

Project final report

Title: Taste Alterations in Older Adults and its association to Malnutrition

Project number: 96p11



Project description

The 6-month project was carried out to expand the existing international collaboration between the Faculty of Health Studies of the University of Pardubice (CR team) and the Institute of Nursing Science of the Medical University of Graz (AT team). Both institutions have a strong research focus on aging and its associated topics.

Aging is an essential factor that impairs taste perception. Taste alterations have the potential to significantly lower the quality of life and have a possible influence on nutritional status. To overcome the barriers of the already available methods for assessing taste disorders, a new dry method for taste assessment (TASENS) was developed at the University of Pardubice. Nevertheless, the feasibility of this new method has not yet been investigated in older adults. In addition, studies are already available that describe the contribution of taste alteration to malnutrition. However, there is still no consensus on the severity of impaired taste perception in relation to malnutrition in older people. Our main aims were to investigate the feasibility of the new TASENS method for assessing taste alterations in older adults and to assess a possible association with malnutrition. Subsequently, three project outcomes (controllable results) were defined at the beginning:

1. Organization of a workshop on taste assessment and nutritional assessment.
2. The registration of a scoping review protocol focused on taste alterations and their relationship to malnutrition.
3. Description of the results of the pilot study on the feasibility of the new dry taste assessment method and the association between taste alterations and malnutrition (data from 30 Czech and 30 Austrian patients will be analysed).

Main Project Outcomes

Outcome 1: The implementation of Outcome 1 (*controllable result 1*) was planned to unify and refine the methodology for data collection. The workshop was scheduled to coincide with the visit of the AT team to the University of Pardubice (**Visit 1**). The workshop ([Link to the invitation](#)) took place on October 26, 2023, at the ORL Clinic of Pardubice Hospital, one of the Faculty of Health Studies clinics at the University of Pardubice. The clinic is headed by Dr. Jan Vodička, the inventor of the new TASENS taste examination method. In our project, he was a lecturer at the workshop. Participants included not only AKTION project members and students involved in data collection but also a few clinic staff members and two international academic staff from Turkey, who coincidentally visited the Faculty of Health Studies during the same period. As a result, the workshop had an even greater impact than initially planned.

The entire process of the TASENS assessment method was described, followed by practical training. Austrian colleagues shared their expertise in nutritional assessment with members of the CR team and

academic/scientific staff and presented an overview of nutritional assessment methods. The focus of this presentation was on the MNA-SF, which is the tool that is used in the pilot study.

Based on the information obtained on the TASENS assessment and the nutritional assessment, the data collection procedure of the pilot study and the inclusion/exclusion criteria for study participants were discussed in detail.

Outcome 2: Activities directed towards Outcome 2 were planned to comprehensively map the current state of knowledge on the association of taste alterations and malnutrition in older adults in a scoping review. This scoping review of studies will be performed according to the methodological approach of the JBI. The protocol was registered in the Open Science Framework (OSF) database (*controllable result 2*). Please see the [link for the registered protocol](#). The work on the scoping review continues after the end of the AKTION project in 2024. We plan to publish our review in peer-reviewed journals in the future. The knowledge that will be gained from our scoping review will form the basis for future collaborative research projects.

Outcome 3: Outcome 3 (controllable result 3) was planned to conduct a pilot study to assess the feasibility of the new dry taste assessment method (TASENS) in older adults and obtain initial insights into the association between taste alterations and malnutrition. A quantitative cross-sectional pilot study was carried out to evaluate the feasibility of TASENS in older adults, particularly geriatric patients. In addition to the taste assessment, the nutritional status of all patients was screened using MNA-SF. Furthermore, hand grip strength and calf muscle circumference were assessed to allow a diagnosis of malnutrition according to the GLIM criteria.

We were anticipating examining 30 patients in the Czech Republic (CR) and 30 patients in Austria (AT). Within the project, a total of 45 patients were examined: 19 females (mean age 76.8 years) and 26 males (mean age 78.2 years). One reason why the aim of 60 patients was not reached during the 6-month project was the high rates of infections (influenza, COVID, etc.) in the wards, which forced us to exclude a lot of patients. However, data collection will continue partially even after the end of the AKTION project, and the results of the entire pilot study will be published in a peer-reviewed journal. At the moment, 22 (48.8%) participants were at risk of malnutrition or malnourished (Table 1). The TASENS method was rated as an 'easy procedure' by 37 (82.2%) participants, and all participants rated the instructions as 'clear' and the duration of the TASENS method as 'acceptable'. However, only 25 (55.5%) subjectively rated the TASENS method as 'practical'.

Table 1: Description of the research sample.

	Normal nutritional status	Risk of malnutrition	Malnutrition
Females	8 (17.7%)	9 (20%)	2 (4.4%)
Males	15 (33.3%)	10 (22.2%)	1 (2.2%)
Total	23 (51.1%)	19 (42.2%)	3 (6.6%)

The pilot data gave valuable insight into the feasibility of the TASENS method among older adults. Furthermore, we got some hints about a possible association between taste disorders and malnutrition. This will enable us to plan larger projects in the near future.

Changes during project implementation

During the project implementation, one change occurred. The stay of the AT team members in Pardubice was originally planned from Wednesday, October 25, 2024, to Saturday, October 28, 2024. Only departure was scheduled on Saturday, October 28 without any further program. Therefore, the AT team members decided to leave on Friday, October 27, in the afternoon. This change results in a more economical utilization of the allocated financial resources. Subsequently, unused financial resources and a proportional portion of overhead expenses were returned.

Future collaboration

The AKTION project has proven to be beneficial for both the Faculty of Health Studies at the University of Pardubice and the Institute of Nursing Science at the Medical University of Graz. Through mutual collaboration and joint meetings, it was possible to successfully initiate a new research direction in which both parties will continue to cooperate. In close chronological order to the project (approximately one year), we plan to build upon both Outcome 2 and Outcome 3.

Regarding Outcome 2, the Scoping Review will be fully executed based on our registered protocol. In January 2024, a literature search will be conducted, followed by a three-step method for selecting articles. We anticipate gaining valuable data related to our research topic and plan to publish the results in a scientific, peer-reviewed journal in the future.

The results of the pilot study (Outcome 3) will also be published. We hypothesise that the use of the dry TASENS method for taste examination in geriatric patients is feasible and may lead to more precise results compared to a wet method commonly used. The results obtained from the pilot study will be compared with previously published work that used the wet taste examination method.

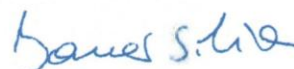
In the long-term perspective, we intend to develop our collaboration further in the same direction. In 2025, we plan to submit a more extensive project proposal at the European level, which will enable us to secure funding for the continued advancement of our research in the field of taste disorders and malnutrition. We believe that our results will contribute to managing taste disorders and malnutrition among geriatric patients in healthcare or social institutions in the future.

In Pardubice, 29 January 2024



Mgr. Vít Blanař, Ph.D.
Principal investigator

In Graz, 29 January 2024



Dr. Silvia Bauer
Project partner