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Sunlight and mental wellbeing: evidence of links from social housing in Glasgow, Scotland

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This research set out to investigate if access to sunlight in the home is a factor contributing to the psychological health and wellbeing of residents of social housing in Glasgow. A pilot study was undertaken in October 2012, involving survey of 40 residents living in flats of four tower blocks in the Shawbridge area of Glasgow (24 male, 16 female). Psychological health and wellbeing was assessed using two measures: (i) WEMWBS – the Warwick-Edinburgh Mental Wellbeing Scale; *Mental wellbeing*; and (ii) GHQ-12 – the General Health Questionnaire; *Psychological distress*. Sunlight received indoors was modelled using Integrated Environmental Solutions (IES) software (annual average, m² hr/yr). Separate calculations were made for each room and the level of occlusion from curtains and blinds was taken into account (recorded at the time of survey). Analyses were undertaken for (i) the sample as a whole (n = 40); (ii) a sub-sample of individuals who typically spent 2 hours or more in their living room each day (n = 18) (exploratory analysis indicated that the living room was the room that was used most during daylight hours).

Mental wellbeing scores ranged from 21-70 with a mean of 49 (SD = 12.2). Psychological distress scores ranged from 0-12 with a median of 2.5 (IQR = 5). There was no significant difference in average scores by gender for either variable. Modelled total sunlight for each dwelling (with level of occlusion from curtains and blinds taken into account) ranged from 0 to 6703 m² hr/yr, with a mean of 2500 m² hr/yr (SD = 1655). For the living room values ranged from 0 to 4567 m² hr/yr, mean = 1740 m² hr/yr (SD = 1295). Mental wellbeing was positively associated with living room modelled sunlight (r = .357, p < 0.05), however, after controlling for key confounding variables (gender, age), sunlight was not a significant predictor of mental wellbeing. Psychological distress was not found to be significantly correlated with any of the sunlight variables. For the sub-sample of individuals who typically spent 2 hours or more in their living room each day, mental wellbeing was positively associated with living room sunlight (r = .733, p = 0.001), and also total sunlight for the dwelling (r = .553, p = 0.017). Psychological distress was not correlated with any of the sunlight variables.

Further analysis currently in progress, including regression analyses for the sub-sample; investigation of links between mental health outcomes and environmental monitoring data (temperature, humidity, air quality); investigation of sample characteristics in relation to curtain/blind habits; use of daylight data for the month of October only.

Keywords: Mental Wellbeing, Psychological Health, Sunlight, Modelling, Architectural Design, Social Housing
