

Improving residents' wellbeing in senior citizen homes with more individualized food services

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Abstract. Currently, food services in Swiss senior citizen homes heavily depend on the presence and working hours of human resources. For most residents, there is currently no possibility to eat according to their individual needs or preferences. However, trends like flexible catering, the reduction of the importance of lunch as main meal of the day or the “snackification” will influence service delivery in senior citizen homes in the future. At the same time, staff shortage and decreasing financial means force institutions to find new service designs. The goal was to find out how the wellbeing of residents in senior citizen homes can be improved by providing more individualized food services. Based on literature, a mixed-method research approach was chosen, combining expert interviews and a survey amongst management and staff representatives of Swiss senior citizen homes. It becomes clear that a more flexible food service provision needs to be thought in a holistic context encompassing the whole organisation, including not only hospitality staff but also management and care professionals.

1. Introduction

For a general orientation, the following section explains the starting position with the research gap, defines the research goal and questions and specifies the delimitations.

1.1. Starting position, research gap

In Switzerland, senior resident homes, also known as retirement homes or nursing homes, are institutions that provide accommodation, care, and support to older adults who require assistance with their daily activities. According to current official statistics, Switzerland has a total of 1'553 senior citizen and care homes [1]. As the Swiss society is continuing to age (a phenomenon shared with other countries in the Western European context), caring for the elderly is becoming an increasing challenge [2]. Not only does the relationship between professionals and retired change [1], current and upcoming mega-trends will find their way into senior citizen homes as well and will have an impact on daily life in this context [3]. Food service is an essential component of senior resident homes, and it plays a crucial role in ensuring that the residents receive the necessary nutrients for their physical and mental wellbeing [4].

Currently, food services in senior citizen homes are being provided in a traditional manner (pre-ordering in advance from a limited offer of menus, pre-defined time slots for food intake, set location) and thus heavily depend on the presence and availability of human resources. This typically results in



fixed eating times and subsequently the fact that for most residents, there is currently no possibility to eat according to their individual needs or preferences. Whilst this has been widely accepted by customers (residents, as well as relatives) so far, institutions will have to adapt to more individually oriented residents in the near future. Trends such as flexible catering, individual food intake instead of lunch tables as the main course of the day or “snackification” [5] will have an influence on service delivery in senior citizen homes as baby boomers are moving in (and even more soon also members of Generation X). At the same time, staff shortage and decreasing financial means force institutions to find new service designs [6], [7].

Research about nutritional requirements for and food intake behavior of elderly as well as research about different kind of food services in hospitals has been reported [8], [9]. However, little has been examined about the provision of food services in senior citizen homes with a focus on processes and necessary organisational changes.

1.2. Research goal and research question

To find out about the current situation in Swiss senior citizen homes as well as the potential need for further research, a preliminary study was conducted. The research questions were:

- What would be an ideal independent and flexible¹ catering² in senior citizen homes in the future?
- How could technological means support this vision?
- What would be potential obstacles to realize this vision and how could they be overcome?

1.3. Delimitation

In this paper, the research results of the preliminary study are summarized. The focus of this article lays on the discussion of the findings and the implications on development of hospitality services as part of facility management.

Diet-related aspects and nutritional requirements and their significance or malnutrition were not part of the research.

2. Senior citizen homes and their current challenges influencing food service provision

2.1. Senior citizen homes and their general challenges

Senior citizen homes are defined as institutions providing services for the specific needs of elderly particularly at the end of their lives [7], [10].

One of the main challenges that senior citizen homes currently face is the fact that the life expectancy is still growing world-wide while the birth rate is decreasing in most Western countries [11], thus making it difficult to secure care for the elderly. Besides the development of a different attitude about aging and becoming a “Silver Society” [12], the need for different socio-economical frameworks, adapted service provisions, new ways of staff collaboration and an increased application of technology become apparent [12]–[15].

The mega trend of individualization (having more different choices and more autonomy) forces society and particularly social institutions to find new ways for collective organisations including more individual self-realisation [12]. Self-realization here refers to an individual’s process of gaining a deep understanding of oneself and one’s true nature. It is the recognition or realization of one’s essential identity [16].

2.2. Significance/situation of food services for residents in senior citizen homes

It has been reported that the provision of good nutrition in senior citizen homes leads to better cognitive functioning as well as physical and mental health [17]–[20]. It has also been found that greater wellbeing

¹ Ideal independent and flexible refers to increased choice for residents as to when and what they would like to eat as opposed to the current standard where meals are served at fixed times and choice is limited

² In the context of this study, the term “catering” refers to the provision of food services

is based on greater food satisfaction including e.g. catering autonomy (choice of time and accompaniments, availability of snacks, possibility of food delivery by family members, mimicking home), food being presented appetizingly, well-tempered and suited to the need of elderly as well as the possibility to influence the meal offerings [18], [21]–[24]. Particularly for new residents, the loss of control over their nutrition has been found to be drastic [25], [26]. Communal meals as a social and cultural activity were found to have a positive impact (animation to eat, exchange about healthy food) [25] but can also influence in negative ways (too much food intake, increased alcohol consumption) [27].

2.3. Flexible food services in senior citizen homes – current challenges

Current organisational barriers for providing individual food choices are seen in budgetary constraints, limited staff awareness and skills, staff attitude and applied rostering time [18]. In addition, it is not clear yet, which of the prognosticated food trends will arrive when and in what intensity [5]. When applying technical means for a more flexible food service provision, it becomes clear that current solutions are not yet satisfactory, as they can currently only compensate certain human actions but not provide a fully equivalent service [13], [14] while at the same time the acceptance for technology in Western care institutions is not yet given, on both sides, the resident's as well as the staff side, comprising unsolved ethical as well as data security issues [13], [14].

3. Research Methods

After the outline of the research design, the sampling, the data collection and analysis are described for both, the first qualitative and the second quantitative research phase.

3.1. Research Design

In this research, an exploratory sequential mixed methods design, starting with a qualitatively driven core component, followed by a quantitative survey was chosen [28]–[30]. Generally, qualitative research methods are used to allow the researcher to gain a deeper understanding of the object under study, usually by studying a smaller population [31]. Quantitative research then aims to measure social variables and enables the development of law-like generalisations [32]. The sample of the study refers to management and staff of Swiss senior citizen homes. For this study, no residents of senior citizen homes were part of the sample.

3.2. 1st phase: qualitative research method

The goal of the first qualitative research phase was to gain a deeper understanding of the current situation in senior citizen homes and to identify potential access to a broader sample for further research.

A non-probabilistic, heterogenous purposive sample was chosen [32].

Eleven experts were interviewed, four of which represented a strategic management level (directors or board members of senior citizen homes) and seven were responsible managers for hotel services operations in different senior citizen homes within Switzerland. For the avoidance of doubt, interviews were held with management and staff members of Swiss senior citizen homes, but not with residents.

In order to facilitate participation, expert interviews were conducted online. The interviews were transcribed as summaries, as the focus was on general statements [33].

The data analysis was done in MAXQDA. A summarizing content analysis was conducted, generating an inductive creation of categories [33].

3.3. 2nd phase: quantitative research method

Based on the findings of the qualitative research phase, questions were formulated with the objective to confront a broader, more diverse sample and to categorize and prioritize the preliminary findings further. Based on concepts that had emerged from the qualitative phase, a questionnaire was developed and pre-tested.

For the quantitative research phase, a full survey approach was chosen [32]. Out of the official list of all Swiss senior citizen homes [34], all institutions in the German speaking area of Switzerland with publicly available e-mail contact information (1066) were sent an e-mail asking to participate in the survey.

The data collection was done online using LimeSurvey. Data was then analysed using SPSS version 28. Due to the general nature of the preliminary research the results were presented by descriptive statistics [35]. Principal Components Analysis was further conducted to reduce the data to a smaller number of factors [36].

4. Summarized results [4]

Firstly, the results of the qualitative research phase of the preliminary study are summarized, followed by the results of the quantitative research phase.

4.1. Results of expert interviews

In terms of an ideal independent and flexible catering in senior citizen homes, experts mentioned a completely self-determined food service as a vision. This should include the possibility to continue the previous food habits, a full flexibility in choice of meals, eating time and place, according to desire and state. Additional fee-based services should be provided as well as the possibility to eat with visiting friends and relatives. Nutritional data, allergy facts and declaration of provenance of food should be available as well as other food-related information.

In general, experts consider staff and organisational culture in Swiss senior citizen homes to lack innovativeness, combined with low affinity to technology and digitality. Subsequently, answers to the question on how technological means could support this vision were diverse. While some experts see the absolute need for robots or other technological devices in the future catering service provision, others are unable to imagine or accept the loss of humanness by the use of robots in the contact with the residents. However, all experts throughout consider the application of more technological support in the production process a necessity not only to overcome staff shortage but also to reduce food waste. While currently only a minority of residents are able to apply digital devices, the digital maturity of residents is expected to be growing and with it the demand and possibility to access information and services individually and more self-determined.

As potential obstacles in realizing the vision and their overcoming, a broad range of aspects were mentioned:

- Lack of finances and changing needs of residents increase the pressure to find more effective and efficient ways of service providing. This fact is confronted with a rather traditional, non-innovative mindset of staff. Experts suggest change management measures not only for staff groups but for the whole sector.
- In terms of providing more flexible food services, it was suggested to make a differentiation of residents with and without special medically or physically indicated food needs. Those with special needs have less flexibility per se. Already today it is noticeable that new residents arrive with more diverse needs due to more individualized lifestyles but also because of more diverse cultural backgrounds. The experts suggest that institutions should start differentiating between different resident personas in order to shape services accordingly.
- The kitchen and hospitality staff are the core players in terms of food production and serving. However, a truly flexible food provision will only be possible if other services provided are harmonized and allow for this flexibility. The experts therefore suggest a mind-changing discussion of staff roles and the general personnel skill mix. When doing so, the design of the service provision should follow a resident-centered approach. In this fundamental discussion, experts declared stakeholder management and an intensive relationship management as a crucial aspect.

- Experts see the need in many senior citizen homes to firstly update their ICT and software architecture as well as augmenting the digital and technological readiness of the staff, before starting with more technologically focused experiments.

4.2. Survey results

The survey was answered by 67 participants resulting in a response rate of 6.2 %. It needs to be noted that not all participants responded to all questions. Even though the study is of exploratory nature of the study, the response rate is considered to be considered low. Effects of non-response bias have to be considered and the representativeness of the findings can be questioned [31]. Nevertheless, the results allow to gain an initial understanding of the phenomena, especially when viewed in connection with the findings of the qualitative part of the study [32].

Using descriptive statistics, the sample can be described as follows[37]:

- The majority is between 41-60 years old (69%, N= 67).
- Respondents are distributed among the following functional groups (N=67):
 - 55% board of directors/management
 - 40% hospitality
 - 5% nursing.
- The type of institution in which respondents work is defined as follows:
 - 49% of the respondents work in a long-term institution with public-law sponsorship.
 - 51% with private-law sponsorship (N= 67).
 - 70% of respondents work in a non-profit institution (N=67).
- The size of the long-term institution varies between 50 and more than 150 places
 - 60% of the institutions have 50 to 150 long-term places (N=67).
 - 40% have more than 150 long-term places.

Although the sample seems biased for age on first sight, it needs to be noted that senior management members of the institution (members of the board or of the direction) are strongly represented. As such, it can be claimed that a strategic perspective is represented in the sample. It however needs to be noted that the perspective of the nursing profession is under-represented in the survey findings.

Some of the questions (variables) asked for agreement with certain statements. In order to be able to identify correlations between different variables and to reduce the number of variables, an exploratory factor analysis (Principal Components Analysis (PCA)) was conducted [37]. Here, 7 variables were included in the solution. Examination of the correlation matrix revealed the presence of coefficients of 0.3 and above. The Kaiser-Mayer-Olkin value was 0.57, which was above the recommended minimum value of 0.5, and Bartlett's Test of Sphericity reached statistical significance. The ratio of cases to variables was 8.7, within the limits for small samples (8-10). Thus, the suitability of the data for Principal Components Analysis could be concluded [36].

Principal Components Analysis yielded a three-component solution that explained a total of 64.2% of the variance, with Component 1 contributing 26.7%, Component 2 contributing 22%, and Component 3 contributing 15.5%. Varimax rotation was performed to facilitate interpretation of these components [38]. The rotated component matrix obtained showed that the variables each loaded strongly and quite unambiguously on a factor. The component labels were chosen to interpret the variables they contained. Following are the components as well as their underlying variables that emerged from the rotated component matrix:

Component 1: "Technology as a Solution." The first component is composed of the following variables:

- I can imagine that human-machine collaboration in long-term institutions can alleviate the shortage of skilled workers.
- Resource-efficient production of catering is not possible without technological aids.
- There will be no flexibilization of catering in nursing homes for cost reasons.

Component 2: "Need for professionalization of catering". The second component is made up of the following variables:

- If I should one day live in a retirement home, I would like to be advised competently and tailored to my needs in nutritional matters, but I would still like to be able to cater for myself in a self-determined manner and at my own whim.
- The tasks of nursing and hotel services should be clearly separated.

Component 3: "Need for transformation support". The third component is composed of the following variables:

- Smaller homes need more support in digital transformation than larger homes.
- Without the support of long-term institution associations, digital transformation becomes difficult for homes.

The Principal Components Analysis allows a reduction of the 7 included variables to 3 components. These conceptually include the agreement of survey participants on the statements. It shows that technology is considered necessary in the context of making food service more flexible and that the area of food service delivery should be professionalized. Finally, the findings show that external assistance will be necessary for the transformation.

5. Discussion and Limitations

In this chapter, the summarized results of the qualitative and the quantitative research phases are discussed particularly preparing the ground for the conclusion about the implications for hospitality services as part of facility management.

5.1. Discussion of results

Both the expert interviews as well as the survey results show a need in more flexible and self-determined food service provision in senior citizen homes fulfilling the need of more individual lifestyles and more different cultural backgrounds. This also includes the estimation of future requests in further hospitality services.

The role of robots or other technical means towards a more flexible food service provision (and whether they will mitigate the shortage in skilled staff) is a crucial discussion. A great variety in responses became evident in the survey, supporting the very personal and emotional responses that were collected during the expert interviews. The same applies to the question about the digital readiness of staff and residents, with a greater openness and readiness on the food production side.

As potential obstacles in realizing the vision of more flexible food services, the availability of financial resources is an important aspect to be considered as both the expert interviews as well as the survey reveal. It furthermore became evident that there is a need for further clarification of future roles and terms of collaboration of different professions as well as working cultures across the whole organisation. The need for an increased digital and technological maturity is rated higher by interviewed experts than by survey participants. There seems to be a need for clarification on what the specific requirements for different job profiles are.

5.2. Limitations

With the nature of this study being an exploratory one, the discussion and conclusion have to be considered the same and can only serve as a basis for further, more detailed research. As such, the research questions were broad. It turned out that for researching the whole great number of aspects brought up in the interviews, a more diverse set of experts will have to be considered. The survey had a relatively low response rate and is biased towards senior management members, thus not giving voice to other staff members. Also, no residents or stakeholders other than staff were part of this exploratory study. Only senior citizen homes in the German part of Switzerland were included thus not comprising institutions in the French, Italian or Rhaeto-Romanic parts of Switzerland.

When interpreting the statistical data, the following limitations must be taken into account: The number of responses ($N = 67$), while sufficient for the chosen analysis as outlined above, must be considered low overall given the number of contacts invited to participate. Following the exploratory nature of the study, extracted components have low Cronbach's alpha values; thus, the reliability of the

scales can be considered low [37]. Two of the components have only two variables. Components with fewer than three variables are regularly criticized as weak and lacking stability [39]. There are, however, authors that argue that components with only two variables can be meaningful [40].

6. Conclusion and Outlook

This preliminary study has revealed that the flexibilization of food services as an enabler for more autonomy for residents is a major topic in Swiss senior citizen homes. Our preliminary study has shed initial light on a relevant and timely phenomenon: The provision of adequate food services in Swiss residential care homes and nursing homes. Although, guided by mega-trends [3], we embarked on this preliminary study with the aim to identify indications on how to apply technology in order to support more individualized and flexible food services [8], our findings were much more complex than expected and suggested that, whilst the introduction of technological means to support more flexible catering services is perceived as a viable option, there are many factors to be researched further before a practical application can be implemented. Catering cannot be seen isolated – it is part of the whole service provision portfolio of an institution, it is one part of health and wellbeing besides other factors.

In light of this greater context, hospitality and service management can (and should) play a major role in the development of food service design in senior citizen homes. However, in order to be able to cater for more individualized food services and to overcome related challenges, several aspects have to be considered, researched and developed in more detail:

- For a determination of the service design, the different needs, settings and means have to be known in detail. It is therefore necessary to create a categorisation of different institutions (size, financing / profit-orientation, legal entity, clientele etc.), staff (disciplines, functions, personalities etc.) and resident types (medical state, previous lifestyle, cultural background, food preferences etc.).
- It would furthermore be beneficial to give voice to elderly in future research as well so that the perspective of the end users of the service provision can be considered first hand.
- Ways have to be found to enable senior citizen homes to manage the change in implementing newly designed services without inflicting too much stress on the current residents, since they are accustomed to the previous processes.
- As hospitality services cannot be considered in isolation, an integrated perspective including all staff categories and management levels must be adopted. Although decision-making and strategic definition of further development lies within the responsibility of respective senior management, the hospitality profession as part of the facility management function should take a leading role in facilitating the dialogue and change. This also includes the question on how to develop a more resident-centred and innovative service-culture as well as the assessment of specific needs for training towards a higher digital and technological maturity.
- Based on the findings it can be recommended that the hospitality profession as part of the facility management function initiates and maintains the dialogue with technology providers and ICT staff members to ensure that the further development includes the needs of elderly on one side and hospitality staff on the other side.
- When creating new service designs, financial aspects need to be considered from the beginning in order to enable institution's management to decide on a sound basis with regards to cost/benefit ratios of different new service designs and corresponding investments in technology as well as human resources.

The results of the presented preliminary study have revealed a great opportunity for hospitality and thus for facility management to become a core player in the change towards increased levels of well-being of a whole sector.

Appendix: examples of questions raised in the interviews and questionnaire

Interviews:

What is your assessment of technology acceptance in Swiss retirement and nursing homes?

Which stakeholders should be taken into account when making catering in retirement & nursing homes more flexible?

How do catering needs of new and future residents differ from those of current residents?

Which specific overarching aspects need to be considered in the further development of flexible catering in retirement and nursing homes?

Questionnaire (likert-style response options)

If I should one day live in a retirement home, I would like to be advised competently on nutritional matters and tailored to my needs, but I would still like to be able to eat as I please.

Food service has an impact on the well-being of residents.

In the future, it will no longer be necessary to consider eating habits of people with a migration background, because all residents will bring different/individual eating habits anyway.

I can imagine that human-machine collaboration in long-term institutions can help alleviate the shortage of skilled workers.

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