UKCRC Public Health Research Centres of Excellence

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Abstracts for parallel sessions

Session 1a: Schools and families

Evaluating the WHO's Health Promoting Schools Framework: What works and where are the gaps?

Dr. Beki Langford (DECIPHer)

Background

There is a strong reciprocal relationship between health and education: healthy children achieve better educational outcomes which, in turn, are associated with improved health outcomes later in life. This relationship underpins the WHO's Health Promoting Schools (HPS) framework, which takes a holistic, settings-based approach to promoting health in schools. HPS interventions require action in the following three areas: curriculum, ethos/environment and links with families/communities. We undertook a Cochrane systematic review to assess the effectiveness of the HPS framework in improving students' health, well-being and academic achievement.

Methods

Our review focused on cluster randomised controlled trials of the HPS framework that targeted children and young people aged between 4-18 years. We searched a wide range of health, social science and educational databases and identified 54 studies eligible for inclusion.

Results

Almost half (27 studies) of the studies were from North America, with 13 studies from Europe, eight from Australia, three from China and one each from Mexico, India and Tanzania. Interventions focused on a wide range of health topics. The most common topics were physical activity/nutrition (25 studies), multiple risk behaviours (seven studies), smoking (five studies) and bullying (four studies). Very few studies focused on mental or sexual health (two studies each) and few presented any academic or school-related outcomes (five studies). There were positive intervention effects observed for physical activity, nutrition, alcohol, smoking and violence outcomes. Results for substance use and bullying outcomes were more equivocal but also showed a trend towards intervention effectiveness. The data for obesity outcomes (BMI/zBMI) were complex and equivocal. There was no effect seen for depression outcomes. It was not possible to combine the two sexual health interventions in a meta-analysis.

Conclusion

The HPS framework appears to be effective in improving certain health outcomes within schools, although we lack evidence of the long-term sustainability of such impacts. More research is needed to establish the effectiveness of this approach for mental health, sexual health and academic achievement.

Improving fast food environments around disadvantaged secondary schools: study rationale & methods

Michelle Estradé (SCPHRP)

Background

Nutrient standards for school meals in Scotland are statutory and well-defined, and the sale of foods high in fat, salt, and sugar in schools is limited by legislation. However, retailers operating near schools also have the potential to influence the nutritional quality of food and drinks consumed by children, as more than half of Scottish secondary pupils purchase food outside of school at lunchtime[1]. A recent study in Glasgow identified a large number of outlets that catered specifically to pupils by offering them special lunch promotions, and many of the foods they purchased exceeded recommended levels of energy, fat, saturated fat, and salt[2]. The Survey of Diet Among Children in Scotland (2010) also highlighted numerous concerns related to diet quality and obesity, particularly among children living in more deprived areas[1].

Design & methods

Independent businesses selling take-away foods near secondary schools with above-average free school meal entitlement in Aberdeen, Edinburgh, and Glasgow will be recruited for participation. Qualitative interviews will be conducted with 15-20 business owners and managers in order to identify challenges they might face in offering healthier menu options. The individual semi-structured interviews will cover topics such as views on healthy eating, food preparation methods, pricing, and menu offerings. Interviews will be recorded and transcribed, and undergo thematic analysis. Findings will be used to explore strategies for motivating and assisting food vendors in making healthy menu changes, as well as to inform future dialogue and collaboration between public health bodies and fast food vendors.

Making sense of school food practices: how families and schools experience the family-school interface around food and eating

Sarah MacDonald (DECIPHer)

Efforts to facilitate children's dietary health improvement have indicated the potential of interventions which link families and schools. Attempts to date have been undermined by ineffective linking mechanisms and a lack of understanding of the complexity of family life. In response to these challenges this PhD study is guided by a collective lifestyles framework which focuses on practices (rather than behaviours), agency (the power people have to change) and context (relationships with others, everyday activities and different settings) (Frohlich, Corin et al. 2001; Delormier, Frohlich et al. 2009).

Using the diary-interview approach (Zimmerman and Wieder 1977; Alaszewski 2006) accounts from eleven families in South Wales illustrate how families make sense of school food provision and school healthy eating activities in the context of their own daily food practices, and in relation to the tacit meanings behind these practices.

This presentation focuses on the messy nature of family-school relations. This includes exploring the connections and discontinuities between families and schools in terms of practices, priorities and contexts. Conclusions relate to moving beyond the two dimensions of power and resistance in order for links between families and schools to be more effective and meaningful.

Parenting and adolescent health: A review of reviews

John McAteer (SCPHRP)

Background & Objectives

Parenting influences adolescent physical and mental health, and uptake of health services and susceptibility to illness in later life. In 2012, the Scottish Government launched the National Parenting Strategy, the aim of which is improve the support available to families throughout Scotland. However, it is unclear what type of support is likely to be effective. This paper reports a review of reviews of parenting interventions targeting parents of adolescents to influence adolescent health outcomes. The review aimed to identify i) which interventions have been effective and for which outcomes, and ii) the characteristics of effective interventions.

Design & Methods

The Cochrane Library, Database of Abstracts of Reviews of Effectiveness (DARE) and the Medline database were searched for systematic reviews of interventions involving parents to influence adolescent health outcomes. Inclusion criteria were applied, data extracted and quality of the reviews assessed. The results will be presented narratively.

Main Findings

Eight reviews were identified, reporting 129 studies and 76 interventions. The reviews examined the impact of parenting interventions upon smoking, alcohol and substance use, and sexual health outcomes. This paper will report findings relating to effectiveness and characteristics of effective interventions.

Conclusions & Implications

Findings will be discussed in terms of their implications for policy, research and practice, with specific reference to Scotland and the National Parenting Strategy.

Session 1b: Physical activity

A systematic review, meta-analysis and meta-regression of the use of financial incentives to encourage uptake of healthy behaviours

Emma Giles (Fuse)

Objectives

Using financial incentives to encourage healthy behaviours is increasingly common. We assessed the effectiveness of financial incentives for encouraging uptake of healthy behaviours amongst adults living in high-income countries.

Methods

Searches of relevant databases and grey literature found 16 studies that met the inclusion criteria. These focused on smoking cessation (n=10), attendance for vaccination and screening (n=5), and physical activity (n=1). Meta-analyses and meta-regressions were conducted on three groups of comparisons: smoking cessation up to six months (n=13 comparisons), smoking cessation beyond six months (n=8 comparisons), and attendance for vaccination or screening (n=9 comparisons). Meta-regressions explored whether effect size varied by incentive value or (for smoking cessation studies only) follow-up period.

Results

Meta-analysis revealed that the average effect of financial incentives in all three groups was greater than control (relative risk (95% confidence intervals): 2.48 (1.77 to 3.46) for smoking cessation up to six months: 1.50 (1.05 to 2.14) for smoking cessation beyond six months; 1.92 (1.46 to 2.53) for attendance for vaccination or screening).

Meta-regression found no evidence that follow-up period was associated with effect size in any group of comparisons. There was some evidence that effect size increased with incentive value in smoking cessation studies beyond six months (beta (95%CI): 0.001 (0.0002 to 0.003)).

Conclusions

The available evidence suggests that the average effect of financial incentives is greater than that of usual care or no intervention for encouraging smoking cessation and attendance for vaccination and screening.

Exercise Referral Schemes: indoor versus outdoor activities

Dr. Lawrence Doi (SCPHRP)

Background

Exercise Referral Schemes (ERS) aim to treat or prevent ill health in individuals who have or are at risk of ill health by encouraging participation in physical activity. The majority of schemes offer activity to 'at risk' groups of people as well as the general population. Most ERS focus on indoor activities, such as swimming or going to the gym rather than outdoor activities. There is evidence that both outdoor and indoor exercise can be beneficial to health. However, what is not known is the relative effectiveness of indoor versus outdoor exercise, and whether the different settings confer different health benefits. In this collaborative project, we are working with a Local Authority (LA) and a third sector partners to pilot a randomised controlled trial on the effectiveness of indoor and outdoor exercise.

Aims/questions

To test the feasibility, acceptability and potential effectiveness of randomising patients, who are referred to ERS, to either indoor or outdoor activities.

Method

The study will employ both quantitative and qualitative methods, using a realist RCT approach. Patients who are referred to ERS will be randomised to either indoor activity (usual care provided by the LA) or outdoor activity (by the Conservation Volunteers Scotland and walking groups).

Phase 1. The primary objective of this phase is to provide data on the feasibility of recruitment and randomisation, adherence to the intervention, and outcomes of interest (specifically sustainability of physical activity, mental health and wellbeing and social connectedness).

Phase 2. This will involve theorizing and empirically examining underlying mechanisms as well as assessing the feasibility and acceptability of the interventions, and the research methods.

Results

We will present preliminary findings on outcomes, recruitment and randomisation.

Conclusions/points of interest

Findings from this study could allow for adaptation of the intervention or recruitment strategy, and inform decisions for a bigger study. It could also help councils and leisure trusts plan future health programmes and facilities, including new outdoor opportunities.

A randomised controlled trial to evaluate the efficacy of a 6 month dietary and physical activity intervention in prostate cancer patients receiving androgen deprivation therapy

Dr. Roisin O'Neill (CoEfPHNI)

Androgen Deprivation Therapy (ADT) use in prostate cancer patients is associated with adverse side effects including: changes in body composition; an increase in fat mass and a decrease in muscle mass, increased fatigue and a reduced quality of life (QoL). The aim of this study was to test the efficacy of a combined 6-month diet and physical activity intervention to reduce the side effects associated with ADT.

Prostate cancer patients receiving ADT were randomly assigned to either an intervention arm to receive individualised healthy eating advice plus physical activity advice (to achieve 30 minutes of brisk walking per day, 5 or more days per week) (n=47) or a standard care control arm (n=47). Baseline, 3 month and 6 month assessments included Body Mass Index (BMI), percentage fat mass, waist circumference, functional capacity (6 minute walk test), fatigue, QoL, and perceived stress scores.

At 6 months, weight, BMI and percentage fat mass decreased significantly ($p<0.001$) in the intervention arm compared with the control arm; the between group differences (adjusted for baseline values) were -3.3kg (95% CI -4.5, -2.1), -1.1kg/m^2 (95% CI-1.5,-0.7) and -2.1% (95% CI-2.8,-1) respectively. Waist circumference decreased and functional capacity increased in the intervention group compared to the control group; the between group differences were -3.3cm (95% CI-4.6, -1.9) ($P=0.009$) and +36.5m (95% CI 14.5, 58.4) ($p <0.001$) respectively. Improvements in fatigue, QoL and stress scores were also shown but were not statistically significant.

This intervention has proven beneficial at reducing the body composition changes associated with ADT. It would therefore be prudent to advise prostate cancer patients who begin ADT to modify their diet and lifestyle to help reduce these side effects.

Longitudinal analysis of self - reported mode, variety and frequency of physical activity and associations with objectively measured physical activity in British youth

Hannah Brooke (CEDAR)

Background

Promoting physical activity (PA) in youth is important for health but existing PA interventions have had limited success. We aimed to inform intervention design by i) describing dropout, continuation and uptake of specific activities over time; and ii) examining variety (number of different activities/week) and frequency (number of activity session/week) of activity participation and their associations with changes in objectively measured PA from childhood to adolescence.

Methods

At age 10.2±0.3 and 14.2±0.3 years, 319 children in the SPEEDY study (46% boys) wore GT1M Actigraph accelerometers for seven days and self-reported participation in 23 leisure-time activities. Associations of change in moderate-to-vigorous intensity PA (MVPA) (≥2000 counts/minute) with Z-score transformed (change in) variety and frequency were examined using multilevel linear regression, clustered by school, in simple and adjusted models.

Results

Dropout, continuation and uptake varied between activities, but overall variety and frequency declined (mean±SD Δvariety -3.1±4.4 activities/week and Δfrequency -7.2±12.0 session/week). ΔMVPA was not associated with variety or frequency at baseline, nor with Δvariety or Δfrequency ($p>0.34$ in all models).

Conclusion

Activity preferences change substantially over the transition to adolescence, which should be considered in PA interventions, but PA variety and frequency do not appear to be key elements to include.

Session 2a: Walking and cycling

Walking to work: the contribution to adult physical activity levels

Dr. Sunita Procter (DECIPHer)

Background

There is increasing evidence of the link between adult obesity levels and travel behaviour: countries with highest levels of active travel generally have the lowest obesity rates. Walking is a popular, familiar, convenient, and free form of exercise that can be incorporated into everyday life and sustained into old age. Walking at a moderate pace (5 km/hour) expends sufficient energy to meet the definition of moderate intensity physical activity. The study aims to objectively examine the contribution of walking to work on adult physical activity levels.

Methods

Employees (n=145) at 17 workplaces in Bristol, who lived within two miles of the workplace, were asked to wear accelerometers for seven days from waking in the morning to going to bed at night, and to carry a GPS receiver during the daily commute to and from work. GPS data were matched with accelerometer data to provide a measure of duration of the journey and associated physical activity. Outcome measures included: overall volume of physical activity; moderate to vigorous physical activity (MVPA) levels; temporal pattern of physical activity (to identify when activity has increased and whether there is a compensatory decrease in activity at other times); and objective measures of routes taken and physical activity associated with journey.

Results

Daily physical activity volume for employees using the car compared to those who walk (mean (SD)) of 310.5 (149.7) vs 570 (177) ($p<0.001$) counts per minute. MVPA in minutes for employees using the car compared to those who walk shows 41.4 (31.7) vs 84.4 (25.4) ($p<0.001$). Sedentary time in minutes for employees using the car compared to those who walked was 627.7 (73.8) vs 576.7 (94.8) ($p=0.017$). Employees who walked to work showed higher accelerometer counts per minute between 6-9am and 4-7pm which was maintained throughout the day compared to those who used the car. Combined GPS and accelerometer trace showed the journey to work provides employees with more MVPA.

Conclusions

We are not aware of any other study in adults using objective methods to measure the contribution of walking to work on physical activity levels. Our study clearly shows that the daily commute provides an opportunity for adults who live within walking distance of their workplace to meet their daily physical activity requirements and reduces sedentary time.

Predictors of change in walking and cycling to work and its impact on body mass index: evidence from the British household panel survey

Adam Martin (CEDAR)

Background

Population health might be improved if working-age commuters switched to walking or cycling as their primary method of travel, but few longitudinal studies assess predictors of these changes or the likely causal impact on BMI.

Methods

This study explored individual-level data on commuting (travel time and travel mode) and self-reported socioeconomic, neighbourhood, health and lifestyle characteristics collected in 18 waves of the British Household Panel Survey (BHPS), a multi-purpose survey that follows the same individuals over multiple time periods between 1991 and 2008.

Results

Using data on individuals from all waves of the BHPS, moving house and changing jobs were predictors of change in commuting travel mode. Using BMI data collected on 4,164 car, bus or train commuters in 2004 that were followed up in 2006, the most adjusted models indicate that reductions in time spent driving, and switching to walking or cycling, had a statistically significant negative impact on BMI.

Conclusion

The present paper suggests that switching to active travel modes and reductions in time spent driving could help reduce obesity.

The KESUE project: developing walkability tools for practice

Dr. Mark Tully (CoEfPHNI)

There is increasing research interest in how we can most effectively intervene in the built environment to change behaviours such as physical activity and improve health. Much of this work has focussed around the concept of walkability and the identification of those attributes of our cities that encourage pedestrian activity, including density, connectivity and the aesthetic of the urban realm (Saelens et al 2003, Frank et al 2010). Much of the existing research has clarified the strength of the relationships between various environmental attributes and the differential impact on different demographic groups (e.g. Panter et al 2011). This has not yet been effectively translated into tools to help integrate the concepts of walkability into decision-making by statutory authorities that can help shape the spatial development and delivery of public services which can support more active lifestyles. A key reason for this has been that standard models for transport planning and accessibility are based on networks of road infrastructure, which provides a weak basis for modelling pedestrian accessibility (Chin et al 2008).

This paper reports the findings of the *Knowledge Exchange, Spatial Analysis and Healthy Urban Environments* project (KESUE), funded by UK's Economic and Social Research Council (ES/J010588/1) and partners including Belfast and Derry City Councils and Northern Ireland's Public Health Agency, the Department of Regional Development and Belfast Healthy Cities, that has attempted to address this problem. This project has mapped city-wide footpath networks and used these to assist partner organisations in developing the evidence base for making decisions on public services based on health impacts and pedestrian access. The paper describes the tool developed, uses a number of examples to highlight its impact on areas of decision-making and evaluates the benefits of further integrating walkability into planning and development practice.

Modelled health impacts of the London bicycle sharing system

Dr. James Woodcock (CEDAR)

Background & aims

Bicycle sharing systems are being implemented in many cities worldwide, but have received little robust evaluation. We modelled the impacts of the London cycle hire scheme (LCH) upon the health of its users.

Methods

Data sources included total-population operational registration and usage data for LCH; surveys of LCH users; and London data on travel, physical activity, road traffic collisions and PM2.5 air pollution. We quantified health impacts in terms of disability-adjusted life years (DALYs), using a stochastic transport health impact simulation model (ITHIM). Route-specific PM 2.5 exposure was estimated based on a route choice model and differential ventilation rates. We investigated the contribution of parametric uncertainty to the final result and used deterministic sensitivity analysis to investigate generalisabilty.

Results

Over one year, 578,607 users made 7.4 million LCH trips (71% by men). These would mostly otherwise have been walked or by public transport. The age structure of the LCH population was much younger than the background population. To date there have been no fatalities on hire bikes and a trend towards fewer injuries than expected for London cycling. Using these observed injury rates, physical activity benefits substantially outweighed risks among males and among females. When we modelled injury rates as being equal to rates for all cycling in central London, however, these benefits reduced, with no significant benefit amongst women. This sex difference reflected comparatively high fatality rates for female cyclists. Results by age show the trade-off between benefits and harms improves rapidly with age for both men and women. Health changes from changes in PM 2.5 exposure were small.

Conclusion

LCH appears to have had positive health impacts so far. For cycling in general, however, there appears to be an excess risk of fatality for females. For middle-aged and older cyclists benefits are far clearer than for young adults. Measures should be taken that both reduce injury risk and make cycling more attractive.

Session 2b: Methodological innovations

Repeated measures and risk factor trajectories of C-reactive protein and body mass index in relation to cardiovascular disease

Dr. Mark O'Doherty (CoEfPHNI)

Data on health of ageing populations are essential for health, social and economic research and management. Such data should both be valid and precise. Furthermore, they should be based on repeated measurements over time, to identify and quantify changes in health-related parameters, their determinants and confounders. CHANCES (Consortium on Heath and Ageing Network of Cohorts in Europe and the United States) is a collaborative large scale project funded by the European Commission within the Seventh Framework Programme, which aims at combining and integrating ongoing studies in order to produce evidence on ageing-related health characteristics and determinants in Europe.

Both C-reactive protein (CRP) and obesity have been shown to be related to cardiovascular disease outcomes. However, much of this epidemiologic evidence is usually based on these risk variables being measured once at 'baseline.' True estimations using only 'baseline' measurements may not be accurate because many physiologic variables are not stable over time, and may have diurnal, seasonal, or long-term variation, which may have considerable impact on the accuracy of risk prediction.

More so, missing data is a common problem in repeated analysis, and in multivariate analysis of large sample surveys even a small proportion of missing data on many variables quickly adds up to a large number of cases being deleted. Journal editors and reviewers are increasingly strict about missing data problems and solutions, and therefore appropriate techniques need to be employed where possible to avoid missing data becoming an issue.

To assess this, we aim to use cohorts within CHANCES which have the appropriate repeated measures available, to clarify the relationship between CRP and obesity with incidence of cardiovascular outcomes and total mortality.

Shifting the gravity of spending? Exploring methods for supporting public health commissioners in priority-setting to improve population health and address health inequalities

Dr. Christianne Ormston (Fuse)

Objectives

The project aims to recommend decision-making support methods, which are appropriate for determining priorities in public health commissioning within local authorities. It aims to identify which priority-setting methods local authority commissioners find useful for public health investment, assessing enablers and barriers to decision-making.

Background

There is increased urgency to demonstrate return on investment in relation to public health interventions and explore methods of decision-support for public health priority setting. The return of the responsibility for public health commissioning to local authorities means that priority setting will take place within new organisational and cultural settings, which presents new challenges. With local authority ring-fenced public health budgets confirmed, difficult decisions about investment, and particularly in a time of economic stringency, about disinvestment, will have to be made, not just within the ring-fenced public health budget but also across different departments of the local authority.

Methods

This two-year study is supporting public health priority-setting in three local authority case study sites across England, through bringing together specialist input from health economics and public health in a series of seminars and targeted decision-making support for public health commissioners. The relevance of prioritisation methods and their impact on spending patterns within and across programmes will be evaluated through a series of initial and follow up interviews with decision-makers in each site.

Findings

This paper will report on the interim findings from the initial prioritisation workshops held with the three local authority case study sites and set out the plans for the remainder of the research.

Bias in consent to health data linkage: evidence from a UK cross-sectional survey

Dr. Lynsey Patterson (CoEfPHNI)

Introduction

The linkage of data from representative population surveys to routine administrative data sources is a powerful and efficient way of turning a cross-sectional study into a longitudinal one that obviates responder burden and bias, and simplifies issues of temporality. However, linkage depends on individual consent and while the factors influencing survey response are well described much less is known about factors influencing consent for record linkage. The aims of this study were to examine the demographic, socioeconomic, health and lifestyle factors associated with consent to linkage to personal medical records. The study is based on wave 1 of Understanding Society which was conducted between January 2009 – December 2010 and had an overall household response rate of 57.6% and an individual response rate of 81.8%.

Methods

All survey respondents were provided with an information leaflet about the linkage of health data and were asked to read and sign a consent form (main outcome). The analysis herein included individuals aged 16-74 years (n=43,709). Univariate and multivariate multi-level logistic regression models were used to investigate the association, for a range of demographic, lifestyle and health variables, with consent to linkage.

Results

Overall, 68.6% of respondents agreed to data linkage. Consent to linkage was lower at older ages, but there was no variation according to sex, marital status or socioeconomic status; those of white ethnicity were 60% more likely to consent to linkage compared to non-white ethnicity (Adjusted Odds Ratio (AOR) 1.60 95% CIs 1.50, 1.71). Poorer mental and physical health was associated with higher consent rates, for example AOR 1.16 (95% CI 1.10, 1.23) for those with a limiting long standing illness. Respondents from Scotland were 21% more likely than those from England to consent to linkage (AOR 1.21 95% CI 1.09, 1.34) whilst individuals from Northern Ireland were 45% less likely (AOR 0.55 95% CI 0.49, 0.62).

Conclusion

There are important differences in the factors influencing response to an initial survey and subsequent consent to data linkage. An interesting finding is the regional variation in consent rates, particularly the higher uptake in Scotland. More research is needed to understand if these variations reflect general mistrust, lack of understanding, or factors related to interviewer perception.

Use of association rule mining to study smoking interventions in primary care

Dr. Yue Huang (UKCTCS)

Association rule mining (ARM), a form of data mining, is used for discovering new, unexpected and potential useful relationships between variables in a dataset. ARM offers an alternative approach to the analysis of medical activity in large healthcare databases, and in particular to assessing equality of health care provision.

The ARM method involves identifying strong rules, 'association rules', among different variables. The concept of ARM was introduced to discover patterns of purchasing in supermarket data (the market basket analysis problem). For example, the rule X={Bread, Butter} → Y={Milk} means if people buy bread and butter, they will also buy milk, and such rules would be used in decision making about marketing activities. ARM has been widely applied in many areas of business analysis to identify patterns or combinations of events which occur together, but has been little used in public health and epidemiology, yet it has huge potential in this context as it provides a structured way of exploring patterns in data that are not hypothesis-driven.

We have used association rule mining to investigate the patterns of prescribing of smoking cessation medications in an electronic primary care dataset, and to identify the characteristics of numerically important groups of patients who typically do, or do not, receive cessation therapy. We found that prescribing is still underused among younger smokers and those with co-morbidity, particularly dementia, high alcohol intake, atrial fibrillation and chronic renal disease.

This novel approach identified sizeable and easily definable groups of patients who are systematically failing to receive support for smoking cessation in primary care. Association rule mining is a powerful means of identifying those at high and low risk of receiving a public health or other healthcare intervention and hence potentially improving healthcare delivery.

Session 3a: Physical activity and diet

An analysis of the changing prices of unhealthy and healthier foods: the first step towards tracking the affordability of a healthy diet

Nick Jones (CEDAR)

Background

The UK government has expressed the public health importance of monitoring the affordability of a healthy diet. We show how such tracking might be done using existing government data and we investigate food prices across the period 2002-2012.

Methods

We linked economic data for 94 foods in the UK Consumer Price Index to food and nutrient data from the UK Department of Health, producing a novel dataset. Each item was categorised as either 'more healthy' or 'less healthy' using a nutrient profiling model developed by the Food Standards Agency. We tested statistical significance using a t-test and repeated measures ANOVA.

Results

The mean 2012 price/1000kcal was £2.50 for less healthy items and £7.49 for more healthy items. The ANOVA results confirmed that prices had risen over the period 2002-2012, with more healthy items rising faster than less healthy in absolute terms (£0.17/1000kcal per year compared to £0.07).

Conclusions

Since 2002 healthier foods have been increasing in price at a greater rate than less healthy foods. These trends may be making healthier diets less affordable over time. The novel linkage demonstrated could be used as the basis for food price monitoring to inform public health policy.

Active Children Through Incentive Vouchers – Evaluation (ACTIVE): a mixed-methods feasibility study

Danielle Christian (DECIPHer)

Background

Physical activity levels decline in teenage populations and are lowest in deprived, ethnic minority and female groups. This study aimed to examine if an activity voucher scheme could be used to overcome the barriers to physical activity experienced by teenagers in deprived areas.

Methods

Mixed method design whereby 115 teenagers aged 13-14 received £25 of activity vouchers per month for six months. Outcome variables: fitness (12 minute Cooper Run before, after intervention and six month follow-up), self-report activity (PAQ-A), accelerometer-assessed activity, and motivation to exercise (BREQ-2). Focus groups were conducted at baseline, three months, at the end of the intervention and six months follow-up.

Results

At least one voucher was used by 80% of children. A matched pair t-test of children before and after intervention showed significant improvement in fitness, accelerometer-assessed activity, but not self-assessed activity (PAQ-A*).* The children with higher motivation to exercise scores had higher voucher use. Qualitative findings showed vouchers were used with friends for socialising through activity, provided opportunities to access previously unaffordable local activities and engaged both those interested and disinterested with physical activity.

Conclusion

Evidence from the pilot of the voucher scheme suggests young people and teachers support this scheme and findings will be taken forward to inform a larger intervention trial.

Financial hardship is associated with greater odds of obesity. Evidence from people aged 50 and over in the epic cohort, UK

Annalijn Conklin (CEDAR)

Objective

To examine the association between financial hardship and the likelihood of obesity, while considering conventional socioeconomic indicators.

Design

Cross-sectional study in population-based cohort, Norfolk, UK.

Outcomes

Prevalent obesity (BMI ≥30kg/m^2) calculated from objectively measured weight and height.

Participants

All adults ≥50 years responding to a postal Health and Life Experiences Questionnaire (1996-2000) and had a follow-up clinical assessment (1998-2002) (between 10,113 and 10,137).

Results

After SES adjustment, having less than enough money for needs increased the likelihood of obesity to 2.04 in women (95% CI: 1.54, 2.69) and 1.83 in men (95% CI: 1.34, 2.49) (versus more than enough). Always/often not having enough money for food or clothing remained associated with a greater likelihood of obesity in women (1.40; 95% CI: 1.03, 1.90) and in men (1.81; 95% CI: 1.28, 2.56), compared to never. Independent associations between greatest level of difficulty paying bills and odds of obesity were 2.20 for women (95% CI: 1.37, 3.55) and 2.40 for men (95% CI: 1.38, 4.17) (reference is none).

Conclusion

Obesity in British adults 50 and over is more likely with greater financial hardship, even after considering education, social class and home ownership. Efforts to reduce obesity need to address older people's contemporaneous spending power.

Factors associated with fitness in children aged 11-13 years – A mixed methods approach

Sinead Brophy (DECIPHer)

Background

Fitness is important for child growth, health and development. This study examines factors associated with fitness and examines the relationship between fitness and obesity.

Methods

1147 children from ten secondary schools participated in a health survey that included 20 metre shuttle run fitness tests, blood samples, and anthropometric measures. The health survey was linked with routine electronic data to examine educational achievement, deprivation and health service usage. Factors associated with fitness were examined using standard statistical analysis including logistic regression and conditional trees. Interactions were examined using data mining cluster analysis. Focus groups were conducted with 20 children and interviews were conducted with two teachers to examine barriers and facilitators to activity for children in a deprived community.

Results

Factors associated with poor fitness at age 11-13 were rapid early-life weight gain, low socioeconomic status and family weight (mother / father obese). Data mining showed that there were 3 main clusters for risk of future heart disease/diabetes: children at low risk (no high clinical markers, not obese, fit, achieving in education), children 'visibly at risk' (overweight, unfit, many hospital/GP visits and high clinical markers such as fasting insulin) and 'invisibly at risk' (unfit but not overweight, high clinical markers such as cholesterol and fasting insulin). Qualitative data suggests that barriers to physical activity among deprived children include cost, poor access to activity, lack of core physical literacy skills and limited family support to be active.

Conclusions

Fitness is mainly determined by family. Children from deprived areas and deprived families, who have overweight parents and who gain weight themselves early in life, are likely to be unfit at age 11-13. Fitness can reveal a hidden group who have high risk factors for heart disease and diabetes but may not be identified as they are normal weight.

Interventions to promote healthy eating: a systematic review of regulatory approaches

Dr. Vivien Hendry (CEDAR)

Introduction

Multifactorial strategies aim to reduce the 40% excess cardiovascular and cancer mortality across the United Kingdom associated with unhealthy diets. We systematically reviewed regulatory interventions to change dietary behaviour or nutrition.

Methods

We identified regulations, rules and legislation (collectively, "regulation") seeking to *directly* alter diet, dietary behaviour or nutrition by influencing (a) dietary behaviour through regulating labelling, calorie display, marketing, food in schools, built environments, or financial incentives or (b) the nutritional content of food such as trans fats. The evaluation comprises a scoping review of regulatory interventions, and in-depth reviews on (1) trans fat controls and (2) school-based fruit and vegetable schemes.

Results

Searches identified 80 eligible studies. Studies of information labels (packaging or menus) and compliance with school food standards occurred most frequently. Thirteen studies examined trans fat controls through bans or labelling, which achieved good compliance. Six studies of school-based fruit and vegetables provided weak evidence of short-term increases in intake.

Conclusions

Regulations with monitoring achieve compliance. Whether this affects dietary behaviour, nutrition, obesity prevalence or other health outcomes is unclear since those impacts are under-evaluated. Understanding the effectiveness and costs of regulatory interventions will highlight where government-led action may be effective in promoting healthy diets.

Session 3b: Mass media and mobile phone interventions

TXT 4 HEALTH: a systematic review of text messaging interventions in healthcare and its application to the development of an intervention for young people who self-harm

Helen Daniels (DECIPHer)

Introduction

Repetition of self-harm is an increasingly common reason for young people to attend hospital emergency departments. Despite this being a significant predictor of subsequent suicide, evidence-based treatments are lacking. Text-messaging holds a number of benefits including flexible location, visual anonymity and low cost. An intervention utilising this technology may prove effective for this patient group.

Objective

As per the Medical Research Council's guidelines, the first stage of developing a complex intervention is to identify the evidence base. A systematic review was conducted to answer the following question: What differentiates a successful text-messaging intervention from that of an unsuccessful one?

Methods

The 71 studies identified were categorised according to the causal mechanism(s) used to bring about change. Components of these interventions were explored to identify patterns in those demonstrating significant effects in the outcomes of interest compared with those demonstrating no difference.

Results

Patterns identified included, for example, the utilisation of multiple causal mechanisms, health behavioural theories, and strategies to maximise participant engagement.

Discussion

The application of these results to the development of a complex intervention for young people who repeatedly self-harm will be discussed.

Use of findings from a pilot trial and qualitative studies to refine MiQuit, a text message self-help intervention for pregnant smokers

Felix Naughton (UKCTCS)

Background

Low access rates to traditional forms of smoking cessation support and high interest in self-help among pregnant smokers has resulted in a renewed interest in self-help interventions. This presentation will describe how findings from a pilot trial and two qualitative intervention development studies were used to refine an individually tailored and automated text message based smoking cessation support system for pregnant smokers (MiQuit).

Materials and methods

In a pilot trial (n=207), the following data were collected and used to refine a prototype intervention: participants' responses to text questions, their perceptions of texts, whether they set a quit date and their use of "on-demand", instant support texts. Relevant data from the qualitative studies included participants' experiences of quitting during pregnancy and preferences regarding the content and delivery of texts.

Results

Five main refinements are described. Firstly, as there were satisfactory response rates to question texts, tailoring information in the revised intervention is now collected by automated text questions rather than by questionnaire. Secondly, in pilot data, there was a high correlation between perceptions of receiving too many texts and these being annoying ($r=0.88$, $p<0.001$), so a facility for users to increase or decrease the text frequency at any time was introduced. Thirdly, the finding that MiQuit increased women's propensity to set quit dates supported the addition of a facility which encouraged users to text in a quit date to get an additional set of support texts tailored around that date. Fourthly, the finding that women perceived risk information texts as the most helpful type received but that such information sent unsolicited could lead to defensive thinking that justified continued smoking, prompted us to provide an additional set of risk information texts which users request on-demand only. Finally, a low use of on-demand support texts in the pilot yet a perceived need for practical activities to help manage cravings and replace the reward provided by smoking, identified by qualitative analysis, led us to

develop a QUIZ facility. This allows users to request and answer multiple-choice quiz messages on-demand as a form of delay or distraction from smoking.

Conclusions

Using multiple data sources to inform intervention refinement can help accommodate user preferences, experiences and actual intervention use and avoid over-reliance on user preferences alone shaping refinement. The likely interest in and impact of the refined MiQuit system will be assessed in two future NIHR-funded evaluation studies.

Systematic development of a behavioural intervention to promote sun safe behaviours

Angela Rodrigues (Fuse)

Background

Intermittent UV-exposure is a risk factor for melanoma. To date, no effective and affordable strategies to promote sun-protective behaviours are available. This study aims to evaluate an evidence-based mobile-phone application (mISkin) supporting holidaymakers in reducing excessive UV-exposure.

Methods

The development of mISkin was informed by a systematic review of RCTs, resulting in a set of behaviour change techniques (BCTs) and delivery methods associated with effectiveness of sun safe interventions. A user-engagement study with 17 users based on prototypes and scenarios was used to optimise acceptability. A 2 (mISkin vs. control) x 2 (SPF15 vs.SPF30) RCT with internal pilot is currently being conducted to test feasibility, acceptability and ultimately the effectiveness of mISkin. Trial outcomes are mitochondrial DNA skin-damage, sunscreen use (sunscreen bottles with built-in accelerometers) and self-reported sun-protection practices. Participants are holidaymakers travelling for up to two weeks to sunny destinations that own an Android smartphone.

Results

Informed by the review, the main BCTs of the mISkin app are: providing general info about consequences, instructions for/demonstration of effective sun-protective behaviours, UV photos of skin damage and prompts. All 17 participants from user-engagement study were satisfied with the mISkin prototype and expressed willingness to use it. Minor changes were introduced to optimise acceptability (e.g. customisable prompts, shortened videos). Acceptability and feasibility data from the pilot study will be presented.

Conclusions

The mISkin app is the first mobile-phone app designed to protect holidaymakers from excess UV-exposure based on current evidence and user-centred design principles.

Effectiveness of mass media campaigns to change tobacco use in England
Dr. Michelle Sims (UKCTCS)

Background

Most of the evidence in favour of the effectiveness of mass media campaigns (MMCs) in reducing smoking rates and cigarette consumption comes from studies conducted in to mid-1970s to mid-1990s. These studies, however, evaluated campaigns run over short time periods in jurisdictions with little other tobacco control activity and are therefore of limited relevance to the current large-scale media campaigns run over extended periods as part of multicomponent national tobacco control programmes. In Europe, no study has yet assessed whether MMCs reduce smoking rates and consumption when run as part of a comprehensive tobacco control programme.

There was a substantial increase in tobacco control activity in England during the 2000s, including large scale tobacco control MMCs. From April 2010, however, the government froze spending on national public health campaigns. A tobacco control campaign was later reintroduced in England in September 2011, but at a much lower level of funding than prior to the freeze. We evaluated whether the government-funded tobacco control television advertisements shown between 2002 and 2010 were associated with changes in smoking rates and cigarette consumption, thus providing essential evidence as to whether the cutting of government spending on MMCs is justifiable. Our focus is on television advertisements as the major expenditure was on this media channel.

Methods

The association between tobacco control television ratings (TVRs – a measure of exposure to television advertisements) and daily cigarette consumption and smoking rates was investigated using generalised additive models. Data on tobacco use was obtained from all adults interviewed in the ONS monthly Opinions Surveys.

Results

After adjusting for other tobacco control policies, cigarette costliness and individual characteristics, we found that a 400 point increase in tobacco control TVRs was associated with a significant 1.80%(95% CI=0.47-3.11) reduction in average consumption in the following month and a 3% lower odds of smoking

two months later (odds ratio: 0.97,95% CI=0.95-0.999). This accounted for 11.2% and 13.5% of the total decline in consumption and smoking rates over the period 2002-9 respectively.

Conclusion

Our findings add to the international evidence base that tobacco control MMCs are associated with reductions in smoking rates and cigarette consumption. It builds on previous work by being the first evaluation in Europe to show that MMCs may be effective when run as part of a comprehensive set of tobacco control policies.

Systematic review of internet-based interventions providing individualised feedback for weight loss in overweight adults

Anna Sherrington (Fuse)

Objectives

The main objective of this systematic review was to assess the effectiveness of individualised feedback in internet-based weight loss interventions for overweight adults.

Method

A systematic review of randomised controlled trials recruiting adult participants with BMI>25kg/m^2 was conducted. Interventions targeting diet and/or physical activity for weight loss were included. Interventions had to be delivered at least in part via the internet and incorporate some form of individualised feedback to the participants. Comparator groups included standard care or an alternative intervention without individualised feedback.

Results

Twelve studies were included (n=3807). At three months, interventions providing individualised feedback showed significantly greater weight loss (mean difference (95% CI) = -2.68 (-3.11,-2.26); p<0.00001), reduced BMI (-1.08 (-1.28,-0.89); p<0.00001), reduced waist circumference (-1.69 (-2.36,-1.02); p<0.00001) and a higher proportion of participants reaching 5% weight loss (8.63 (3.03,24.60); p<0.0001), compared to comparison groups without feedback. Subgroup analysis explored the effectiveness of different types of feedback. Different types of feedback consisting of human communication, automated algorithms or a mixture of both techniques.

Conclusions

Incorporating individualised feedback may be a key behaviour change technique for effective interventions delivered via the internet. More research is needed to investigate how internet interventions with individualised feedback could be incorporated into primary care.

Session 4a: Tobacco, alcohol and drugs

Should reducing smoking to quit be used as an alternative to abrupt quitting by smoking cessation services? Results from a randomised controlled non-inferiority trial

Dr. Nicola Lindson-Hawley (UKCTCS)

The Problem

The approach to quitting smoking advised by many smoking cessation services is to stop abruptly. However, evidence suggests that some smokers would prefer to quit by reducing the amount they smoke before their quit day. Therefore, it may be useful to offer smoking reduction alongside abrupt quitting, to increase the number of smokers accessing treatment services. It is important to first ascertain whether reduction is as successful a quitting method. The few studies which have compared the approaches typically had small sample sizes and only measured the superiority of the effect.

The Approach

The Rapid Reduction Trial (RRT) aimed to establish whether the efficacy of reducing smoking to quit is non-inferior to that of abrupt quitting. RRT is a randomised controlled, non- inferiority trial (N=697), with a non-inferiority margin of 9*.5% difference in efficacy between arms*. Patients wishing to quit smoking were recruited through their GP practice, and randomised to quit abruptly after a two week period or to reduce their smoking by 75% over a two week period, before quitting completely. Both arms received weekly face-to-face behavioural support, and used nicotine replacement therapy in the run up to, and following their quit day. The primary outcome of the trial was abstinence at four weeks, calculated using intention to treat analysis. Secondary outcomes included abstinence six months post-quit.

Findings

At baseline the median age of participants was 49 years (IQR= 17), median cigarettes per day= 20 (IQR= 10), median Fagerstrom Test for Nicotine Dependence =6 (IQR= 3) and 50.2% of participants were male. 49.0% of participants quitting abruptly were CO validated prolonged abstinent at 4 week follow-up, compared with 39.2% of participants who reduced their smoking to quit; producing a risk ratio of 0.80 (95% CI= 0.67, 0.95). Abrupt cessation was significantly more effective than reducing smoking to quit

(p=0.01) but the difference was not significantly greater than our pre-specified non-inferiority margin. Analysis of drop-out rates suggest that more reduction participants dropped out pre-quit, and of those participants who made a quit attempt abstinence rates did not differ between arms.

Consequences

In line with population level data, this trial found that quitting smoking by gradual reduction was less effective than quitting abruptly, but the difference was relatively modest and so quitting gradually may be a suitable option for smokers who otherwise would not try to quit at all. The extra people that it may bring into services could still lead to an increase in overall quit rates. However, work is needed to investigate whether offering gradual cessation would cause more smokers to seek help to quit. Ways to reduce the pre-quit drop-out rate of smoking reduction interventions should also be investigated with an aim to maximise quit rates.

Attentional bias retraining in smokers attempting cessation: findings from a double blind randomised controlled trial

Rachna Begh (UKCTCS)

Background

Smokers show attentional bias, meaning they attend preferentially to cigarettes and related cues. Attentional bias may contribute to craving and failure to stop smoking. Modified visual probe tasks have been used in laboratory studies to manipulate attentional biases for smoking cues, although these procedures have not been applied in smoking cessation programmes. We conducted the first trial to examine the efficacy of multiple sessions of attentional retraining (AR) on attentional bias, craving, and abstinence in smokers attempting cessation.

Methods:

Adult cigarette smokers (n=118) were randomized to a modified visual probe task with AR or placebo training (PT). Training began 1 week prior to quit day and was delivered weekly for 5 sessions. Both groups received 21mg transdermal nicotine patches for 8-12 weeks and withdrawal-orientated behavioural support for 7 sessions. Primary outcomes included the difference in attentional bias reaction time measured at baseline and 4 weeks post-quit. Urge to smoke was measured weekly using the Mood and Physical Symptoms Scale (MPSS). The secondary outcome, prolonged abstinence, was measured and biochemically validated at each session.

Results

The sample smoked a mean of 20.8 (SD=9.2) cigarettes/day and mean FTND=5.5 (SD=2.3). Post-training bias scores were lower in the intervention than control group (mean difference=-7.9ms), though this did not reach statistical significance (p=0.19). After adjusting for baseline bias scores, no significant main effects or interactions were found by group/abstinence status (ps>0.17). Mixed-effects linear regression analyses indicated that from quit-day to 4 weeks, craving was lower in abstinent smokers who received AR than PT but this was not statistically significant (b=-0.25, 95% CI=-1.41, 0.91, p=0.67). There was no significant difference in the proportion of smokers achieving prolonged abstinence at 4 weeks (RR=0.97, 95% CI=0.67, 1.40).

Conclusions

Multiple sessions of AR using a modified visual probe task had no effect on attentional bias, craving and abstinence outcomes. The findings call into question the clinical value of AR procedures for treatment-seeking smokers.

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Cannabis and psychosis: a further examination using ALSPAC at age 18

Prof. Matt Hickman (DECIPHer)

Background

Although acute cannabis intoxication has been shown to cause transient psychotic experiences (PEs), whether prolonged cannabis use can cause psychotic symptoms is less clear. Systematic reviews have provided some evidence that the relationship is causal, but residual confounding and intoxication effects are hard to completely rule out. Model projections have suggested that the number of cannabis users that need to be treated or prevented to prevent one case of schizophrenia may be considerably high.

Methods

We used data from the Avon Longitudinal Study of Parents and Children (ALSPAC) birth cohort. Substance use at age 16 was assessed via self-report questionnaire. PEs at age 18 were assessed via semi-structured interviews. Confounders (family history, maternal education, IQ, depression, borderline personality traits, strengths and difficulties questionnaire (SDQ), alcohol use at age 16, and other illicit drug use at age 16) were measured variously by questionnaire and interview. Ordered logistic regression analyses were conducted to investigate the associations between cannabis use at 16 and PEs at 18, and tobacco use at 16 and PEs at 18. We also excluded anyone who self reported definite PEs at age 16.

Results

We found cannabis use at age 16 and PEs at age 18 to be associated. Adjustment for pre-birth and childhood confounders did not change the point estimates greatly. Removing those who attribute their PEs only to cannabis intoxication decreased the point estimate, but strong evidence of an association remained. Further adjustment for either tobacco use or other illicit drug use attenuated the relationship substantially. However, both these confounders are highly correlated with cannabis use. We found tobacco use at age 16 and PEs to be associated. Adjustment for pre-birth confounders did not alter the point estimate, but childhood confounders slightly attenuated it. Further adjustment for cannabis use resulted in further attenuation, but not to the same level as for cannabis PE results. The same was also true for other illicit drug use as a confounder.

Conclusions

The relationship between cannabis use and PEs seems to be heavily confounded by other illicit drug use and in particular tobacco use. The relationship between tobacco and PEs appears to be more robust to confounding by cannabis use and other illicit drug use. Other methods are needed to robustly test the independent effects of cannabis, tobacco and other illicit drugs on PEs. Nonetheless, the weakness and non-specificity of the association between cannabis and psychosis undermines hypotheses that the relationship is causal and critically that cannabis prevention is an important target for psychosis and schizophrenia prevention. There are implications also for cannabis drug control which in part was based on concerns over its effect on psychosis.

Improving cue exposure outcomes in smokers using D-cycloserine

Dr. Angela S. Attwood (UKCTCS)

Introduction

Smoking-related cues play an important role in maintaining smoking behaviour and can be instigators of relapse. Therefore, cue exposure therapies (CETs) have been considered promising targets for intervention, but to date have met with limited success. CET is primarily based on classical conditioning, whereby a CET session acts as an extinction trial. Research using laboratory animals has shown that extinction learning can be enhanced using partial NMDA receptor agonists such as D-cycloserine (DCS). More recently, studies have investigated the effects of DCS on extinction learning and cue exposure outcomes in human participants in the fields of anxiety and, to a lesser extent, drug dependence.

Methods

This examines whether a standard 250mg dose of DCS enhances cue exposure outcomes in daily cigarette smokers (n = 50; 50% male; $\geq$ 10 cigarettes/15 roll ups per day). Participants were randomised to either receive DCS or placebo in combination with CET. They attended four sessions approximately one week apart comprising screening/baseline (session one), drug administration and CET (sessions two and three), and cue reactivity tests (session four). Primary outcome measures were subjective craving and cardiovascular responses following a cue exposure test (session four). There is evidence to suggest that DCS may also increase the generalisability of cue exposure and therefore secondary analyses were conducted to examine whether the effects of combined CET/DCS generalised to other relevant smoking behaviours (attentional bias, concurrent choice and smoking topography).

Results

There was evidence of reduced craving across sessions, suggesting an effect of CET ($P<.001$). However, no drug group differences were observed on any of the primary (Ps >.12) or secondary (Ps >.26) outcome measures.

Discussion

This null finding echoes a growing body of literature reporting no or limited effect of DCS on drug-related CET in humans. The general failure to replicate the findings from the animal literature may be

due to a failure to sufficiently use the animal literature to inform study design. Alternatively, animal paradigms fail to model the complexity of the human drug-cue experience and therefore the findings of single cue extinction may not be generalisable to the treatment of human smoking dependence.

Evidence flows in organisational commissioning and joint planning to address public health issues: a study in co-creation

Dr. Peter van der Graaf (Fuse)

Objectives

This is a NIHR: HS&DR-funded study. The aims are: to identify the ways in which research evidence and other types of information and data are used in planning and commissioning to address an alcohol-related public health issue; and to work in co-creation with research participants. Key objectives are to understand the use of research evidence, how and when it is accessed and brought in to play, by whom, and with what perceived effects.

Methods

We present data from a mixed methods cross-comparative case study design looking at evidence use across two case study sites. The two sites are selected to reflect evidence use in different policy contexts and through different organisational arrangements (purchaser-provider split in England, and through joint planning in Scotland). Using interviews (c.45), observations (c.12), and documentary analysis, we examine what kinds of evidence are mobilised between the people, groups and organisations involved.

Findings

The paper presents our early findings collected against a backdrop of financial constraint and significant reforms (in England). We highlight that: multiple types of 'evidence' are sought and valued; interpersonal relationships, power and politics drive evidence use; and interactive forums and organisational processes are vital for knowledge exchange and evidence sharing.

Conclusions

Drawing on the data, the paper will identify opportunities for facilitating the flow of research evidence in different planning and commissioning systems and offer tentative implications for stakeholders.

Session 4b: Settings-based approaches

The suitability of peer supporters identified to informally promote a smoke-free message

Dr. Jo Holliday (DECIPHer)

Introduction

The ASSIST Programme is an informal school-based peer-led intervention aimed at reducing the uptake of weekly smoking amongst 12-13 year olds. Based on diffusion theory, the intervention relies on peer socialisation and the diffusion of smoke-free messages by 'peer supporters' through informal conversations. Peer supporters are nominated using a whole-community approach. The intervention was evaluated in the UK using a randomised controlled trial (ASSIST), which demonstrated a 22% reduction in the odds of being a regular smoker [odds ratio 0.78 (95% CI 0.64-0.96)] in intervention compared with control schools.

Peer education relies on peer educators being credible and influential role models amongst their target population. So whilst the Programme is effective, it is important to examine whether the nomination process used achieved its aim of identifying peer supporters with these characteristics. This study therefore explores if the peer supporters were similar to other Year 8 (aged 11-12) students, and were considered suitable by their peers.

Methods

Data were collected immediately post-intervention during ASSIST. Semi-structured individual interviews and discussion groups were conducted with students in four schools selected for an in-depth process evaluation study. Quantitative data on suitability were obtained from questionnaires completed by all students in intervention schools.

Quantitative data underwent descriptive analysis. Qualitative transcripts were subjected to thematic analysis.

Results

The nomination process successfully identified a diverse group of peer supporters, broadly representative of their year group.

Respondents gave mixed opinions about the performance of peer supporters. Some students were thought to be responsible and confident whereas others were seen as shy or not taking it seriously. Smoking status was identified as one of the major threats to the credibility of peer supporters.

Conclusions

This study confirms that the nomination process successfully achieved its intended outcomes. The peer supporters were broadly similar to their year group. While views regarding peer supporter suitability were mixed, since opinion leaders are not always credible across communities, attaining a range of peer supporters, credible with different groups is likely to have contributed to the success of the intervention. However, developing communication skills, facilitating smoking cessation and encouraging students to embrace their role may enhance intervention outcomes.

Outreach as a mechanism to improve Traveller health: a scoping and realist review

Lesley Geddes (Fuse)

Background

The health status of Gypsy and Traveller community members in the UK is significantly worse when compared with other socio-economically disadvantaged groups among the settled population. Mistrust of mainstream health services resulting from experiences of discrimination, the lack of fit of mainstream services with transient lifestyles, and limited understanding of Gypsy and Traveller culture have combined to make access to health services difficult for these groups. Outreach programmes have been developed to fulfil a bridging role between mainstream services and Traveller Communities. However, as outreach for Traveller health improvement is a complex intervention in that it is not standardised but responsive to local need, and is scarcely evidenced, the synthesis of findings in order to draw clear lessons for policy and practice is challenging.

Methods

In response to the available evidence base, a combined scoping review and realist synthesis is being undertaken in an ongoing NIHR-commissioned study.

Key messages

The scoping review charted the extent, nature and quality of evidence on Traveller health improvement and situated the evidence specifically examining outreach interventions on Traveller health within the wider body of literature. The realist synthesis enabled the excavation of the key mechanisms of successful outreach interventions for Traveller Communities in different contexts.

Conclusions

Drawing on working examples of analysis processes, the presentation demonstrates how the combination of scoping and realist methods offered bespoke opportunities to draw meaningful lessons from a diverse and limited literature base. Examples will be given of the components of successful outreach and the favourable contextual conditions to this success in Traveller communities.

Prisons, personality disorder and public health
Dr. Ruari-Santiago McBride (CoEfPHNI)

Offender health is a major public health issue. People who end up in prison typically have had a traumatic childhood, come from an economically deprived background, have low educational attainment, suffer from poor mental health and have dependency issues with legal and illicit substances. The pressures of the prison environment, including boredom, isolation, bullying and lack of control over one's life, often have a detrimental effect on people's mental health. Consequently, many people are released from prison with more problems than when they entered. For some, this leads to a 'revolving door syndrome.' The economic burden of the failing prison system is no longer sustainable in an age of austerity. Developing a public health approach would require inter-agency collaboration on three levels: a) early intervention, to prevent young people from going down a criminal career path; b) diversion, to prevent individuals with significant mental health problems from going to a prison environment; and, c) creative interventions, for those individuals who are deemed to require incarceration. The presentation will not present results from a specific intervention but will be an exploratory discussion that reflects on the presenter's experience of volunteering in a high security prison; and, an analysis of interviews with ex-prisoners, third sector staff, healthcare staff and prison staff. The presentation will conclude that although there are major benefits to a public health approach there are huge barriers that need to be overcome before such an approach could be realised.

Stress and the city: a national data linkage study of anxiolytic drug use in the city

Dr. Aideen Maguire (CoEfPHNI)

Background

Half the world's population now live in cities and by 2030 this proportion will increase to two-thirds. There is growing concern over the negative implications for health associated with living in urban areas. Individuals living in cities are thought to be at an increased risk of cancer, heart attack, stroke and schizophrenia, and cities are also associated with increased deprivation and disadvantage. Studies testing the association between urban dwelling and disorders such as depression and anxiety have produced conflicting results. This study aims to discover if living in a city increases your risk of suffering from depression or anxiety, using antidepressant and anxiolytic prescribing as proxy indicators.

Methods

Anxiolytic and antidepressant prescribing data from the national prescribing database spanning two years was linked to individual level census data from the Northern Ireland longitudinal study. Multilevel regression analyses were carried out to test the association between city dwelling and prescription drug uptake, adjusting for natural clustering of individuals within neighbourhoods. The effect of selective migration was tested by identifying moves to and from city and rural areas.

Results

In the unadjusted model individuals living in cities were 30% more likely than those living in rural areas to receive an anxiolytic (OR=1.30, 95% CI 1.24, 1.36) and 42% more likely to receive an antidepressant (OR=1.42, 95% CI 1.35, 1.47). After full adjustment for age, gender, marital status, education, measures of socio-economic disadvantage such as NSSEC, housing tenure, car ownership, and limiting long term illness individuals living in cities were still 21% more likely to receive anxiolytic medication compared to those living in rural areas (OR=1.21, 95% CI 1.16, 1.26). The association between city dwelling and antidepressant uptake disappeared. Results from the selective migration analysis found that "ever living" in a city increased the likelihood of receiving anxiolytic medication.

Conclusion

Even after adjustment for known mental health risk factors city living increases the likelihood of

receiving anxiolytic medication. Some studies have suggested that the lack of social networks and individualistic society created in cities has a negative impact on mental health. Interestingly, though, city dwelling only appears to impact anxiety disorders and not depression. The increased stress in cities could be a risk factor for much of the poor physical health observed there also. However, the increased stress may be explained by security and fear of crime. Crime rates are higher in cities and the lack of trust in areas may increase levels of anxiety. Further analyses will be carried out adjusting for crime and social fragmentation.

The school environment and student health: a meta-ethnography

Dr Adam Fletcher (DECIPHer)

Using Noblit and Hare's meta-ethnographic approach, nineteen qualitative studies were synthesised to explore the processes through which schools may influences students' health. These pathways remain largely unrevealed in quantitative studies. Four over-arching meta-themes emerged across these qualitative studies, which explored school influences on a range of different adolescent health concerns (including substance use, diet, sexual health, bullying and violence). First, aggressive behaviour and substance use are often a strong source of status and bonding at schools where students feel educationally marginalised or unsafe. Second, health-risk behaviours are concentrated in unsupervised 'hotspots'. Third, positive teacher-student relationships appear to be critical in promoting student wellbeing and limiting risk behaviour, although certain aspects of schools' organisation and educational policies constrain this. Fourth, unhappiness at school can cause students to seek sources of 'escape', either by physically leaving the school environment or through heavy substance use. These common features of schools which appear to shape student health-related behaviours (a lack of safety, disengagement, unsupervised spaces, weak student-staff relationships, stress, etc) are amenable to intervention and should be the subject of future investigation.