

SESSION 1655 (SYMPOSIUM)

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CLINICAL INTERVENTIONS TRACK: DRINKING, FLUID INTAKE, AND DEHYDRATION IN OLDER PEOPLE

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How many older people are dehydrated? Who is most vulnerable? How can we tell when people are becoming dehydrated? How do older people, care staff and relatives see drinking and dehydration? How can we help older people to drink enough fluid? If you want some answers please join us for this symposium.

Water-loss dehydration is the result of insufficient fluid intake, which leads to elevation of directly measured serum osmolality (the gold standard for hydration status). It is prevalent in older people living in the community and residential care and associated with increased risk of disability and mortality. Prevention, early identification, and treatment of dehydration would benefit older people, reduce healthcare costs and unplanned hospital admissions.

This symposium describes results from a program of work undertaken to help us understand:

1. prevalence and predictors of dehydration in older adults in UK residential care
2. utility of using urinary tests (urine color, specific gravity, osmolality) to screen for dehydration in older people (living in the community and in residential care)
3. utility of a Drinks Diary for self-assessment of beverage intake by older people
4. drivers and barriers to drinking (fluids) in older care home residents, and
5. what interventions help older people living in residential care, or with dementia, to drink well.

This symposium will focus on our new research in the context of existing research on dehydration. We will focus on the relevance and impact of recent research in supporting older people in remaining hydrated.

Abstracts:

DIAGNOSTIC ACCURACY OF URINARY TESTS TO SCREEN FOR WATER-LOSS DEHYDRATION IN OLDER PEOPLE

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Directly measured serum osmolality is the hydration gold standard in older people, but urinary measures are less invasive. We assessed diagnostic accuracy of urinary measures to screen for water-loss dehydration in older people against current dehydration (serum osmolality >300mOsm/ kg) and impending or current dehydration (≥ 295 mOsm/kg). We included older people living in residential care (DRIE study) and the community (NU-AGE), and assessed urinary specific gravity (USG), color and osmolality.

195 DRIE and 221 NU-AGE participants were included. While USG by refractometer or dipstick was better than chance at diagnosing impending or current dehydration, neither

USG or any other test had ROCAUC ≥ 0.7 , or sensitivity and specificity $\geq 70\%$ (which were the minimum useful diagnostic criteria set).

Although USG, urine color and urinary osmolality are widely advocated for dehydration screening in older adults, their diagnostic accuracy is insufficient. We should not use urinary measures to screen for dehydration in older people.

PREDICTORS OF DEHYDRATION IN OLDER PEOPLE: DEHYDRATION RECOGNITION IN OUR ELDERS (DRIE) STUDY

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We assessed prevalence of dehydration in older people living in residential care, and explored characteristics associated with serum osmolality and dehydration.

DRIE included 188 people living in UK long-term care (≥ 65 years, mean 87 years, 2/3 women). Previously suggested dehydration risk factors, continence, cognitive, functional and nutrition status were assessed. Univariate linear regression (STATA 11), stepwise backwards multivariate linear regression and logistic regression were used to assess relationships between characteristics and serum osmolality, the gold standard for hydration status.

20% were dehydrated (osmolality $>300\text{mOsm/kg}$) and a further 28% had impending dehydration ($295\text{-}300\text{mOsm/kg}$). Multivariate linear and logistic regression suggested that poorer renal function, poorer cognitive status and diabetic status were independently associated with greater serum osmolality and increased dehydration odds.

DRIE confirms that a high proportion of older people living in UK long-term care have current dehydration, and reinforces the importance of cognitive function and renal concentrating capacities in hydration maintenance.

THINKING ABOUT DRINKING: IDENTIFYING DRIVERS AND BARRIERS TO HYDRATION IN OLDER CARE HOME RESIDENTS

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Dehydration, due to poor drinking, is common amongst older care home residents. Why may residents choose to reduce their fluid intake? How do care staff interact with residents who refuse to drink? What do relatives think?

We invited residents, relatives, front-line and supervisory care staff to participate in separate focus groups to discuss what helps and hinders drinking.

In the staff groups, current media debates were identified as encouraging an upsetting and one-sided view of care within their homes. In the families' group, members expressed wishes to continue to be included in the care of their loved one, whilst often feeling excluded

and un-listened to. However, residents themselves expressed little criticism of their care while offering rich insights into the resonances that childhood and family drinking practices had for them.

This research provides novel insights into issues which may underpin drinking practices and dehydration in care homes.

INTERVENTIONS TO HELP OLDER PEOPLE DRINK WELL: TWO SYSTEMATIC REVIEWS

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We assessed the efficacy of interventions to reduce dehydration risk in older people in two systematic reviews, one of older people living in long-term care, the other of people with cognitive impairment (any setting).

We searched thirteen electronic databases for each review, and checked bibliographies. Studies of interventions to reduce dehydration in older people living in long-term care (review 1), and with cognitive impairment (review 2) were included. Two reviewers independently screened, selected, abstracted data, and assessed validity of included studies; narrative synthesis was performed. 18,000 titles, and >500 full text papers were assessed, 19 included in the long-term care review, 10 in the dementia review.

Studies were at high risk of bias. Multicomponent strategies (greater beverage choice and availability, staff education, increased assistance with drinking and toileting) were often effective, while resident advice, altering drinking environment, oral supplements and altering mode of delivery were not clearly effective.

THE DRINKS DIARY: SELF-ASSESSMENT OF DRINKS INTAKE BY OLDER PEOPLE IN RESIDENTIAL CARE (FISE)

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Many older people drink too little fluid, but care staff are unaware which residents are at risk of dehydration. FISE developed and evaluated a self-completed Drinks Diary for older adults living in residential care in Norfolk, UK, and compared it with direct observation.

We included 22 people (mean age 87 years, 12 with cognitive impairment). Participants recorded their own drinks intake over 24-hours using the Drinks Diary. Drinks Diary intakes were compared with intake assessed by direct observation (reference method).

Drinks Diary intake was highly correlated with researcher direct observation (Pearson correlation coefficient $r=0.93$, $p<0.001$, mean difference -163ml/day) and classified 19 of 22 participants correctly for sufficient drinks intake. The Drinks Diary can provide a reliable estimate of drinks intake in older people physically and cognitively able to complete it, and may be useful for older people themselves, plus carers and researchers needing to monitor drinks intake of elderly people.