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DEVELOPMENT OF A QUALITY OF MEALS AND MEAL SERVICE SET OF INDICATORS FOR RESIDENTIAL FACILITIES FOR ELDERLY

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A study in cooperation with the Center for Gastrology.

With financial support of Unilever Food Solutions.

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INTRODUCTION

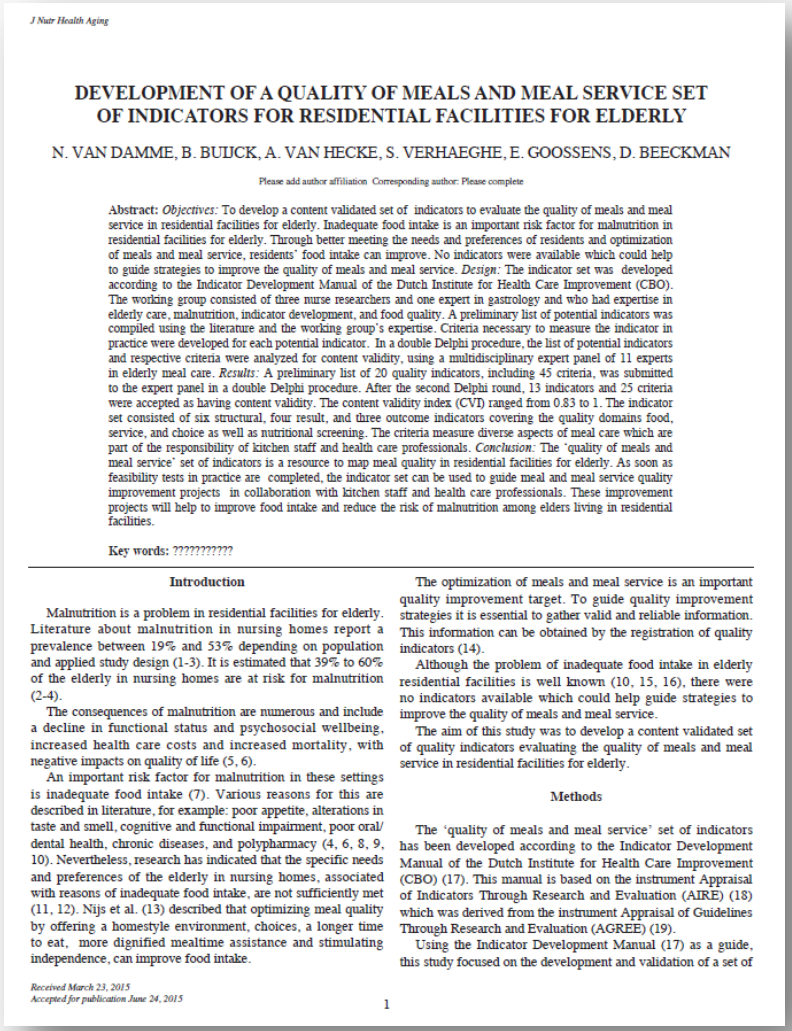
- **Malnutrition** in residential facilities for elderly: **9 - 53%**
- At risk for malnutrition: 39 - 60%
- **Consequences**: decline in functional status and psychosocial wellbeing, increased health care costs, increased mortality, decreased quality of life
- Inadequate food intake = risk factor for malnutrition due to:

  poor appetite

  alterations in taste and smell,

  cognitive and functional impairement
- Optimising meal quality and service = quality improvement target
- No set of **indicators** available

AIM



J Nutr Health Aging

DEVELOPMENT OF A QUALITY OF MEALS AND MEAL SERVICE SET OF INDICATORS FOR RESIDENTIAL FACILITIES FOR ELDERLY

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Abstract: *Objectives:* To develop a content validated set of indicators to evaluate the quality of meals and meal service in residential facilities for elderly. Inadequate food intake is an important risk factor for malnutrition in residential facilities for elderly. Through better meeting the needs and preferences of residents and optimization of meals and meal service, residents' food intake can improve. No indicators were available which could help to guide strategies to improve the quality of meals and meal service. *Design:* The indicator set was developed according to the Indicator Development Manual of the Dutch Institute for Health Care Improvement (CBO). The working group consisted of three nurse researchers and one expert in gastrology and who had expertise in elderly care, malnutrition, indicator development, and food quality. A preliminary list of potential indicators was compiled using the literature and the working group's expertise. Criteria necessary to measure the indicator in practice were developed for each potential indicator. In a double Delphi procedure, the list of potential indicators and respective criteria were analyzed for content validity, using a multidisciplinary expert panel of 11 experts in elderly meal care. *Results:* A preliminary list of 20 quality indicators, including 45 criteria, was submitted to the expert panel in a double Delphi procedure. After the second Delphi round, 13 indicators and 25 criteria were accepted as having content validity. The content validity index (CVI) ranged from 0.83 to 1. The indicator set consisted of six structural, four result, and three outcome indicators covering the quality domains food, service, and choice as well as nutritional screening. The criteria measure diverse aspects of meal care which are part of the responsibility of kitchen staff and health care professionals. *Conclusion:* The 'quality of meals and meal service' set of indicators is a resource to map meal quality in residential facilities for elderly. As soon as feasibility tests in practice are completed, the indicator set can be used to guide meal and meal service quality improvement projects in collaboration with kitchen staff and health care professionals. These improvement projects will help to improve food intake and reduce the risk of malnutrition among elders living in residential facilities.

Key words: ??????????

Introduction

Malnutrition is a problem in residential facilities for elderly. Literature about malnutrition in nursing homes report a prevalence between 19% and 53% depending on population and applied study design (1-3). It is estimated that 39% to 60% of the elderly in nursing homes are at risk for malnutrition (2-4).

The consequences of malnutrition are numerous and include a decline in functional status and psychosocial wellbeing, increased health care costs and increased mortality, with negative impacts on quality of life (5, 6).

An important risk factor for malnutrition in these settings is inadequate food intake (7). Various reasons for this are described in literature, for example: poor appetite, alterations in taste and smell, cognitive and functional impairment, poor oral/dental health, chronic diseases, and polypharmacy (4, 6, 8, 9, 10). Nevertheless, research has indicated that the specific needs and preferences of the elderly in nursing homes, associated with reasons of inadequate food intake, are not sufficiently met (11, 12). Nijs et al. (13) described that optimizing meal quality by offering a homestyle environment, choices, a longer time to eat, more dignified mealtime assistance and stimulating independence, can improve food intake.

The optimization of meals and meal service is an important quality improvement target. To guide quality improvement strategies it is essential to gather valid and reliable information. This information can be obtained by the registration of quality indicators (14).

Although the problem of inadequate food intake in elderly residential facilities is well known (10, 15, 16), there were no indicators available which could help guide strategies to improve the quality of meals and meal service.

The aim of this study was to develop a content validated set of quality indicators evaluating the quality of meals and meal service in residential facilities for elderly.

Methods

The 'quality of meals and meal service' set of indicators has been developed according to the Indicator Development Manual of the Dutch Institute for Health Care Improvement (CBO) (17). This manual is based on the instrument Appraisal of Indicators Through Research and Evaluation (AIRE) (18) which was derived from the instrument Appraisal of Guidelines Through Research and Evaluation (AGREE) (19).

Using the Indicator Development Manual (17) as a guide, this study focused on the development and validation of a set of

Received March 23, 2015
Accepted for publication June 24, 2015

To develop a content validated set of quality **indicators** evaluating the **quality of meals** and **meal service** in residential facilities for elderly.

Reference:

Van Damme, Buijck, van Hecke, Verhaeghe, Goossens, Beeckman. J Nutr Health Aging, 2016

WHAT IS A "SET OF INDICATORS"?

A quality indicator is a method of measurement which gives data that may be related to the quality of a service (Øvretveit 2001)

- **Information** is required, to give an opinion on the quality of care
- This information is obtained by **measuring**
- An indicator gives meaning to a measurement, it has a **signal function**
- However, an indicator becomes meaningful if a **norm** is determined
- A deviation from the norm needs to be adjusted (e.g. by quality improvement projects)

MEASURE AT DIFFERENT LEVELS

Structural indicators

- Indication of the **organizational conditions** in which care can be provided

Process indicators

- Indication of the **course of processes** in an organiszation

Outcome indicators

- Indication of the **outcome of care**

METHOD

- ***Indicator Development Manual of the Dutch Institute for Health Care Improvement*** (CBO, The Nederlands)
  - Appraisal of Indicators Through Research and Evaluation (AIRE)
  - Appraisal of Guidelines Through Research and Evaluation (AGREE)

- **Composition of the working group**
  - Three researchers (nursing) and a gastrology expert
  - Expertise: elderly care, malnutrition, indicator development, and food quality

METHOD

1	Establishing the overall goal
2	Composing a working group
3	Re-confirming the overall goal with the working group
4	Clearly defining the scope
5	Searching for indicators
6	Listing potential indicators
7	Summarizing potential indicators
8	Elaborating indicators into factsheets
9	Composing a reading guide
10	*Review of the specifications and feasibility assessment*
11	*Formulate the generic specifications*
12	*Stakeholder consultations*
13	*Adapt and finalise the indicators*

Source: Kwaliteitsinstituut voor de Gezondheidszorg CBO

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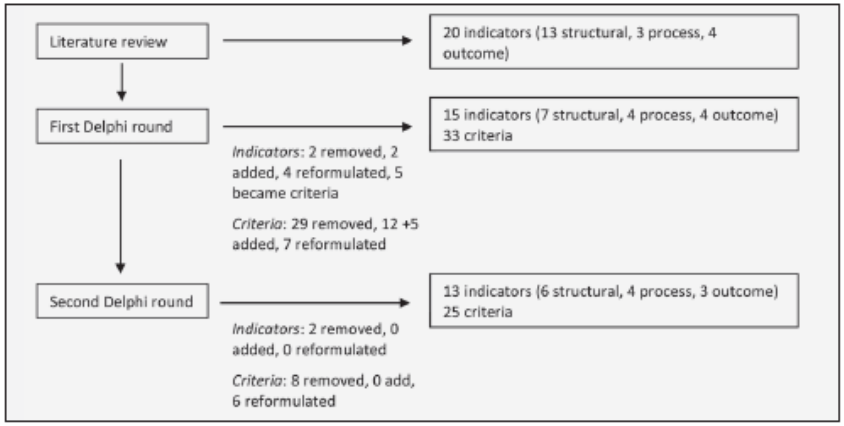
METHOD



- First list of 20 indicators (consisting of 45 criteria) from **literature search** and **expert consultation**
- Dubble **Delphi procedure** with multidisciplinary expert group (n = 11) converted the set to 13 indicators (Content Validity Index: 0,83 – 1) at the following levels:
  - Structure (n = 6)
  - Process (n = 4)
  - Result (n = 3)
- Domains: ***food quality, selection, screening***
- Indicators in the areas of responsibility of ***kitchen staff and care staff***

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RESULTS: STRUCTURAL INDICATORS

'Quality of meals and meal service' set of indicators

Structural indicators

IND1: A procedure for screening and caring for malnourished residents is established. (I, G) (14, 29-31)

- Crit1a: Is a standardized weighing policy available? (L) (32)
- Crit1b: Is a validated screening instrument available? (L) (33)
- Crit1c: Is an action plan for malnourished residents available?
- Crit1d: Is a staff member referred to as responsible for the screening and treatment policy?

IND2: A policy for tailoring meals to the preferences and needs of the residents is established. (L) (11, 12, 13)

- Crit2a: Is a structural consultation established with kitchen staff and staff of at least two different care disciplines?
- Crit2b: Is a procedure established to involve residents in compiling the menu? (G, L) (29, 34, 35)
- Crit2c: Is a procedure established for systematically inquiring the residents about food, food service and choice?
- Crit2d: Is it possible for residents to individually adjust the taste of their meals (e.g. presence of sauces, flavours, …)?

IND3: Recipes are tailored to the needs of the residents.

- Crit3a: Are written recipes available for the staff preparing the meals?
- Crit3b: Are specific recipes available for residents with chewing and swallowing difficulties? (L) (4, 36)
- Crit3c: Are the recipes systematically reviewed?

IND4: Staff involved in meal care has the right competences. (L)(34)

- Crit4a: Has the chef the cuisine an appropriate diploma to execute his/her function in the kitchen?
- Crit4b: Did the chef de cuisine follow a supplementary education in tailoring meals to the elderly?
- Crit4c: Is training in meal care provided for each feeding assistant? (L) (34)

IND5: A vision on meal care is established.

- Crit5a: Is a vision on meal care written?
- Crit5b: Has the vision on meal care been communicated to the staff involved in meal care?
- Crit5c: Has the vision on meal care been communicated to the residents?

IND6: The food being served is varied. (L) (34, 37)

- Crit6: Is a system that guarantees variation in food used?

IND: indicator; Crit: Criterion, I: derived from (an) indicator set(s); G: derived from (a) guideline(s); L: derived from literature

EXAMPLE

IND2: A policy for tailoring meals to the preferences and needs of the residents is established. (L) (11, 12, 13)

Crit2a: Is a structural consultation established with kitchen staff and staff of at least two different care disciplines?

Crit2b: Is a procedure established to involve residents in compiling the menu? (G, L) (29, 34, 35)

Crit2c: Is a procedure established for systematically inquiring the residents about food, food service and choice?

Crit2d: Is it possible for residents to individually adjust the taste of their meals (e.g. presence of sauces, flavours, …)?

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RESULTS: PROCESS AND OUTCOME INDICATORS

'Quality of meals and meal service' indicator set
Process indicators
IND7: The proportion of residents whose weight change was documented (I, G) (14)
Numerator: number of residents with a documented weight difference between last month and the month before
Denominator: number of clients living in the residence for at least three months
IND8: The proportion of residents with documented results of a malnutrition screening (I) (14, 24, 29-31)
Numerator: number of residents with documented results of a malnutrition screening during the last three months
Denominator: number of residents living in the residence for at least four months
IND9: The proportion of residents whose eating habits were documented (L) (35)
Numerator: number of residents whose habits according to food, service and choice have been registered at least twice during the last year
Denominator: number of residents living in the residence for at least 12 months
IND10: The amount of residents per meal assistant, who need help with the principal meal (L) (38, 39)
Numerator: number of residents needing help with the principal meal
Denominator: number of meal assistants in the residence during principal meal
Outcome indicators
IND11: The prevalence of residents with risk of malnutrition
Numerator: number of residents with malnutrition according to the last screening from the last three months
Denominator: number of residents being screened with a validated malnutrition screening instrument during the last three months
IND12: The prevalence of malnourished residents
Numerator: number of residents with malnutrition according to the last screening from the last three months
Denominator: number of residents being screened with a validated malnutrition screening instrument during the last three months
IND13: The prevalence of residents expressing mealtime satisfaction (I) (24)
Numerator: number of residents reporting being (very) satisfied with mealtime quality according to the last questioning from the last six months
Denominator: number of residents who responded the question about mealtime satisfaction at to the last questioning from the last six months

IND: indicator; I: derived from (an) indicator set(s); G: derived from (a) guideline(s); L: derived from literature

METHOD FOR CALCULATING

Formula	Result = (Sum of results of criteria / amount of criteria) * 100%		
Example	IND1: A procedure for screening and caring for malnourished residents is established.		
	Crit1a: Is a standardized weighing policy available?	Yes	= 1
	Crit1b: Is a validated screening instrument available?	Yes	= 1
	Crit1c: Is an action plan for malnourished residents available?	No	= 0
	Crit1d: Is a staff member referred to as responsible for the screening and treatment policy?	No	= 0
	NUMBER OF CRITERIA = 4 (1a, 1b, 1c, 1d)	SUM OF RESULTS= 2	
	RESULT: IND1 = (2/4) * 100% = 50%		

IND: indicator; Crit: criterion

DISCUSSION

- The first short and simple set of meal quality indicators
- 13 quality indicators covering food, food service, choice, nutritional screening
- Structure, process, and outcomes measured
- Content validated using a multidisciplinary experts (BE and NL)
- Feasibility in practice should be assessed in future studies

CONCLUSION

- **Quality indicators**
  - start point for dialogue
  - motor of improvement, not the goal
- Guide meal and meal service **quality improvement projects**
- In **collaboration** with kitchen staff and health care professionals
- To **improve** food intake and reduce risk of malnutrition among elderly in residential facilities

ACKNOWLEDGEMENTS

- Center for Gastrology (Leuven)
- Unilever Food Solutions
- All experts who cooperated in the content validation of the instrument

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CENTER FOR GASTROLOGY

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