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THE SOFTER THEY FALL: A NATURAL EXPERIMENT EXAMINING THE HEALTH EFFECTS OF JOB LOSS BEFORE AND AFTER FORNERO'S UNEMPLOYMENT BENEFIT REFORMS IN ITALY

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Background The Fornero unemployment benefit reforms in Italy increased replacement rates from 60% to 75% for first six months of unemployment, beginning January 1st, 2013. We exploit the roll-out of this reform as a natural experiment to evaluate whether those experiencing job loss in 2011 or 2012 (N=75) endured greater declines in health compared to those experiencing job loss in 2013 or 2014 (N=127).

Methods We utilize data from the Italian version of EU-Survey on Income and Living Conditions (SILC), longitudinal sample (2010–2014), yearly data supplemented with retrospective monthly calendar data. To construct our treatment and control groups we apply a series of restrictions in order to isolate those who were highly likely to have been affected by the pre and post-Fornero unemployment benefit regimes. Our dependent variable is change in self-rated health. To test our hypotheses, we implement difference-in-difference modelling, adjusting for gender, interview month, household income, region of residence, whether the respondent has any chronic illness, occupation, and marital status.

Results Our difference-in-difference estimate for changes in health following job loss pre and post Fornero reforms is statistically significant (ATT=0.349, $p < 0.01$). This corresponds to almost no change in self-rated health in the post-Fornero treatment group (Δ Health=0.032), and a decline in health for the pre-Fornero control group (Δ Health=-0.317). These models are robust to several alternative specifications.

The decline in health for the pre-Fornero group represents 0.43 of a standard deviation for health change. For effect size comparison, the negative association between reporting any chronic illness and health change corresponds to 0.33 of a standard deviation (adjusting for age and sex).

Conclusion While the links between unemployment and health are well documented, very little is known about specific policy contexts that may mitigate the health-effects of job loss. This study leverages a novel research design to shed new light on the ways that institutional factors may modify the social determinants of health at the individual level.

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ASSOCIATION BETWEEN BUILT ENVIRONMENT AND CARDIOVASCULAR DISEASES

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Background Although increasing interest in the role of built environments that can influence residents' health and health behavior, little is known about the relationship between built environment and cardiovascular diseases (CVD). Therefore, this study was carried out to examine the association between

objective measured built environment and CVD among adults in Gyeonggi province, Korea.

Methods A total of 50,958 individuals living in 546 administrative districts of Gyeonggi province were analyzed. Individual data were obtained from the Korean Community Health Survey (KCHS). The CVD outcomes were self-reported history of physician diagnosis of hypertension, dyslipidemia, myocardial infarction, angina, and stroke. Built environment measures were created for 546 administrative districts of Gyeonggi province using Korean government databases (National Public Physical Activity Facility Database 2013, Korean Transport Database, Population Census 2013 and National Building Database 2013) and ArcGIS software. A Bayesian spatial multi-level model was implemented separately by age group (i.e. 40–50 years or ≥ 60 years).

Results After considering the individual- and neighborhood-level factors as well as the spatial variation in the model, living in neighborhoods with a middle-level distance to physical activity facilities (T2) was associated with 11.3% increased odds for CVD in elderly people over 60 years, compared with living in neighborhoods nearest to physical activity facilities (OR=1.11, 95% CI=1.003–1.236 for T2 vs. T1). For adult 40–59 years, no built environment significantly influenced CVD.

Conclusion The findings suggest that built environment that provided more opportunities for physical activity was negatively associated with CVD, practically in elderly people. Further research to examine the spatio-temporal association is needed to better understand the causality of the relationship between built environment and CVD.

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THE INCIDENCE OF FIRST SEIZURES, NEW DIAGNOSIS OF EPILEPSY, AND SEIZURE MIMICS IN A DEFINED GEOGRAPHIC REGION IN IRELAND

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Background Epilepsy is a disorder of the brain characterized by an enduring predisposition to generate epileptic seizures and by the neurobiologic, cognitive, psychological, and social consequences of this condition [1]. Studies adherent to international epidemiologic guidelines and epilepsy classification are needed to accurately record the incidence of isolated seizures and epilepsy within a population [2]. Because the diagnosis of epilepsy is largely made through clinical assessment, seizures and epilepsy are susceptible to misdiagnosis. Previous epidemiological studies in epilepsy have not captured or explored 'seizure mimics'.

Methods During the calendar year 2017, multiple overlapping methods of case ascertainment were applied to a defined geographic region to identify all patients presenting with first seizures (provoked and unprovoked), new diagnoses of epilepsy, and seizure mimics. Seizures among children, except neonatal seizures and febrile seizures, were included. Potential first seizures and new diagnosis of epilepsy were identified in real-time but classified retrospectively as definite, probable or possible based on available evidence in accordance with the

International League Against Epilepsy (ILAE) epidemiologic guidelines [2]. Definite and probable cases of seizures and epilepsy were classified according to 2017 ILAE classification systems as focal, generalized or unknown [3, 4]. Data were analysed using SPSS, version 24.

Results From a population of 542,869 adults and children, 1942 potential cases were identified, of whom 611 were excluded as neonatal or febrile seizures, did not meet the geographic criteria or had a previous diagnosis of seizures or epilepsy. Incidence rates of first seizure (both provoked and unprovoked) was 102 per 100,000 population, of new diagnosis of epilepsy was 64 per 100,000, and of seizure mimics was 96 per 100,000. In concordance with most international studies, age-specific incidence rates for both first seizures and new diagnosis of epilepsy demonstrated a bimodal distribution, with highest rates in the very young and in later life. As expected, the most commonly encountered seizure mimic was syncope (30%).

Conclusion We applied a rigorous study protocol for investigation of the incidence of first seizures, new diagnosis of epilepsy and seizure mimics in a geographically defined region which is adherent to recently published international guidelines for epidemiological studies and epilepsy classification. This study highlights the significant burden that seizure mimics place on diagnostic services given that they occur as frequently as first seizures.

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CARING FOR CRITICALLY ILL WOMEN IN OBSTETRICS IN IRELAND: 2014–2016

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Background The provision of safe maternal critical care requires resource planning and development of relevant competencies among healthcare professionals. However, there are no national data recording the activity of higher levels of care in obstetrics. The objective of this study was to establish the incidence, location of care and underlying maternal morbidity associated with Critical Care in Obstetrics in Ireland.

Methods For 2014–2016, 15 Irish maternity units provided anonymised data on pregnant or recently pregnant women requiring Level 2 Care (invasive monitoring or support for a single failing organ system) or Level 3 Care (requiring mechanical ventilation alone or support of two or more organ systems). Morbidities were classified using both the World Health Organisation and the National Perinatal Epidemiology Centre definitions of severe maternal morbidity.

Results Among 124,135 maternities, 900 women required Level 2 Care (7.3 per 1,000 maternities) and 61 women required Level 3 Care (0.5 per 1,000 maternities). While Level 3 Care was provided in an ICU facility, the location of Level 2 Care varied by maternity unit - the smaller the unit, the greater the utilisation of the ICU. Respectively, hypertensive disorders and obstetric haemorrhage affected 54.2% and 27.3% of women requiring Level 2 Care and 11.5% and 44.3% of women requiring Level 3 Care. The need for higher level of care was not predictable in approximately half of the women. All woman requiring Level 3 Care and 37.1% of women requiring Level 2 Care met the criteria of organ dysfunction as specified by the national clinical audit of severe maternal morbidity.

Conclusion A significant number of women requiring Level 2 Care do not experience organ dysfunction as their clinical needs were identified and treated before organ dysfunction occurred. Thus, there are limitations of existing classification systems on severe maternal morbidity in quantifying level of care provided. The variation in location of Level 2 Care has implications for staff training in both maternity units and ICU.

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IDENTIFYING THE ACTIVE INGREDIENTS IN IMPLEMENTATION: QUALITATIVE CONTENT ANALYSIS OF THE OVERLAP BETWEEN BEHAVIOUR CHANGE TECHNIQUES AND IMPLEMENTATION STRATEGIES

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Background Evidence-based healthcare innovations require complementary evidence-based implementation strategies to support their translation into practice. Efforts to test, refine and replicate implementation strategies are frustrated by insufficient description. Our aim was to examine the extent to which implementation strategies could be specified using the Behaviour Change Technique (BCT) taxonomy, a behavioural science tool for describing the active ingredients of interventions.

Methods The data source was a compilation of 73 implementation strategies, developed through evidence synthesis and expert consensus. The definition of each strategy (n=73) was deductively coded using the BCT Taxonomy, containing 93 discrete techniques. A typology was developed iteratively to categorise the extent of overlap between strategies and BCTs. The number of BCTs per strategy and extent of overlap was estimated. In the next stage, 3 experts will independently rate 1) their level of agreement with the categorisation and 2) level of agreement with the BCT(S) identified within each strategy.

Results During preliminary analysis, 87 BCTs were coded across 73 strategies (average 1.2 per strategy). Five types of overlap were identified. For 8% of strategies (n=6), there was direct overlap between the strategy description and BCT (e.g. strategy: remind clinicians/BCT: prompts and cues). For 36% of strategies (n=26), there was at least 1 BCT clearly subsumed under the strategy description which could be used to guide initial operationalisation (e.g. strategy: provide clinical supervision/BCT: restructure social environment). For 26% of strategies (n=19), a BCT(s) was probably subsumed under the strategy given its definition and/or title but other BCTs were possible depending on how the strategy is operationalised (e.g. strategy: visit other implementation sites/BCT: social comparison). For 11% (n=8), there were no BCTs clearly indicated in the strategy definition or title (e.g. strategy: make training dynamic). Finally, 19% of strategies (n=14) did not focus on behaviour change to support implementation (e.g. strategy: access new funding).

Conclusion Many implementation strategies require further specification in order to apply them in a setting, relying on assumptions and inference on the part of the intervention developer, be it researcher or practitioner. This creates an