

## RESEARCH BRIEF

# MEDICATION NON-ADHERENCE AND ADVERSE HEALTH OUTCOMES IN AGEING POPULATIONS: *AN ISSUE WORTH TACKLING?*

### EXECUTIVE SUMMARY

This systematic review and meta-analysis of the evidence indicated that medication non-adherence may be a risk factor for hospitalisations in older people, resulting in increased medical costs and economic burden that could be minimised if non-adherence was addressed in this cohort. However, there is great variability in the methods used to measure adherence and the duration of follow up, with an absence of consideration for multimorbidity across the evidence base. Further research that considers adherence to all chronic medications being consumed by this population, with adequate adjustment for other explanatory variables, is needed.

### SUMMARY OF THE PROBLEM

Medication adherence refers to the process by which patients take their medications as prescribed by their doctor.

As people age, they may encounter more barriers in adhering to their medication regimen due to drug related factors such as polypharmacy (taking  $\geq 2$  medications) and complex dosing regimens (having to take medicines at multiple intervals), as well as human factors such as cognitive impairment and decreased social support.

The absence of well-designed medication adherence studies in older people was noted in a previous review of barriers to medication adherence.

The aim of this review was to synthesize the evidence relating to medication non-adherence in people aged  $\geq 50$  years and its association with subsequent health outcomes such as healthcare utilisation, quality of life, mortality and clinical events.

### WHAT DID WE DO?

We conducted a systematic review of seven databases in order to identify published observational studies that assessed the association between medication (non-) adherence and the adverse health outcomes mentioned above.

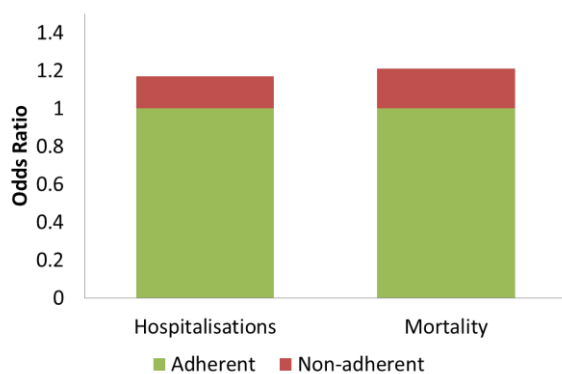
### WHAT DID WE FIND?

We found 66 studies that measured the association between medication (non-)



adherence and one or more of the aforementioned health outcomes. Nearly all of the included studies had a disease specific focus with regards to adherence measurement and most used pharmacy refill claims to measure adherence.

**FIGURE 1: IMPACT OF MEDICATION NON-ADHERENCE ON HEALTH OUTCOMES**



We found that medication non-adherence (i.e. not taking your medication as prescribed more than 80% of the time), was associated with a **17%** increased risk in hospitalisation and a **21%** increased risk in death over long term follow up (>1 year).

The 'healthy adherer' bias, whereby people who are adherent to their medication tend to exercise other healthy behaviours such as not smoking, maintaining a healthy weight etc., may explain the protective effect of medication adherence on mortality risk.

## WHAT CONCLUSIONS DID WE COME TO?

Medication non-adherence represents a significant risk for all-cause hospitalisation and mortality in older people. Hospitalisation of older people is one of the main drivers of high medical costs and medication non-adherence should be monitored and addressed in this cohort to prevent hospitalisation and reduce healthcare costs.

## RECOMMENDATIONS

Despite the relatively large evidence base, we were only able to conduct meta-analyses for three outcomes, consisting of a small number of studies.

Health care professionals such as clinical pharmacists should assess the potential presence of medication non-adherence when older patients attend hospital and explore the underlying reasons for non-adherence.

More concerted action is needed to establish and standardise methods of measuring adherence in older people with multimorbidity, which are comparable across studies.

## ACKNOWLEDGEMENTS

**Study co-authors:** Dr Caitriona Cahir, Dr Sarah Tecklenborg, Dr Catherine Byrne, Michael A Culbertson & Prof Kathleen E Bennett.

**Funding information:** This work was funded by the Health Research Board (HRB) Research Leaders Award (HRB RL-2015-1579) and conducted as part of the SPHeRE Programme under Grant No. SPHeRE/2013/1.

## FURTHER INFORMATION:

✉ carolinewalsh@rcsi.com

🐦 @CarolineWah25

## READ THE FULL ARTICLE HERE:

Walsh, CA, Cahir, C, Tecklenborg, S et al. The association between medication non-adherence and adverse health outcomes in ageing populations: a systematic review and meta-analysis. *Br J Clin Pharmacol*.2019