Conclusion Recipients of co-located welfare benefits and debt advice experience reduced financial strain and for sub-groups short term mental health is improved. Co-located advice services have the potential to support general practice work but not if co-location is limited to a physical sharing of space. Suggestions are made to facilitate joint working.

PL02

TOBACCO CONTROL IN ENGLAND: USING MICROSIMULATION MODELLING TO QUANTIFY THE POTENTIAL IMPACT OF A TOBACCO-FREE GENERATION OR A TOTAL BAN

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10.1136/jech-2017-SSMAbstracts.101

Background In 2015, almost one-fifth of English adults continued to smoke. Tobacco control policies in the UK are amongst the strongest in Europe, yet smoking prevalence remains stubbornly high, especially in deprived groups. Novel and radical approaches may be needed to control tobacco effectively. The British Medical Association backs a tobacco ban for those born after 2000, and a population-wide tobacco ban has already been implemented in Bhutan. We use microsimulation modelling to quantify the effectiveness and equity of these two radical tobacco policies.

Methods IMPACT_{NCD} is a previously validated dynamic stochastic microsimulation developed in R. It simulates the life course and smoking histories of synthetic individuals under alternative scenarios. We used IMPACT_{NCD} to estimate the potential impact of two proposed changes to tobacco control policy in England – a sales ban restricted to those born in or after 2000 and a total sales ban – on a simulated English population over a 30 year time frame. Extrapolating from Bhutan's implementation, we assumed 50% reductions in smoking initiation rate, active to ex-smoking ratio, and cigarette consumption. We compared both scenarios with a counterfactual that assumed current declining trends in smoking will continue in the future. We conducted a rigorous sensitivity analysis using second-order Monte Carlo simulation, and we report the median and interquartile range of the output distributions.

Results The model suggested that under the tobacco-free generation caps scenario, smoking prevalence would fall to 12.4% (12.1% to 12.6%) for men and 7.9% (7.7% to 8.1%) for women, by 2045. This could prevent or postpone approximately 3500 (-4,200 to 11,000) cardiovascular disease cases and some 230 (-3,100 to 3,600) lung cancer cases; resulting in approximately 190 (-2900 to 3400) fewer cardiovascular disease deaths, and 220 (-2,700 to 3,200) fewer lung cancer deaths.

Under the total caps scenario, the English smoking prevalence would fall to 7.2% (7.0% to 7.4%) for men and 4.3% (4.1% to 4.5%) for women, by 2045. This could prevent or postpone approximately 90,000 (70,000 to 120,000) cases of cardiovascular disease, some 79,000 (55,000 to 120,000) cases of lung cancer, approximately 14,000 (3,000 to 25,000) fewer cardiovascular disease deaths and some 54,000 (38,000 to 73,000) fewer lung cancer deaths.

Both scenarios could reduce socioeconomic health inequalities in cardiovascular disease and lung cancer morbidity and mortality.

Conclusion Strengthening existing English tobacco control policies through limiting access could substantially improve effectiveness and equity. Further research is now needed to explore the political and legal feasibility issues.

PL02

PL03 HOSPITAL TREATED DELIBERATE SELF-HARM AND RISK OF SUICIDE AND DEATH FROM OTHER EXTERNAL CAUSES IN THE REPUBLIC OF IRELAND – A NATIONAL REGISTRY COHORT STUDY

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10.1136/jech-2017-SSMAbstracts.102

Background Suicide is a major public health problem. The prediction of suicide is difficult, however research has identified that deliberate self-harm (DSH) is one of the strongest predictors of future suicide. To date, the risk of suicide in individuals who DSH is not well established internationally as relatively few countries have accurate data on DSH. This is the first registry based study to examine the risk of mortality on a national cohort of all individuals presenting to hospital due to DSH in Ireland.

Methods A national prospective cohort of 26,168 DSH patients attending the 40 hospital emergency departments in Ireland from 2009 to 2011, were followed up until to the end of 2011 using national death recording systems. Gender specific age adjusted European standardised rates for external cause mortality were calculated. Additionally, Poisson regression was used to generate incidence rate ratios (IRRs). Potential risk factors were investigated using Cox Models.

Results During the study follow-up 437 patients died from external causes. The average 1 year cumulative incidence for suicide, non-suicide external cause mortality and all external causes combined were 0.8%, 0.5% and 1.3% respectively. The risk of suicide within the first year after DSH was 46 times greater in DSH population compared to the general population. Risk of other non-suicide external cause mortality was also greater in the DSH population compared to the general population (females; IRR=30, males; IRR=20). While the relative risk of death was higher in the female DSH population compared to the female general population, the absolute risk of death was found to be higher in males than females. Older age and male gender were associated with an elevated risk of death. Risk of death from suicide varied depending on method of DSH. Compared with overdose alone attempted hanging had the greatest risk of suicide, particularly in females (females; HR=6.8, males; HR=2.6), major self-cutting was also associated with a 2-fold increased risk. DSH repetition was also found to be a strong predictor of subsequent death.

Conclusion The findings from the world's first national DSH Registry highlight the extremely high risk of death from suicide and other external causes following hospital treated DSH. Older age, male gender, DSH repetition (especially for females) and persons presenting with attempted hanging or major self-cutting are at a particular risk. The findings from this study highlight the need for well-structured, specialist and organised care for this vulnerable group attending emergency departments.

SSM annual scientific meeting 2017

Poster (P) presentations

P01 **SYSTEMATIC REVIEW OF REVIEWS ON THE NEGATIVE HEALTH EFFECTS AND PSYCHOSEXUAL BENEFITS OF HIGH-HEELED SHOES**

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10.1136/jech-2017-SSMAbstracts.103

Background Although frequently worn by many women in line with traditional female gender identity, high-heeled shoes (high heels) have been shown to be detrimental to musculoskeletal health and increase the risk of injury. However, no evidence synthesis has considered both the psychosexual benefits and the epidemiological and biomechanical impacts of their wear. We present a systematic review of reviews concerned with the public health challenge of high heels considering all three of these aspects.

Methods Seven standard academic health bibliographic databases, including MEDLINE and EMBASE, were searched up to November 2016 using high heel-related keywords such as “high heel” and “stilettos”. Supplementary searches were also conducted in Google Scholar, Directory of Open Access Journals and bibliographies of relevant articles. Due to several review articles on aspects of our research question, we initially included all review articles that provided evidence linking high heels to psychosexual benefits or musculoskeletal health problems (osteoarthritis, hallux valgus, pain or injury) from an epidemiological or biomechanical perspective in participants without prior history of significant musculoskeletal conditions. We then considered additional primary studies addressing areas on which there was no review or an identified lack of evidence. Narrative synthesis was conducted using standard forms. Proportionate second review was conducted.

Results A total of 506 unique records were identified, 27 full-text publications were screened and 20 publications (7 reviews and 13 additional primary studies) were included in our narrative synthesis. All available psychosexual studies show that high heels increase women’s attractiveness to men, although they are uncritical regarding heteronormativity. The most up-to-date epidemiological review provides clear evidence of a link to hallux valgus, pain and first-party injury. The body of biomechanical reviews also provides clear evidence of changes indicative of increased risk of these outcomes plus osteoarthritis. With regard to second-party injury, evidence is limited to one descriptive study and eight case reports.

Conclusion Our evidence synthesis clearly shows that high heels bring psychosexual benefits to women, but are detrimental to their musculoskeletal health. Considering this dilemma, it is important that women’s freedom of choice is respected in social life, and that policy makers seek to address any remaining issues of explicit or implicit compulsion to wear high heels (e.g. at work). Further research is needed to assess second-party injury and any public safety implications. A limitation of our study is that there was no suitable quality assessment tool for the breadth of designs we included.

P02 **POTENTIAL BENEFIT OF SINGING FOR PEOPLE WITH PARKINSON’S DISEASE: A SYSTEMATIC REVIEW UPDATED TO 2017**

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10.1136/jech-2017-SSMAbstracts.104

Background There is evidence that participation in performing arts brings psychosocial benefits in the general population. In recent years, there has been substantial interest in the potential therapeutic benefits of performing arts for people with chronic neurological conditions. A lack of effective evidence synthesis, however, made it difficult to evaluate the evidence base and future research directions. We conducted the first systematic review of the potential benefit of singing for people with Parkinson’s disease (PD) on speech, communication, cognition, motor function and quality of life outcomes. Here, we present an updated version of this systematic review up to January 2017.

Methods Seven standard academic health bibliographic databases, including MEDLINE and EMBASE, were searched up to January 2017 using MeSH terms and keywords corresponding to (Parkinson’s disease AND (Singing OR Music OR Music therapy)). Supplementary searches were also conducted in Google Scholar and bibliographies of relevant articles. We considered full-text original articles assessing the potential benefit of singing for human participants with clinically diagnosed PD on speech impairment, functional communication, cognitive status, motor function or quality of life using any appropriate quantitative design. Narrative synthesis was conducted using standard forms. Proportionate second review was conducted. Study quality was assessed using the Threats to Validity tool.

Results A total of 490 unique records were identified, 30 full-text publications were screened and eight studies included in the review. All eight studies assessed the impact of singing on speech, of which six found evidence of benefit. Two studies assessed quality of life, one finding evidence of benefit. One study assessed functional communication and found no evidence of benefit. No studies assessed cognitive or motor function. One study was assessed at low risk of bias, one at medium risk of bias and six at high risk of bias.

Conclusion Included studies provide evidence that singing benefits the speech of people with PD. However, evidence is limited with regard to wider benefits, especially those of a psychosocial nature such as functional communication and quality of life, which are areas of high importance to people with PD. A key limitation of our review is that most studies were at high risk of bias. Groups such as Parkinson’s UK run choirs for people with PD – this seems a good idea and has some evidence base, but further more rigorous studies are required to provide a stronger evidence base to support greater healthcare provider-community organisation partnerships.