PGR RESEARCH DAY

SCIENTIFIC PROGRAMME

25TH June 2015
9:00 Coffee
9:30 Welcome and introductions
9:45 Session One
11:00 Coffee
11:15 Session Two
12:30 Lunch
13:30 Session Three
14:30 Coffee and Poster judging
15:00 Session Four
16:00 Key note speaker – Lucy Lee
SESSION ONE

Louise Newbould - 9:45-10:00
The use of telemedicine for remote health care monitoring of older adults in care homes in Yorkshire and the Humber

Fei Qu - 10:00-10:15
The noise impact of wind power projects on human health and well-being

Katherine Roberts - 10:15-10:30
Developing a brief diet quality assessment tool for population level surveillance in the United Kingdom

Amy Whitehead - 10:30-11:00
Designing randomised controlled trials based on pilot trials

Coffee and poster judging  11 – 11.15

SESSION TWO

Madeleine Harrison 11:15-11:30
Title: StepByStep computer therapy approach: establishing the key components and methods of measurement

Mark Jayes 11:30-11:45
Title: Development and evaluation of a Mental Capacity Support Tool

Sarita Panday 11:45-12:00
Title: Factors that promote and hinder provision of maternal health services by Female Community Health Volunteers (FCHV) in rural Nepal

Phoebe Pallotti 12:00-12:30
Title: Young mothers’ negotiations of infant feeding: a qualitative study with ethnographic methods.

Lunch: 12.30-1.30
MORNING

SESSION THREE

Jake Andrews 13:30-13:45
Title: Using Technology to Improve Early Detection of Mental Health Conditions in Later Life

Maysam Abulwahid 13:45-14:00
Title: How senior emergency doctors spend their time at the emergency department (ED).

Kate Doran 14:00-14:30
Title: ‘So what?’: the experience and outcomes of using a tailored triangulation protocol to integrate the findings of my PhD’s two first-order qualitative studies

Coffee and poster judging - 14.30-15:00

SESSION FOUR

Daniel Gladwell 15:00-15:30
Title: Aspiring to independence: A narrative analysis of young people with cystic fibrosis, asthma and healthy controls.

Munya Dimairo 15:30-16:00
Title: Meandering journey towards routine trial adaptation: survey results on barriers to use of adaptive designs in confirmatory trials

Key note speaker – Lucy Lee 16:00-16.45
“Life after your PhD...what's next?”

Closing remarks and poster award 16.45-17:00
1. How doctors spend their time in the emergency department
   Maysam A Abdulwahid

2. Youth violence prevention in Mexico: A complicated context for policy-making
   based on evidence synthesis
   Erika E Atienzo de la Cruz

3. Antiretroviral adherence amongst men who have sex with men in Nigeria
   Abisola O Balogun

4. A study of readiness to engage in psychosocial interventions by people post
   dementia diagnosis, and their supporters
   Becky Field

5. A critical overview of reviews on the validity of generic preference-based
   measures of health
   Aureliano Paolo Finch

6. Development and evaluation of a Mental Capacity Support Tool
   Mark Jayes

7. Geographical accessibility to primary health care in Nigeria
   Edet E Otu
Louise Newbould
Supervisors: Prof. Gail Mountain and Prof. Mark Hawley

The use of telemedicine for remote health care monitoring of older adults in care homes in Yorkshire and the Humber

Recent research by Gordan A. et al. 2013 looking at the needs of care home residents found half needing help to mobilise, half were incontinent and three quarters had dementia. With other work showing health care provision to care homes in the UK often being inadequate. Surveys conducted by the NHS Trust (NHS, 2008) and Care Quality Commission (CQC, 2009) reported inequality in access to a range of services. Telemedicine (videoconferencing) may be one way of addressing this, providing access to a range of services, encouraging continuity of care without the inconvenience of travel, hopefully helping reduce inequalities in patient care (Coelho et al., 2005) whilst also improving access for those who may have physical disabilities (Hui, E. 2010).

In the UK so far, the videoconferencing service provided by Airedale has been noted as being of use for palliative care and GP triage. Internal evaluations show a decrease in A&E attendances, bed stays and length of stay (ANHSFT, 2014). Promoting care closer to home and helping avoid preventable hospital admissions, but more research needs to be done (Cruickshank. J. & Paxman. J., 2013 ). This study aims to undertake a robust external evaluation and will consider the following questions;

How do residents in care homes primarily access care?
What is the current provision of telemedicine in care homes in Yorkshire and the Humber?
For what purposes is the technology currently being used?
What are the barriers and enablers to the use of videoconferencing?

Fei Qu
Supervisors: Prof. Jian Kang (School of Architecture), Prof. Aki Tsuchiya (ScHARR)

The noise impact of wind power projects on human health and well-being

With an international growth of wind power sector and more wind farms close to residential areas, the potential adverse health impacts of wind turbine noise have been attracting great interest. This research investigates the relationships between exposure to wind turbine noise, the evaluation of that noise by residents, and their subjective well-being. Paper questionnaires have been distributed to residents across three sample wind farm sites in the UK. Wind turbine noise levels are calculated for sampled households. Finally, the impact of noise levels on human health and well-being is modeled using regression analyses on multiple dimensions, controlling for a series of covariates.

The result shows that levels of wind turbine noise affect self-reported notice and annoyance of the noise by residents. Levels of wind turbine noise exposure are also found to be associated with self-reported adverse health effects including headache, nausea and stress. However, no relationships are found between noise levels and residents’ well-being measured in terms of self-reported happiness, health and life satisfaction. Residents’ personal evaluations of wind turbine noise are not found to influence their well-being either. Residents’ psychological response to wind turbine noise is also found to be influenced by contextual factors such as residents’ views on wind power projects, the visibility of wind turbines from window, personal sensitivity to noise and socio-economic status.

The research will provide empirical support for policy makers, planners and other stakeholders in assessing the noise impacts of wind power projects on health and well-being of those living close to them.
Katherine Roberts
Supervisors: Dr Janet Cade (School of Food Science and Nutrition, Leeds), Dr Jeremy. F. Dawson (ScHARR), and Prof. Michelle Holdsworth (ScHARR)

Developing a brief diet quality assessment tool for population level surveillance in the United Kingdom
The objective is to explore dietary patterns in the UK population to identify foods and wider determinants which may discriminate between high and low quality diets. The findings will be used to develop a brief dietary quality assessment tool for population level surveillance.
Principal Component Analysis was undertaken to identify factors representing dietary patterns using National Diet and Nutrition Survey data from 2008-2012 (n=2083; mean age 49y; 43.3% male, 56.7% female). Regression analyses were used to explore associations between factors, sample characteristics and nutrient levels derived from dietary intake and biomarkers.
Four patterns explained 13.4% of the total variance and were labelled as: ‘High snacks and fast food’ (HSFF), ‘High fruit, vegetables and fish’ (HFVF), ‘Cheese and white bread’ and ‘Processed meat, potatoes and beer’. Higher scores for ‘HSFF’ were positively associated with being male, a smoker or overweight/obese. This pattern was positively associated with intake of non-milk extrinsic sugars (NMEs), total fat and urinary sodium levels. Higher scores for ‘HFVF’ were inversely associated with a lesser household income, being male or a smoker. This pattern was inversely associated with intake of saturated fat, NMEs and urinary sodium levels and positively associated with intake of Vitamin C and plasma carotenoids.
The dietary patterns identified were characterised by intakes of particular foods and/or nutrients and associated with sample characteristics (e.g. sex, income, BMI, smoking status). These findings suggest that there may be foods and wider correlates which, in combination, may be useful proxies for monitoring dietary quality in populations.

Amy Whitehead
Supervisors/co-authors: Prof. Steven Julious (ScHARR), Dr Cindy Cooper (ScHARR), Prof. Mike Campbell (ScHARR)

Designing Randomised Controlled Trials based on Pilot Trials
The sample size justification is an important consideration when planning a clinical trial not only for the main trial but also for any preliminary pilot trial. When the outcome is a continuous variable, part of the calculation of a sample size requires an accurate estimation of the standard deviation of the outcome measure. It is optimal to have a similarly designed trial to assist in the estimation of parameters which will be used to design the main trial e.g. the standard deviation.
A pilot trial could be used to try to get an estimate of the standard deviation, which the investigators anticipate will be observed in the main trial. External pilot trials are conducted prior to the main trial and the results analysed separately from the main trial data. Internal pilot trials use an initial proportion of the main trial and the observations are included in the final analysis. However, pilot trials usually estimate the standard deviation parameter imprecisely.
This presentation will look at how we can choose an external pilot trial sample size in order to minimise the sample size of the overall clinical trial programme, the pilot and the main trial together. A method of calculating the exact solution to the required external pilot trial sample size when the standardised effect size for the main trial is known will be presented. However, it may not be possible to know the standardised effect size to be used prior to the pilot trial, and so approximate rules are also given. For a main trial designed with 90% power pilot trial sample sizes per treatment arm of 75, 25, 15, and 10 are recommended for standardised effect sizes that are extra small (≤0.1), small, medium or large respectively. The ideas will also be extended to look at internal pilot trial sample sizes.
Madeleine Harrison  
*Supervisors: Dr. Rebecca Palmer (ScHARR), and Dr Cindy Cooper (ScHARR)*

**StepByStep computer therapy approach: establishing the key components and methods of measurement**

Background: Stroke is the most frequent cause of aphasia, a condition which affects someone’s ability to produce or comprehend language. Face-to-face speech and language therapy is often not available through NHS services beyond the first few months post-stroke due to limited resources consequently clinicians are exploring technological solutions. The StepByStep© approach to long-term computerised aphasia therapy is a multifaceted intervention requiring a therapist to tailor the therapy exercises, regular self-managed practice on the computer supported by volunteers or rehabilitation assistants.

Aim: To determine the key components of the StepByStep approach, how they interact and how to measure them.

Methods: A nominated expert sampling strategy was utilised to identify participants to take part in qualitative interviews exploring their understanding of the StepByStep approach. One dyadic and five individual interviews were conducted with software designers, users and researchers both face-to-face and over the phone. The interviews were transcribed verbatim and analysed using thematic analysis in NVivo 9.

Results: Whilst there was significant variation in participants’ perceptions of the importance of certain components as a result of their relationship to the approach there was also substantial overlap in the components identified. Patient motivation or ‘buy-in’ was discussed by all participants with a focus on the personalisation or salience of the words used in the therapy program. Numerous measures were identified and the results have been collated and returned to the initial participants for them to rate their top ten process measures.

Conclusions: The StepByStep approach is a complex evaluation with a high level of interdependency between its core components. Once rated the process measures with the highest scores will be utilised within a process evaluation of the intervention fidelity of the StepByStep approach the effectiveness of which is being investigated in a large randomised control trial.
Development and evaluation of a Mental Capacity Support Tool

Introduction:
Healthcare professionals often need to assess hospital patients' mental capacity to make informed decisions about their medical treatment and discharge arrangements. This assessment is challenging, especially when it involves patients with communication disorders, who need additional support to understand information about decisions and express their choices.

Aims:
1. To develop a tool to support mental capacity assessment for hospital patients with acquired communication disorders;
2. To evaluate the tool's validity, reliability and acceptability to patients, carers and professionals.

Methods:
The tool is being developed using an iterative, user-centred design approach and will be evaluated using mixed methods. Literature reviews have been completed relating to: i) current mental capacity assessment practice; ii) the effectiveness of using accessible information to support the understanding of people with communication disorders. A focus group method has been used to explore local multidisciplinary hospital staff’s experiences of capacity assessment and their support needs. Currently, hospital staff, people with communication disorders and their family carers and design experts are collaborating with the researcher to design a prototype support tool. This tool will be piloted with hospital patients to investigate its usability and acceptability. An evaluation of its criterion validity and inter-rater reliability is planned.

Results:
The results of the literature reviews and the focus group study justify the rationale for and provide an initial specification for a support tool. Mental capacity assessment is an under-researched area of clinical practice. Practice varies and is not always consistent with the requirements of the Mental Capacity Act (2005). Focus group data indicate that a tool should be designed to prompt and aid staff to identify patients with communication disorders, propose ways to support their needs during capacity assessments and assess whether they understand information sufficiently to make informed decisions.
Factors that promote and hinder provision of maternal health services by Female Community Health Volunteers (FCHV) in rural Nepal

Background:
FCHVs provide maternal and child health services in Nepal. This study identifies the aspects that facilitate as well as those that become barriers to Maternal Health Service (MHS) delivery by FCHVs.

Methods:
Between May and September 2014, semi-structured interviews were conducted with 20 FCHVs, 26 local women and 11 local health workers. There were also four focus group discussions with 19 FCHVs. Thematic analysis was applied.

Results:
Money was the most commonly perceived facilitator and the most frequent barrier to FCHVs’ work in MHS. Availability of monetary incentives was reported to enhance FCHVs’ work because they found their voluntary work easier if they received reimbursement for expenses incurred. Absence or scantiness of monetary support was reported to be a major barrier in their service delivery and even reduced their work motivation. Apart from money, other common barriers for FCHVs in MHS delivery were reported as difficult transportation, illiteracy, increased workloads, and lack of supplies. Caste and ethnicity were reported to cause barriers in some communities including community misunderstandings between the paid health professionals and the volunteers.

On the whole, FCHVs enjoyed what they did because: FCHVs perceived their work as an opportunity to meet with friends; they were committed to their work; they valued training or learning opportunities; and they enjoyed the kudos. FCHVs reported their desire to serve people and were happy to do it. They also found the work interesting and also did it for their own satisfaction. Support from both public and private health centres remained vital.

Conclusion:
FCHVs provide MHS to women throughout the country. Efforts should be focused on recognising the aspects that make the role of FCHVs satisfying and the barriers that cause resentment so as to enable them to fulfil their role more effectively.
Phoebe Pallotti

Supervisors: Prof. Elizabeth Goyder (ScHARR), Prof. Sarah Salway (ScHARR)

Young mothers’ negotiations of infant feeding: a qualitative study with ethnographic methods.

Background:
In the UK, mothers under 20 are the age group least likely to breastfeed. Suggested factors include cultural constructions of normative behavior, environmental and practical barriers, and a lack of professional and community support. However, little is known about their entire journey through infant feeding and the interrelation of both known and novel themes. Thus the discussion of why young mothers are less likely to breastfeed is here reframed to account for overarching health and social inequalities as well as the habitus and embodied experience of the young mothers themselves.

Methods:
Ethnographic interviews and participant observation were used to explore the experiences of 10 young mothers aged 16-18 and their babies. The data were analysed using Thematic Network Analysis and the emerging themes developed into a coherent description of the influences on infant feeding practices and why these influences seem to lead to formula feeding.

Results:
The themes were structured as relating to the immediate context and the importance of family relationships; the external context of “public” spaces, which could include the home; and creating the “good” and “bonny” baby.
The synthesis of these themes suggests a coherent description of the lived experience of these young mothers which enhances understanding of their experience of motherhood and suggests potential future interventions to increase breastfeeding in this group. For example, support for milk expression and interventions that include the whole family may be of use to young mothers.

Conclusions:
The findings suggest both why breast feeding rates are low and why existing interventions have not significantly changed behavior. Interventions need to take account of the ways in which infant feeding is, for these mothers, a group project. Young mothers may not be able or willing to discount the family knowledge, practices and beliefs stemming from two (or more) generations of mainly bottle-feeding families.
Jake Andrews

Supervisors: Prof. Arlene Astell (ScHARR), Prof. Rob Harrison (Automatic Control and Systems Engineering).

Using Technology to Improve Early Detection of Mental Health Conditions in Later Life

Depression and anxiety can be debilitating conditions, with symptoms including physical pain, reduced motivation to leave one’s home, decreased pleasure in daily activities and increased risk of suicide. Depression and anxiety often present as a result of the changes that occur as we age, including changing role at retirement, bereavement, and onset of physical conditions with functional impairment. However, treatments for mental health conditions are available, and detecting the onset of these conditions early can improve outcomes. With technology, there is now potential for a freer flow of information between people at risk of these conditions and healthcare providers.

In this talk, I present three studies I am undertaking with the aim of developing technology for the early detection of depression and anxiety in older adults. The first study takes a machine learning approach to existing data on mood patterns and depression in older adults. Logistic regression and mixed effects modelling will be used to produce predictive models. The second study is a qualitative investigation to explore older adults’ feelings about technology-based monitoring, and to ascertain older adults’ preferences in user-interface design. The third is a prospective study to test the algorithms developed in Study 1 on at-risk populations.

The talk will provide a brief overview of each study, including methods to be employed and results to date.
Maysam Abulwahid

Supervisors: Prof. Suzanne Mason (ScHARR), Jannette Turner (ScHARR)

How senior emergency doctors spend their time at the emergency department (ED).

Background:
Given the demands placed on senior doctors in terms of time and expertise, it is valuable to summarise the literature that describes and quantifies how senior emergency doctors utilize their time. A better understanding of this will, in turn, assist policy makers to maximise the potential benefits that senior doctors confer.

Review question:
How senior emergency doctors spend their time at the emergency department (ED).

Design:
Systematic review.

Review methods:
Databases were searched for Time motion studies (TMS) examining the role how senior doctor spend their time in the ED published from 1998 to 2014. Studies were included if they were observational TMS or work-sampling studies, undertaken in Type I adult or mixed population EDs and described the activities of senior doctors. The systematic literature search was followed by assessment of risk of bias of each individual study fulfilling the inclusion criteria. Narrative synthesis was performed.

Results:
Ten TMS were included in the review. The majority were small single-site studies conducted in academic EDs. Generally, studies were liable to several biases. Time spent on direct patient care was the most commonly reported outcome. Direct patient care occupied around 28.1 to 40% of the senior doctors’ time with a mean, median of 33 and 32.7 respectively. In comparison, indirect patient care was reported by five. This ranged from 51.3% - 69% for academic senior emergency doctors and 45% for community ED senior emergency doctors.

Conclusion:
Senior doctors spend a significant amount of time on activities related to indirect patient care. Senior emergency doctors can manage several tasks concurrently in an interrupt-driven and busy environment.
Kate Doran

Supervisors: Prof Glenys Parry (ScHARR); Prof Gillian Hardy (Psychology); Dr Rosemary Barber (ScHARR)

‘So what?’: the experience and outcomes of using a tailored triangulation protocol to integrate the findings of my PhD’s two first-order qualitative studies

Background
The aim of my PhD research is to provide a preliminary investigation into what, within the service user experience of using computerised cognitive behavioural therapy for depression with case manager support, may contribute to improvement or lack of improvement in mental health. To this end, two concurrent qualitative studies were conducted within the NHS. The findings from the two studies were integrated (Moran-Ellis et al., 2006) by means of a tailored triangulation protocol (Farmer, Robinson, Elliott, & Eyles, 2006). This paper presents the process and findings of this endeavour.

Method
I briefly outline what I mean by ‘triangulation’ (Denzin, 2009) in the context of my thesis. I then describe the development of a triangulation protocol for local use before showing how it was applied in my PhD.

Findings
Analysis indicates full or partial agreement between the studies in all thematic domains. Although there are no instances of complete disagreement in the comparison of the two data sets, two of the eight themes in Study 2 show dissonance in the way Good and Poor Outcome groups address the theme, thus extending the theme’s semantic range, supported by empirical example. Additionally, for half of the eight themes in Study 2 at least some members of the Study 1 groups remain ‘silent’. These meta-findings enable a more transparent exploration of the patterning of such dissonances and silences. This leads to a grounded consideration of these meta-findings’ potential implications.

Conclusions
Each study alone provides part of the response to the research question, but together they contribute to a higher level of analysis and a broader understanding. Some of the complexities, challenges and gains from this triangulation are highlighted.
Daniel Gladwell  
*Supervisors: Prof. Aki Tsuchiya (ScHARR), Prof. Jenny Owen*

**Aspiring to independence: A narrative analysis of young people with cystic fibrosis, asthma and healthy controls.**

**Aims**  
To investigate the first person lived experience of young people, noting their accounts of how health affects the aspects of life they value.

**Methods**  
23 young people (aged 13-15) were interviewed using a biographical narrative approach starting with the open request, “please tell me the story of your life so far, all the events and experiences that were important for you, personally”. Young people with cystic fibrosis (CF), asthma and normal health were interviewed. Each subject’s interview transcript was analysed independently in order to develop a theory of the individual and their narrative. The findings from each individual were then compared with particular attention given to contrasting themes between the health groups.

**Results**  
Young people frequently recalled stories of events and experiences involving enjoyable times with friends and families. Many individuals explicitly and implicitly emphasised a desire to grow in independence. However, it was notable that this journey to independence was substantially more complex for young people with CF than it was for other health groups. The intensive treatment requirements and a sense that at any time health may deteriorate resulting in hospitalisation were given as reasons for making choices to ensure they remained near support and protection.

**Conclusions**  
Independence was a common aspiration across all groups interviewed. However the extent to which independence was enjoyed varied depending on the health status of the young person. More detailed research is required to explore the barriers to independence faced by young people with CF.
Munya Dimairo

Supervisors: Prof. Steven Julious (ScHARR), Prof. Sue Todd (Uni of Reading), Prof. Jon. Nicholl (ScHARR)

Meandering journey towards routine trial adaptation: survey results on barriers to use of adaptive designs in confirmatory trials

Adaptive designs are now considered innovative alternative trial designs with potential to improve efficiency in clinical trials research when used appropriately to answer research question(s). Despite this, their routine use is lagging far behind attention given to them in the statistical literature, particularly in publicly funded confirmatory trials. This study aimed to explore barriers, concerns and potential facilitators to appropriate use of adaptive designs in confirmatory trials.

Based upon themes drawn from in-depth interviews of key research stakeholders, we undertook cross-sectional, online follow-up surveys (November 2014 to January 2015) of; CTUs, public funders and industry in the UK. Observed response rates were: 55% (30/55) CTUs, 68% (17/25) industry and 41% (86/212) public funders. We employed Rasch analysis using Rating Scale Model to rank barriers and concerns in order of perceived importance for prioritisation. In this talk, we present survey findings on the perceptions of respondents and propose recommendations to facilitate appropriate use of adaptive designs in confirmatory trials.
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