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ORIGINAL ARTICLE

Success factors and barriers in interprofessional collaboration between dental hygienists and dietitians in community-dwelling older people: Focus group interviews

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Abstract

Introduction: Poor nutritional status can impair oral health while poor oral health can influence the individual's dietary intake, which may result in malnutrition. This interaction between nutritional status and oral health in older age requires attention, coordination and collaboration between healthcare professionals. This qualitative study explores dental hygienists' and dietitians' opinions about current collaboration with the aim of identifying success factors and barriers to this interprofessional collaboration.

Methods: Three focus group interviews were held with Dutch dental hygienists and dietitians about nutritional and oral healthcare in community-dwelling older people.

Results: In total, 9 dietitians and 11 dental hygienists participated in three online focus group interviews. Dental hygienists and dietitians seldom collaborated or consulted with each other. They struggled with the professional boundaries of their field of expertise and experienced limited knowledge about the scope of practice of the other profession, resulting in conflicting information to patients about nutrition and oral health. Interprofessional education was scarce during their professional training. Organizational and network obstacles to collaborate were recognized, such as limitations in time, reimbursement and their professional network that often does not include a dietitian or dental hygienist.

Conclusion: Dental hygienists and dietitians do not collaborate or consult each other about (mal)nutrition or oral health in community-dwelling older people. To establish interprofessional collaboration, they need to gain knowledge and skills about nutrition and oral health to effectively recognize problems in nutritional status and oral health. Interprofessional education for healthcare professionals is needed to stimulate interprofessional collaboration to improve care for older people.

KEYWORDS
community-dwelling older people, dental hygienist, dietitian, interprofessional collaboration, malnutrition, oral health

1 | INTRODUCTION

Nutritional status and oral health have a complex multifactorial relation, which is influenced by several physical conditions and linked through several pathways.[1] Poor nutritional status can impair oral health, while poor oral health can influence the individual's dietary intake, which may result in malnutrition.[2] Malnutrition affects approximately 11–35% of Dutch community-dwelling older people, depending on the level of care and age.[3] Age-related factors, such as cognitive decline, impaired taste and smell, polypharmacy, metabolic effects of systemic diseases, socio-economic and psychological factors, can all contribute to the onset of malnutrition.[4] Also, having natural teeth, fewer teeth, wearing dentures, chewing problems and lower bite force are associated with poorer dietary intake among older people.[5,6] Severe tooth loss can lead to swallowing and masticatory problems, contributing to restricted dietary choices and poor nutritional status of older people.[7] Malnourished community-dwelling older people report significantly more complaints with chewing, eating hard foods and speech problems compared to well-nourished older people.[8]

This interaction between nutritional status and oral health in older age requires interprofessional attention, coordination and collaboration between healthcare professionals. Dental hygienists and dietitians are involved in oral healthcare and nutritional care, respectively. However, screening for the risk of malnutrition by dental hygienists or oral health problems by dietitians is not routine in their daily practice.[9] It is unknown which perceptions and factors play a role in interprofessional collaboration regarding the nutritional status or malnutrition and oral health in community-dwelling older adults. Therefore, the aim of this qualitative study was to explore dental hygienists' and dietitians' opinions about current (interprofessional) collaboration in the care of community-dwelling older people and to identify success factors and barriers for this interprofessional collaboration.

2 | METHODS

This study was conducted by researchers of a Dutch consortium consisting of dietitians, dental hygienists, researchers and members of involved professional associations. This consortium is part of an overarching research project focusing on oral health and nutritional status among community-dwelling older people. The study was performed in the Netherlands from October to November 2020. Focus group interviews were used to assess possible barriers, success factors and opinions regarding the current (interprofessional) collaboration between dietitians and dental hygienists in nutritional and oral healthcare for Dutch community-dwelling older adults. A focus group interview is a technique involving the use of in-depth group interviews in which a carefully planned discussion is designed to obtain perceptions on a defined area of interest in a permissive, non-threatening environment, whereby group members influence each other by responding to ideas and comments in the discussion.[10]

2.1 | Participants

All participants were recruited by convenience sampling through newsletters and posts on social media from the Dutch Association of Dental Hygiene (Nederlandse Vereniging van Mondhygiënisten, NVM mondhygiënisten) and the Dutch Association of Dietitians (NVD, Nederlandse Vereniging van Diëtisten) and through networks of the researchers. Interested dietitians and dental hygienists could sign up via a link to Google Forms. To participate, dietitians and dental hygienists had to work in Dutch primary care.

Due to the outbreak of the COVID-19 pandemic, the interviews were executed online with Microsoft Teams (MS Teams). Participants received a fee of €100 for participation. Information about participants' profession, gender, age and years of work experience was collected during their application. In total, 12 dietitians and 12 dental hygienists signed up to participate. Participants were allocated to one of the three different focus group interviews to obtain a proportional distribution based on their profession. Prior to the focus group interviews all participants received information about this study by email and gave permission to use the information and data from the focus group interview by clicking on a digital link to register their permission. Eventually, three dietitians withdrew due to lack of time and were therefore not assigned to one of the interviews. All focus group interviews were held in November 2020. In the third interview session, one dental hygienist was absent because of problems logging in.

2.2 | Data collection

All focus group interviews were administered by one moderator and two assistant moderators to check whether the full interview guide was completed, to ensure the input of every participant and to avoid exceeding the planned duration of the interview. In each interview, the moderator (first author (VH) and second author (EN)) had experience with conducting focus group interviews. In total, there were two moderators and four assistant moderators. The assistant moderators were graduating dental hygiene or dietitian students. At the start of each focus group interview, the moderator explained the aim of the study, the working procedures during the interviews and the duration of the interview (90 min). All participants gave verbal permission to visually record these interviews and permission to use the data for scientific use. These recordings were safely transferred to and stored in Surf Research drive. In addition, one of the present assistant moderators took notes of the discussion during the interviews.

A semi-structured interview guide was used to ensure all key topic areas were covered. To our knowledge, previous literature and theory about this specific topic were lacking. Therefore, common knowledge and experiences from the Dutch consortium of the research project focusing on oral health and nutritional status among community-dwelling older people were used and discussed to formulate key topics and associated subtopics for this interview guide. The interview guide consisted of three key topics including

11 subtopics, namely: (1) interprofessional collaboration (subtopics current collaboration, success factors, barriers), (2) interprofessional knowledge (subtopics knowledge, education, success factors and barriers), (3) Organization of care (subtopics professional network, communication, success factors and barriers).

2.3 | Data analysis

The qualitative data were coded and categorized following four steps. First, all three focus group interviews were transcribed verbatim by the assistant moderators. Second, the answers to the questions were read and coded into preliminary codes by VH, who assigned these codes to quotations that had the same underlying meaning, using Atlas.ti version 9 (Atlas.ti Scientific Software Development GmbH). The preliminary codes were structured according to the key topics of the interview guide. Third, preliminary codes and quotations were compared to other statements from other participants to discover similarities and differences. All preliminary codes with corresponding quotes were merged into underlying new themes by constant comparison. Fourth, to create the final encoding, the results were re-examined by a second moderator (EN) and discussed to achieve consensus in the analyses and ensure validity and establish a codebook.

The results of the focus group interviews are presented in the text with quotations of participants by key topics and subtopics. Personal identifiers were removed from the quotations and participants were assigned an identifying code per focus group to preserve anonymity. Dutch quotations were translated into English by the first author, and the accuracy of the translation of each quotation was discussed with the second author. The quotations were labelled by profession (DI = dietitian, DH = dental hygienist), number of participants, number of focus group interviews and number of quotations. Descriptive variables from the participants such as profession and their mean age and years of work experience are presented.

2.4 | Ethical approval

All participants were informed about the aim and content of the study and gave verbal permission to visually record the interviews and permission to use the data for scientific use. The HAN Ethical Advisory Board judged the study protocol and concluded that the study did not fall within the remit of the Dutch Medical Scientific Research Act (ECO 174.02/20).

3 | RESULTS

In total, 9 dietitians and 11 dental hygienists participated during the three focus group interviews and all participants were female (Table 1). After three focus group interviews, saturation was considered to be achieved.

3.1 | Keytopic interprofessional collaboration

Based on the subtopics of current collaboration, success factors and barriers, data were grouped into three new underlying themes: 'Current collaboration', 'Monitoring problems in nutritional status or oral health' and 'Care coordination and conflicting advice'.

3.1.1 | Current collaboration

In general, there is no (interprofessional) collaboration between dietitians and dental hygienists. However, participants mentioned that they have some collaboration with other healthcare professionals.

> I do have a very close collaboration with speech therapists and speech therapists have collaborations with dietitians. But I do not have direct contact or collaboration with dietitians.
>
> DH5:2;11

> I work with many health care professionals. For example, if a patient needs to go to a physiotherapist or occupational therapist, I will refer them immediately. However, a dental hygienist is yet unknown to me. Otherwise, I would certainly do that.
>
> DI7:2;24

3.1.2 | Monitoring problems in nutritional status or oral health

Dental hygienists mentioned that they notice or monitor problems in nutritional status and dietitians notice problems in oral function or oral health. These signals often do not lead to follow up or referral to the other healthcare professional and interprofessional collaboration.

> I've actually never thought of it until now, that I could consult a dental hygienist. But I have had many situations in which patients indicated that they no longer eat meat, because they cannot chew properly or because something hurts. Or certain things were no longer eaten because the denture is loose due to weight loss. So these are situations which I think of now, oh well it might had been useful to consult a dental hygienist.
>
> DI3:1;59

> I am concerned with nutrition, but only related to dental caries or a dry mouth. Then I give advices to adjust the dietary pattern. But I haven't thought about malnutrition in patients and that I as a dental hygienist could play a role in this.
>
> DH7:2;19

TABLE 1 Participants, mean age and working experience.

	Focus group 1 DI/DH	Focus group 2 DI/DH	Focus group 3 DI/DH	Total DI/DH
Number of participants	4/3	3/4	2/4	9/11
Mean age in years	39 ± 11.9/33 ± 7.5	29 ± 6.8/24 ± 1.6	28 ± 2.2/32 ± 4.2	32 ± 10.6/30 ± 5.8
Range (min–max)	29–57/24–37	24–37/23–26	26–29/29–38	24–57/23–38
Mean working experience in years	15 ± 13.2/10 ± 7.4	6 ± 5.3/9 ± 13.9	5 ± 7.6/10 ± 4.5	10 ± 9.8/10 ± 8.6
Range (min–max)	8–35/2–16	2–12/2–30	3–7/6–16	2–35/2–30

Abbreviations: DH, dental hygienist; DI, dietitian.

3.1.3 | Care coordination and conflicting advice

According to the focus group participants, they struggle with how to coordinate their care interventions and advice. There are possible conflicting nutritional and oral health(care) advice.

> ...Especially that our advices do not conflict with each other. For example, I heard DI3 say that eating small amounts several times a day can cause problems and eating certain products [...] Our aim is to improve someone's nutritional status, but I don't really think about the fact that it might be less good for the teeth.
>
> DI2:1;19

> I think what is important in collaboration, that you look for, where can I cross my boundaries? What can I do with malnutrition as a dental hygienist? When do I need to consult a dietitian? Conversely, I think it is necessary for a dietitian to know what their limits are about what they can do for oral health. [...] For example, like a medical nutrition supplement. I think as a dental hygienist, "oh help, no that sticks in the mouth", and that it's full of sugars and carbohydrates. That is not preferable for the oral health of vulnerable people. But I understand that a dietitian has other interests in that supplement. It is important that we determine together what the priorities are for that individual client.
>
> DH2:1;11

3.2 | Keytopic Interprofessional knowledge

Based on the subtopics knowledge, education, success factors and barriers, data were grouped into two underlying themes: 'Interprofessional knowledge' and 'Interprofessional education'.

3.2.1 | Interprofessional knowledge

The participants mentioned that they experience a lack of knowledge about the expertise and working field of other healthcare professionals in order to collaborate. Also, they find it rather difficult to determine when a patient should be referred to the other healthcare professional.

> I always thought that a dietitian was only for overweight persons. Until I got more into it, and I thought, what an added value a dietitian can have for improving someone's well-being.
>
> DH10:3;26

> During a dietary assessment, it often comes up that a patient is not able to eat a cracker or a handful of nuts due to the condition of their teeth. But I don't make any connections with that information and I don't take any actions. I'm not used to do that at all, so that doesn't happen.
>
> DI5:2;25

There is also doubt whether the participants make a good indication to refer the patient, because of their lack of knowledge about the other healthcare profession. And some participants struggle with their professional boundaries.

> I have too little knowledge to really refer to a dietitian [...] I feel like I am already asking patients "can you chew well, can you eat well, can you chew all your food well?" And then patients generally say 'yes'. Patients often stopped eating some things a long time ago, chose things that they could chew well and so they already left out a lot of foods as a result. And that's where my knowledge end, because then I don't know whether those foods have been replaced with something that is at least as good.
>
> DH1:1;34

> I think what is important in collaboration is that you know the limits of your own expertise and that I know what to do with malnutrition as a dental hygienist and when to call upon a dietitian's expertise and vice versa. I think it is necessary that a dietitian knows, where the limit is that I can do something about oral health.
>
> DI2:1;11

3.2.2 | Interprofessional education

The participating dietitians mentioned that interprofessional education was scarce during their professional training, especially with dental hygiene students. The participating dental hygienists had little experience with interprofessional education with other allied healthcare profession students at their university. It was suggested that education aimed at understanding each other's profession and identifying shared foci of attention might stimulate future collaborations.

> During my study, much attention was paid to collaborating with other healthcare professionals, but not so much with a dental hygienist.
>
> DI7:2;6

> I think if you want to change collaboration, it already should start during your education. When you already work together during your education, then you are used to working together, and you will do the same in the professional working field.
>
> DH5:2;72

3.3 | Keytopic organization of care

Based on the subtopics of professional network, communication, success factors and barriers, data were grouped into four underlying themes: 'Time', 'Reimbursement', 'Network' and 'Digital communication tools'.

3.3.1 | Time

Most participants talked about time as a barrier to seeking contact or building a network with other healthcare professionals. Full-working schedules hindered contacting other healthcare professionals. For this, breaks or free time should be used or time had to be scheduled to have interprofessional contact.

> I have my own practice, where it's busy. I block some time in my working schedule for administration. Otherwise, my schedule is full with appointments and I do not get to it. I work five days a week, so I really have to schedule that.
>
> DI7:2;11

> I would not have time for that either. I work in a general dental office, [...] I think the dentist would like me to treat a patient during my working time. Rather treat a patient than talking to a dietitian, for example.
>
> DH9:3;91

3.3.2 | Reimbursement

Lack of reimbursement was also mentioned as a barrier to get in contact with other healthcare professionals.

> We need a lot of time anyway for reports and phone calls and it is a pity that it is no longer allowed to declare this (e.g. health insurance), we all have to do that in our free time.
>
> DI7:2;104

> ... [...] when I perform a treatment in my practice, I receive a reimbursement for it. But I will not be reimbursed for all kinds of consultations.
>
> DH2:1;31

There was insufficient knowledge about whether and how treatments by the dietitian or dental hygienist are reimbursed by (complementary) health insurance and this information is helpful to give to patients.

> ...[...] I think it is covered by complementary health insurance but I'm not sure. Because I go to the dental hygienist once a year myself, and I always have to pay a part. So I think it's paid by the complementary health insurance.
>
> DI9:3;82

> I think that I have too little knowledge about this [...] I also miss that in my education [...] I don't know if I refer someone through the GP or can someone go there directly? While those are pretty important things and simple things and I don't even know them.
>
> DH11:3;24

3.3.3 | Network

A network of healthcare professionals is needed to refer a patient. However, the participants indicated that they do not always have a dental hygienist or dietitian in their professional network.

> ... and then the next step is of course to know which dental hygienist works in the area here? I think if you have that information, you can refer to each other more easily.
>
> DI4:1;116

> I think collaboration is important, but I do not have any collaboration with a dietitian in the area. But I do have a collaboration with a speech therapist.
>
> DH4:2;12

Participants mentioned that a general practitioner or district nurse can play a connecting role in monitoring and referring community-dwelling older adults and they should meet each other in a multidisciplinary consultation.

> We have a multidisciplinary consultation every 6 to 8 weeks with a GP and a district nurse [...] there is a geriatric physiotherapist involved, [...] speech therapist and an occupational therapist. But we do not have a dental hygienist yet. So I think it would be a good idea to include them as well. However, you can start looking for collaboration yourself, but that is not so easy with a dental hygienist as it is with a district nurse or with a general practitioner or practice nurse. Because it is not part of my system.
>
> DI1:1;27

> The GP is a linking pin, but I also strongly believe that home care plays a very important role [...] They always do an intake with these elderly people. Then it should be a little effort if a small list is included by which they can identify problems (in oral health and nutrition) [...] and which disciplines must be indicated to provide optimal care.
>
> DH10:3;75

3.3.4 | Digital communication tools

The participants mentioned digital tools to establish contact and communicate with other healthcare professionals. For example, using an app (Siilo) from a Dutch digital platform for healthcare professionals or a secure email platform for healthcare professionals (Zorgmail). These digital communication tools were mainly used by dietitians.

> ...[...] when I look at my agenda and my office hours, [...], I do not have a lot of time to make new contacts or have contact with other health care professionals [...]. So it is more accessible for me to use something like Siilo-app. I use this app between two patients treatments [...] It is accessible, because I won't be put on hold or I don't have to wait if someone is available again and I can also quickly find someone.
>
> DI3:1;95

4 | DISCUSSION

The aim of this qualitative study was to explore dental hygienists' and dietitians' opinions about current (interprofessional) collaboration in the care of community-dwelling older people and to identify success factors and barriers for this interprofessional collaboration. Overall the findings of the focus group interviews pointed out that Dutch dietitians and dental hygienists seldom collaborate or consult each other. On the other hand, they do collaborate with other healthcare professionals, like a speech therapist, dentist or GPs. There are several reasons why there is hardly any collaboration. First, interprofessional collaboration does not happen due to a lack of knowledge about each other's expertise and working field. The participants struggle with the boundaries of their scope of practice and the other expertise. In addition, dietitians and dental hygienists experience that they may give contradictory advice to patients. A scoping review of Harnagea et al. (2017) found similar results and reported a lack of oral health knowledge among various healthcare providers.[11] A previous study also reported a lack of skills and knowledge in providing dietary advice by dental hygienists.[12] Rawlinson et al. (2021) found ambiguity in clear professional roles, fear of loss of territory and professional identity in newly defined roles in interprofessional collaboration in primary health care and feeling unconfident in dealing with topics beyond their profession.[13]

Second, there are organizational and network obstacles hindering collaboration, such as limitations in (consultation) time and reimbursement, a full work schedule and a professional network that often does not include a dietician or dental hygienist. However, dietitians and dental hygienists who run their own practice experience time as less of an obstacle compared to their colleagues employed by an organization or practice. Employed dental hygienists experience less control in patient planning and other work activities. Barriers referring to lack of time and training[13,14] and feeling overwhelmed by the workload[11] were reported in previous studies about interprofessional collaboration in primary care.

Several studies pointed out that malnutrition is probably best managed by a multidisciplinary team for whom roles and responsibilities are specified.[9,13] Healthcare professionals need to have broader attention to the general health and oral health of community-dwelling older people.[14] In order to monitor the possible deterioration of general, nutritional and oral health of community-dwelling older people, it is important that interdisciplinary teams of general practitioners, dentists, dental hygienists, nurses and dietitians work together to ensure that patients maintain good oral health status and adequate nutritional status.[2]

To establish this interprofessional collaboration, all healthcare professionals need to have some knowledge and skills about oral health and nutrition, to effectively recognize problems in nutritional status, dietary intake or oral health-related problems. Future healthcare professionals need to gain experience with interprofessional collaboration during their education in order to stimulate, establish and get confident.[11] A lack of interprofessional education and education focusing on discipline-oriented training in health was identified as an obstacle to integrated care, not only in our study but also by others.[11,15] To create cohesion in an interprofessional team, valorisation of other professionals' work and understanding of their roles are needed. Also, trust and

respect between professionals, shared interests and goals, a common vision, formal quality processes and information systems are needed.[16,17]

In this study, participants found it hard to determine when to advice a patient to seek help to improve oral health or nutritional status. An interprofessional geriatric assessment may be helpful for primary care professionals to identify problems in nutritional status and oral health. A previous study with a geriatric assessment performed by interprofessional students showed promising results. The students reported a better understanding of their roles and responsibilities in other disciplines, gained new knowledge and skills pertaining to comprehensively assessing geriatric patients, and they valued the teamwork that was necessary across disciplines to optimize patient care and outcomes.[18] Future quantitative studies should focus on interprofessional collaboration between other healthcare professionals in community-dwelling older people. In that way, more exact information will be identified about success factors and barriers for effective interprofessional collaboration.

To our knowledge, this is the first study that addresses interprofessional collaboration between dietitians and dental hygienists in care for older people. However, some limitations have to be acknowledged. The total number of participants in the focus group interviews was low, but in terms of age and gender, the participating dental hygienists were representative for their profession.[19] It is debatable whether the view of dietitians and dental hygienists has been sufficiently clarified. Possibly, these participants took part because they were more interested in this topic than fellow professionals.

Furthermore, due to the outbreak of the Covid-19 pandemic, the focus group interviews were held online through MS Teams. A disadvantage of an online focus group interview is the absence of a fluid discussion, because during an online group interview participants often only respond to questions of the moderators. Therefore, moderators need to be more active by summarizing previous responses and inviting other participants to respond.[20] On the other hand, by using MS Teams, there were no restrictions on geographical location and for the participants it took less time. Further research is needed to fully articulate the benefits of this method in terms of efficiency, participant experiences and data quality associated with this method.

5 | CONCLUSION

The findings of this qualitative study revealed that dietitians and dental hygienists do not collaborate or consult each other about (mal)nutrition or oral health in community-dwelling older people, due to a lack of knowledge about each other's expertise and working field, and ignorance of how and when to refer a patient. Also, they experience professional boundaries in their interprofessional expertise and advice to patients. Organizational and network obstacles to collaboration were recognized, such as limitations in (consultation) time, reimbursement and their professional network often does not include a dietitian or dental hygienist.

6 | CLINICAL RELEVANCE

6.1 | Scientific rationale for study

Interaction between nutritional status and oral health in older age requires interprofessional attention, coordination and collaboration between healthcare professionals.

6.2 | Principal findings

This study found that dietitians and dental hygienists do not collaborate or consult each other about (mal)nutrition or oral health in community-dwelling older people.

6.3 | Practical implications

Interprofessional education is needed to gain more knowledge and skills about nutritional status and oral health to effectively recognize problems in older people.

AUTHOR CONTRIBUTIONS

All authors approved the submitted version, agree to be personally accountable for their contribution to this review and ensure that questions related to the accuracy or integrity of any part of this work will be appropriately investigated, resolved and documented. All authors were members of the overarching Dutch consortium of this research project focusing on oral health and nutritional status among community-dwelling older people. V.H. and E.N. conceptualized the research question, transcripted and coded all interviews, analysed the data and wrote the original draft. V.H., E.N., E.H., K.J., W.K. and M.S. were involved in developing the interview guide for this study and commented on draft versions. M.S. supervised the project and was available for advice.

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CONFLICT OF INTEREST STATEMENT

None of the authors declare a conflict of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

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