*i*CAHE JC Critical Appraisal Summary

Journal Club Details

Journal Club location	Flinders Medical Centre
JC Facilitator	Pamela Hewavasam
JC Discipline	Speech Pathology
CAT completed by:	Matt Ransom

Question

Is there an association between dysphagia and mortality in nursing home residents?

Review Question/PICO/PACO

P: Nursing home residents aged 65 years or older

I: Dysphagia

O: 6-month mortality

Article/Paper

Wirth, R., Pourhassan, M., Streicher, M., Hiesmayr, M., Schindler, K., Sieber, C.C. and Volkert, D., 2018. The Impact of Dysphagia on Mortality of Nursing Home Residents: Results From the nutritionDay Project. Journal of the American Medical Directors Association.

Please note: due to copyright regulations CAHE is unable to supply a copy of the critically appraised paper/article. If you are an employee of the South Australian government you can obtain a copy of articles from the DOHSA librarian.

Article Methodology: Cross sectional study

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Ques No.	Yes	Can't Tell	No	Comments
1	√			**Did the study address a clearly focused issue?** The aim of this study is to evaluate the association of dysphagia and mortality in nursing home residents and identify further risk factors for mortality in residents with dysphagia.
2	√			**Did the authors use an appropriate method to answer their question?** Annual, voluntary 1-day cross-sectional survey Yes, however, could have been better **Is it worth continuing?** Yes
3	√ Just			**Was the cohort recruited in an acceptable way?** Annual, voluntary 1-day cross-sectional survey Could have been done better
4	√			**Was the exposure accurately measured to minimize bias?** Used the nutritionDAY nursing home questionnaires which were accessible in multiple languages. See paper for more details on questionnaire.
5		√		**Was the outcome accurately measured to minimize bias?** Mortality after 6 months – unsure how this was collected? Study mentions that it excluded all missing outcome data. Was mortality reported by nursing home? Or follow up with participants?

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| 6 | √ Only some | | | **Have the authors identified all important confounding factors?** Lots of factors come into mortality. Authors could have provided more information on cohort.

 Table 1 Baseline Characteristics of Participants With and Without Dysphagia

 Have they taken account of the confounding factors in the design and/or analysis? Regression analysis conducted

 Table 2 Regression Analysis of 6-Month Mortality and Its Risk Factors: Adjustment for Potential Confounders

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Table 1 — Baseline Characteristics of Participants With and Without Dysphagia

Characteristic	No Dysphagia	Dysphagia	P Value
	8617 (84.6)	1568 (15.4)	
Female	6752 (78.7)	1206 (77.4)	
Male	1839 (21.3)	355 (22.6)	.238
Age, y, mean ± SD	85.2 (8.0)	85.0 (8.3)	.221
BMI, mean ± SD	25.3 (5.5)	22.4 (5.0)	<.001
BMI <20	1275 (14.8)	531 (33.9)	<.001
Weight loss >5 kg*	830 (9.6)	321 (20.5)	<.001
Oral nutritional supplements	877 (10.2)	370 (23.6)	<.001
Tube feeding	29 (0.3)	229 (14.6)	<.001
Severe cognitive impairment	2132 (24.7)	1005 (64.1)	<.001
Immobility	1897 (22.0)	1111 (70.9)	<.001
Mortality	1024 (11.9)	388 (24.7)	<.001

SD, standard deviation.
Values are n (%) unless otherwise indicated.
*Weight loss during previous year.

Table 2 — Regression Analysis of 6-Month Mortality and Its Risk Factors: Adjustment for Potential Confounders

	Model 1 ($R^2 = 0.586$)		Model 2 ($R^2 = 0.592$)		Model 3 ($R^2 = 0.600$)		Model 4 ($R^2 = 0.601$)	
	OR (95% CI)	P Value	OR (95% CI)	P Value	OR (95% CI)	P Value	OR (95% CI)	P Value
Dysphagia	2.78 (2.00-2.60)	<.001	1.62 (1.39-1.88)	<.001	1.44 (1.24-1.68)	<.001	1.46 (1.25-1.71)	<.001
Age*	0.98 (0.98-0.98)	<.001	0.98 (0.97-0.98)	<.001	0.97 (0.97-0.97)	<.001	0.97 (0.97-0.97)	<.001
Gender (female)†	0.79 (0.69-0.90)	<.001	1.00 (0.88-1.15)	.969	1.03 (0.90-1.18)	.699	1.03 (0.91-1.19)	.603
Cognitive impairment‡			1.21 (1.06-1.37)	.04	1.15 (1.01-1.30)	.037	1.14 (1.00-1.29)	.052
Immobility§			1.76 (1.15-2.00)	<.001	1.66 (1.45-1.89)	<.001	1.65 (1.45-1.88)	<.001
BMI <20					1.78 (1.55-2.03)	<.001	1.68 (1.48-1.95)	<.001
Weight loss >5 kg					1.61 (1.37-1.88)	<.001	1.58 (1.35-1.85)	<.001
Tube feeding							0.88 (0.60-1.16)	.291
ONS							1.25 (1.06-1.47)	.008

R^2, Nagelkerke pseudo–R-squared.
*Continuous variable.
†Female vs male.
‡Severe cognitive impairment vs no severe impairment.
§Immobility vs no immobility.

| 7 | √ | | | **Was the follow up of subjects complete enough?** 6 month follow up – adequate but could have been more |

| 8 | | | | **What are the results of this study?** The 6-month mortality of residents with dysphagia was significantly higher than of those without dysphagia (24.7% vs 11.9%; P < .001). The multivariate regression analysis revealed dysphagia [odds ratio (OR) 1.44, 95% confidence interval (CI) 1.24-1.68, P <.001] along with body mass index <20 (OR 1.78, 95% CI 1.55-2.03, P <.001) and weight loss >5 kg (OR 1.61, 95% CI 1.37-1.88, P < .001) as independent and significant risk factors for mortality. Because of significant interaction, a disproportionately high mortality of 38.9% was found in residents with dysphagia accompanied by previous weight loss >5 kg (OR for interaction 1.44; 95% CI 1.03-2.01; P = .032).

 The authors concluded dysphagia was identified as an independent risk factor for 6-month mortality in nursing home residents. In particular, residents with dysphagia accompanied by weight loss are at a disproportionately high risk of mortality and should therefore receive special attention. |

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9		**How precise are the results?** P values, odds ratios and 95% Confidence intervals are reported. Confidence intervals demonstrated a range of precision across conditions.
10		**Do you believe the results?**
11	Journal Club to discuss	**Can the results be applied to the local population? Choose relevant context issues. The following are only suggestions to prompt discussion.** **CONTEXT ASSESSMENT** – *Infrastructure* – *Available workforce (? Need for substitute workforce?)* – *Patient characteristics* – *Training and upskilling, accreditation, recognition* – *Ready access to information sources* – *Legislative, financial & systems support* – *Health service system, referral processes and decision-makers* – *Communication* – *Best ways of presenting information to different end-users* – *Availability of relevant equipment* – *Cultural acceptability of recommendations* – *Others*
12		**Were all important outcomes considered?**
13		**Are the benefits worth the harms and costs?**
14		**What do the study findings mean to practice (i.e. clinical practice, systems or processes)?**
15		**What are your next steps?** *ADOPT, CONTEXTUALISE, ADAPT* **And then (e.g. evaluate clinical practice against evidence-based recommendations; organise the next four journal club meetings around this topic to build the evidence base; organize training for staff, etc.)**
16		**What is required to implement these next steps?**

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