Comparing Medication Regimen Complexity Index and polypharmacy as measures of medication use.

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Background The Medication Regimen Complexity Index (MRCI) was developed to quantify the features of medication regimens in order to assess regimen impact on adherence and other outcomes. Polypharmacy and Excessive Polypharmacy have also been used for these purposes.

Purpose The aim of this study was to examine the relationship between the MRCI in older adults with intellectual disabilities and factors known to be associated with polypharmacy. A secondary aim was to compare the MRCI’s predictive validity to that of the number of medications.

Method Medication data were drawn from the 2014 second wave of the Intellectual Disability Supplement to the Irish Longitudinal Study on Ageing (IDS-TILDA); a longitudinal study on Ireland's aging population with Intellectual Disabilities (ID). This study randomly selected 5% of the individuals in the National Intellectual Disability Database aged 40 and over and recorded their demographics, lifestyle, health characteristics, needs and medication use. The Medication Regimen Complexity Index (MRCI) was calculated for 677 participants and its association with demographic and other characteristics were assessed while controlling for co-morbidity using the Functional Comorbidity Index. Descriptive statistics and Univariate Linear Models were used.

Findings The median MRCI score, including medications and supplements, was 19 and the median medication and supplement count was 7. For medications-only, the median MRCI score was 18 and the median medication count was 6. Age, level of ID, and type of residence were significant predictors of MRCI scores, but gender was not. MRCI increased statistically significantly as the overall Functional Comorbidity Index (FCI) increased. The variation in MRCI values was accounted for by Type of Residence (16.7%; Kruskal-Wallis test); 4.6% by age groups, 6.97% by level of ID, and 11.5% accounted for by FCI score. After controlling for comorbidity (FCI), MRCI associations with independent variables such as age, level of ID, and type of residence remained statistically significant. There was a high correlation between the MRCI and the number of medications.

Conclusion Participants with more complex medication regimens were older, had a more severe level of ID, were more likely to live in Residential Settings and had greater comorbidity. The MRCI showed similar properties when compared to the total number of medications in the factors associated with medication use assessed in this study.