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Can dietitians contribute to reducing inpatient days among frail elderly people?

A retrospective review of readmissions, length of stay and the impact of differences in anthropometry

malnutrition matters

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YOUR HOSPITAL *In the community*

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Agenda

- Background
- Research questions
- Method
- Results
- Conclusions
- Recommendations and Dissemination

Background

Background

- Frail Elderly Pathway (FEP) team **aims** to reduce avoidable admissions and length of stay (LOS)
- FEP Dietitian **aims** to contribute by supporting malnourished people in the community
- Existing evidence that malnourished people experience more frequent hospital admissions and longer LOS [1,2]

Project Aim

- Project aimed to explore whether above aims are being met by asking:

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Research questions

Primary questions

- 1) Do patients experience fewer admissions after start of dietetic intervention?
- 2) Do patients experience reduced LOS after start of dietetic intervention?

Secondary questions

- 3) Does weight change have an impact?
- 4) Does body mass index (BMI) have an impact?
- 5) Does change in muscle strength have an impact?

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Method

Participants

- ***Included***:
  - Patients who had FEP dietitian community intervention May 2015 to July 2016
- ***Excluded:***
  - died, end of life or moved out of area within 6 months of start date
  - one-off interventions
- 24 out of 52 patients met inclusion criteria
  - 14 female, 10 male, mean age 85 years

Data Collection

- Admissions and LOS data provided by IT from electronic patient records
- Anthropometry data collected during dietetic intervention
- Data during 6 months prior to and 6 months after start of dietetic intervention

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Results

Q1) Admissions data

- 67% decrease in total admissions during 6 months post intervention
- Statistically significant (t=4.164, df=23, p<0.05)

Admissions data	6m pre	6m post
Total admissions (n = 24)	42	14
Total patients with admissions	24	12
Mean number of admissions per patient (n = 24)	1.75	0.58

Results

Q2) LOS data

- 61% decrease in total inpatient days during 6 months post intervention
- 13% decrease in mean inpatient days per patient during 6 months post intervention

Length of stay (excluding outliers)*	6m pre	6m post
Total inpatient days	200	79
Number of patients	22	10
Mean inpatient days per patient	9.1	7.9

*2 patients removed from the original group of 24 because of particularly long admissions (36 and 46 days) due to awaiting care home placement while medically stable, distorting the data.

£15,730 estimated cost saving to local health economy

Results

Q3) Did weight change have an impact?

- Those who gained or maintained weight experienced a greater reduction in admissions than those who lost weight
- Relationship between LOS and weight change was unclear and distorted by two outliers

Weight change	Number	Mean change in total admissions per patient
Lost weight	5	-0.6
Stable weight (difference < 1%)	6	-1.3
Gained weight	13	-1.3

Results

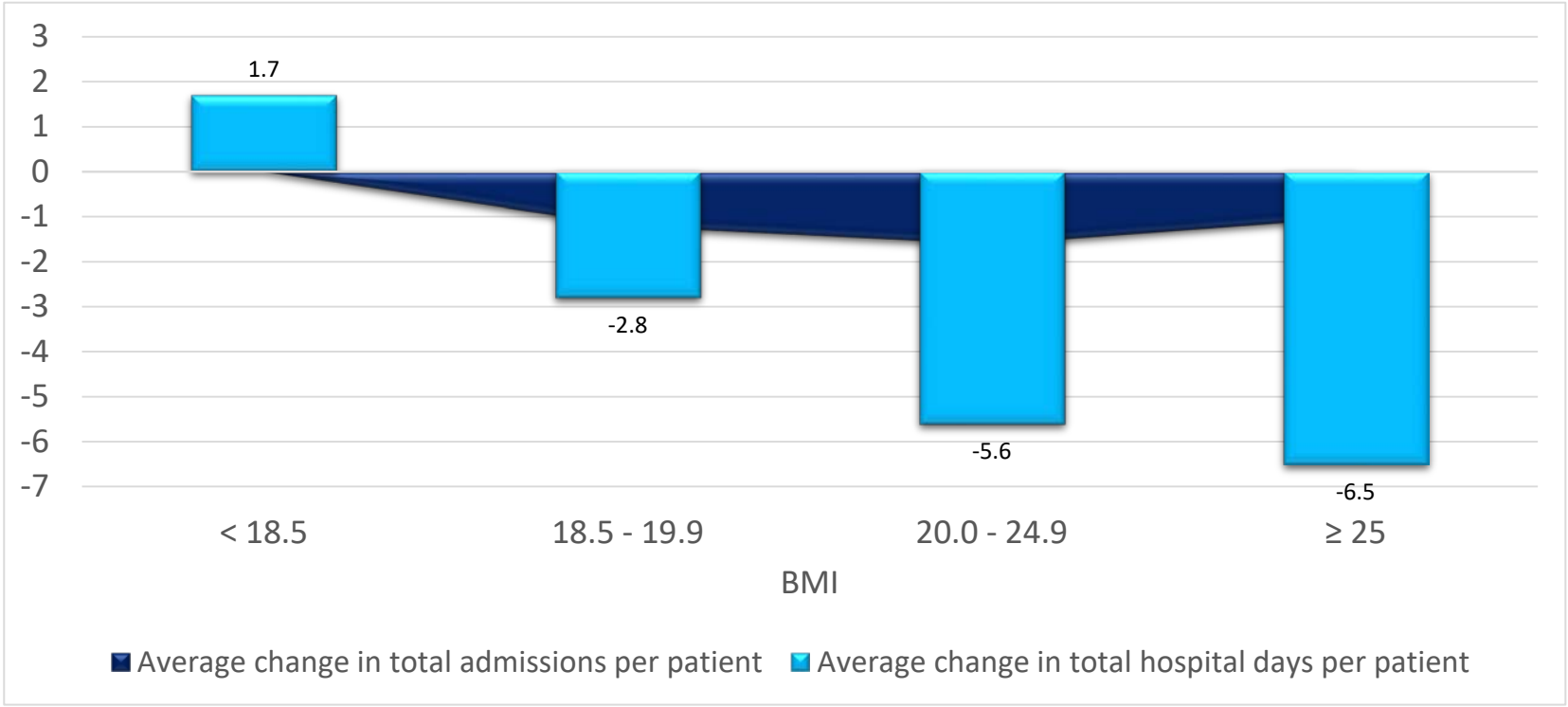
Q4) Did BMI have an impact?

- Average admissions per patient decreased only for those with BMI >18.5 kg/m^2 at start of intervention
- Greatest decrease in patients with healthy BMI (20-24.9 kg/m^2)
- Mean LOS decreased as BMI increased

Body Mass Index (BMI) (kg/m^2)	Number	Mean change in total admissions per patient	Mean change in total hospital days per patient
< 18.5	3	0.0	+1.7
18.5 - 19.9	6	-1.2	-2.8
20.0 - 24.9	12	-1.6	-5.6
≥ 25.0	2	-1.0	-6.5

Results

Q4) Relationship between BMI, admissions and LOS



Results

Q5) Did muscle strength have an impact?

- Overall, impact unclear and limited by smaller numbers.

Change in handgrip strength (non-dominant hand)	Number	Mean change in total admissions per patient	Mean change in total hospital days per patient
Decrease in strength	1	-1.0	N/A
Increase in strength	13	-1.3	-4.2
Average for full group	24	-1.17	-1.2

Conclusions

- The multidisciplinary FEP team has contributed towards a 67% reduction in readmissions and a 61% reduction in inpatient days at 6 months follow-up.
- Potential implications for patient experience, cost efficiencies and hospital flow.
- Dietitians can contribute to reducing hospital admissions and LOS.
- Weight loss and BMI <18.5 kg/m^2 are risk factors for (re)admissions in frail elderly patients.
- Negative association between BMI and LOS.
- Consistent with previous findings that malnourished people experience more frequent admissions and longer LOS and that reversing malnutrition can reduce risk for admissions.[1,2]

It should be noted that this patient group is frail and elderly with multiple comorbidities, so admissions cannot always be prevented.

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Recommendations and Dissemination

Share locally to increase awareness of the role of nutrition and dietitians in admissions reduction strategies:

- shared with local nursing and therapy teams

Share nationally:

- CN[3]
- Frontline Therapy magazine[4]
- BAPEN Conference
- BDA Research Symposium

Continue:

- Dietetic intervention with malnourished frail elderly patients
- Empowering community teams to identify and act on malnutrition

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Questions

References

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2. Stratton R, Green C, Elia M (2003) *Disease-related malnutrition: an evidence-based approach*, Oxford: CABI Publishing

3. Nash L (2017), Reducing Hospital Admissions Among Frail Elderly People, *CN* 17 (1) Feb/Mar 2017: 68-70

4. Nash L (2017), Advice line: don't overlook the role of nutrition, *Frontline The Physiotherapy magazine for CSP members,* 23 (9) 17 May 2017