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Research Article

Communication about Disease-Related Malnutrition in the Perspective of Health Professionals in General Practice and Patients

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Abstract

Aim: To investigate what elements are perceived necessary for early management of disease-related malnutrition in general practice and based on this knowledge, to provide recommendations for an effective communication strategy. **Background:** Disease-related malnutrition is associated with negative consequences for the individual and the community. Communication about early-stage malnutrition in general practice may prevent unnecessary deterioration, however nutritional guidance for cancer patients at an early stage and strategies to perform the optimal communication with the individual patient in general practice are lacking. **Design:** Mixed qualitative interview study. **Methods:** Seven patients suffering from cancer and early weight loss were interviewed and a second analysis was made of interviews with general practitioners and general practice nurses. An interpretive thematic analysis based on Health Belief Model, Self Determination Theory and Communication Theory was used. **Results:** Based on the analysis, patients were not guided towards maintaining weight in general practice. Health professionals in general practice were willing to give nutritional guidance, but need nutritional education, tools and communication strategies. Based on the analysis, recommendations for managing patients with an unintended weight loss were provided in relation to a communication strategy with following themes: 'Strategy and preparation of health professionals', 'Means of communication' and 'Forms of message'. **Conclusion:** This research provides insights into the demands for an improved early management of disease-related malnutrition in general practice, and furthermore recommendations for a communication strategy for providing and disseminating nutritional guidance and early patient guidance in general practice.

Summary Statement

What is already known about this topic?

- Knowledge about disease-related malnutrition in general practice is sparse.
- Health communication is important, as it facilitates behavior changes in health promotion and disease preventive interventions.
- Barriers for managing disease-related malnutrition by general practice nurses and general practitioner are lack of time, skills and information about disease-related malnutrition.

What this paper adds?

- Nutritional education in general practice may increase competencies and the motivation to give nutritional guidance to patients with disease-related malnutrition.
- Attention to patients' nutritional symptoms and a patient-involving practice seems important to enhance the patients' ability to act on health information regarding nutrition.
- General practitioners and general practice nurses need to be aware of means of communication adapted to the individual, focusing on appeal, syntax, lexis and layout when giving the patients nutritional guidance.
- The use of a communication strategy is an effective tool for describing objectives, messages, relevant media and timing within a specific intervention.
- The suggested communication strategy may be relevant for similar nutrition interventions regarding patients with unintended weight loss in other settings e.g., hospitals and rehabilitation.

Keywords: Communication; General Practice; General Practitioner; Nurses; Interview; Malnutrition; Patients; Qualitative research; Weight Loss

Introduction

Disease-related malnutrition (DRM) is a societal public health problem due to the health-related and economic consequences [1]. Malnutrition is defined as a state resulting from lack of intake or uptake of nutrition which leads to weight loss. DRM is a specific type of malnutrition caused by a concomitant disease with or without inflammation [2].

The consequences of DRM are significant for both the individual and society [2-4]. The health-related consequences for the individual include altered complications, longer rehabilitation, reduced quality of life and increased risk of mortality [2-6]. DRM is associated with increased costs for both the primary and secondary health sector due to prolonged hospitalizations, increased number of readmissions and more consultations in general practice [4,7,8]. Early intervention against DRM may help improve the individual's health-related outcomes and reduce health economic costs [9-11].

In general practice in Denmark the identification of unintended weight loss (UWL) is recommended as an indicator of DRM [12]. Knowledge about DRM in general practice is however sparse. Few international studies have shown that 3-12% of patients visiting general practice are malnourished [13-15], while 15-32% of adult patients in general practice are at nutritional risk [13,14]. In 2020, a Danish study showed that 14.2% of patients in general practice had an UWL [16]. Furthermore, the study identified good communication between hospital and general practice, financial incentive and interventions adapted to the individual practice as facilitators, while they identified lack of time, skills and education about DRM among the health professionals as barriers for managing DRM [16]. Intervention studies regarding DRM in general practice are sparse and superficial [17]. Studies from other settings found that psychosocial, physical and practical challenges among patients may affect their participation in the prevention of DRM [18-22].

Health communication is important, as it facilitates behavior changes in health promoting and disease preventive interventions [23-25]. It is central to use a communication strategy to ensure effective health communication. An individual approach to nutritional guidance is recommended, however with no focus on the general practice setting [26].

The aim of the study was to investigate what elements are perceived necessary for early management of UWL as an initial indicator of DRM in general practice by patients and health professionals. Based on this knowledge, the second aim was to provide recommendations for an effective communication strategy for patients with UWL as indicator of DRM in general practice.

Methods

Design

This study used a mixed qualitative interview approach to gain access to general practitioners' (GPs), general practice nurses' (GPNs) and patients' views of and experiences with detection and treatment of UWL in general practices in Denmark. With regard to the health professionals, this study is based on a secondary analysis of data from an earlier mixed method interview study [16]. For the patient perspective, individual interviews were performed.

Participants and Recruitment

Health Professionals

The GPs and GPNs were recruited from five general practices with different internal organizations. They were invited to the study along with a previous prevalence study made in the five general practices [16]. As a minimum one GP and two GPNs participated from each general practice. Nine GPs and 21 GPNs participated. GPs (female=66.6%) had on average 15±14 years of experience from general practice, while GPNs (female=100%) had on average 4±11 years of experience from general practice. For further description of the GPs and GPNs are illustrated in the earlier mixed method interview study [16].

Patients

Patients with cancer were selected by qualitative sampling, to find patients who were experienced with UWL (more than five % of bodyweight) already at the time when they first visited their GP with suspicion of disease [27]. Patients were recruited by dieticians and ward nurses at different wards at a Danish University Hospital. Eligible patients had to be willing to share information about their experiences regarding UWL during disease with special focus on early identification and intervention in general practice. Seven patients participated in the interviews. Patients (female=57%) reported an average weight loss of 13±9 kilos and all were diagnosed with cancer. Characteristics of the patients are presented in Table 1. Data saturation was achieved as no new topics occurred in the interviews.

ID	Gender	Age	Diagnose	Total weight loss (kg)	Civil status
P1	W	80	Cardiacancer	17	Married
P2	W	80	Ventricular cancer	6	Alone
P3	M	72	Colorectal cancer	14	Married
P4	W	65	Esophageal cancer	4	Married
P5	M	64	Esophageal cancer	12	Married
P6	M	68	Pancreatic cancer	20	Married
P7	W	53	Pancreatic cancer	17	Married
W=Women and M=Men					

Table 1: Characteristics of the Participating Patients.

Interview Guides

Health Professionals

Following demographic information, the semi-structured interview guide consisted of eight overall questions aimed at clarifying the roles and responsibilities regarding early detection and treatment of DRM, communication with patients about nutrition, opportunities and tools available for guidance, collaboration with other sectors and finally barriers and facilitators for implementation of nutritional intervention [28].

Patients

The semi-structured interview guide consisted of five questions regarding demographics, the patients' experiences with UWL at an early disease stage and experiences of the recognition and management of their UWL by general practice and opportunities towards management and prevention of additional weight loss.

Data Collection

The interviews with GP's were conducted as individual interviews, and the GPN's interviews were conducted as focus-group interviews. In the secondary analysis, all transcribed interviews were reread and reanalysed using a systematic process [29]. This with the purpose to focus more deeply on statements about communication with patients about nutrition, which was moreover ignored in the first analysis.

The interviews with patients were conducted as individual interviews at home, at the hospital or by telephone as chosen by the patient.

All interviews were recorded with an Olympus Dictaphone WS-852 and transcribed word for word after each interview.

Data Analysis

An interpretive thematic analysis was performed to organize and make a detailed description of the empirical data. The thematic analysis was chosen as it is a systematic procedure for providing a rich and detailed description of a complex amount of data [30]. The thematic analysis involves an inductive approach and emphasizes participants' views of and experience with UWL as an indicator of DRM. The thematic analysis was performed in five phases: 1) familiarizing yourself with your data, 2) generating initial codes, 3) searching for themes, 4) reviewing themes, and 5) defining and naming themes [30]. Transcripts were analyzed independently by the first and second author to identify separate themes. Interpretations were discussed and themes found. The analysis software program Nvivo 12.2.0 was used to organize and analyze data.

Theory

The Health Belief Model (HBM), Self Determination Theory (SDT) and communication theory was used to explain the findings of the thematic analysis and qualify the results. The HBM was chosen as it explains individuals' participation in health promoting and disease preventing behaviors [7, 31]. SDT is a motivation theory that can be used to understand individuals' actions and motivation to change and maintain behavior [32].

The setting of health science is dominated by the biopsychosocial approach [33, 34]. This approach focuses on a broader concept of health, where central concepts such as patient involvement [35], patient-centered communication [36],

empowerment [37, 38], and health literacy are presented [31, 39]. These concepts frame the health communicative theory applied in this study. For effective health communication, it is important to consider approach strategies [40], forms of appeal [41], and communicative tools, including syntax, lexis and layout [42].

The study results were presented in a communication strategy, which can describe specific objectives, messages, media and timing within a specific communication intervention [43, 44]. The communication strategy was chosen as a framework for a systematic approach to present recommendations for future interventions regarding management and prevention of UWL as indictor of DRM in general practice.

Ethical Considerations

The study was conducted according to the Helsinki Declaration of 2002. The data protection agency gave consent to this study, registration number 2020-061. Before each interview, the participants signed a declaration of consent, and the participants were anonymized using a personal identification number (GP1-9, GPN1-21, P1-7). All participants were informed about voluntary participation.

Results

Health Professionals

Findings from the thematic analysis are presented within three elements of a communication strategy based on the health professionals' interviews: 1) Strategy and preparation of health professionals, 2) Means of communication and 3) Forms of message (see Figure 1).

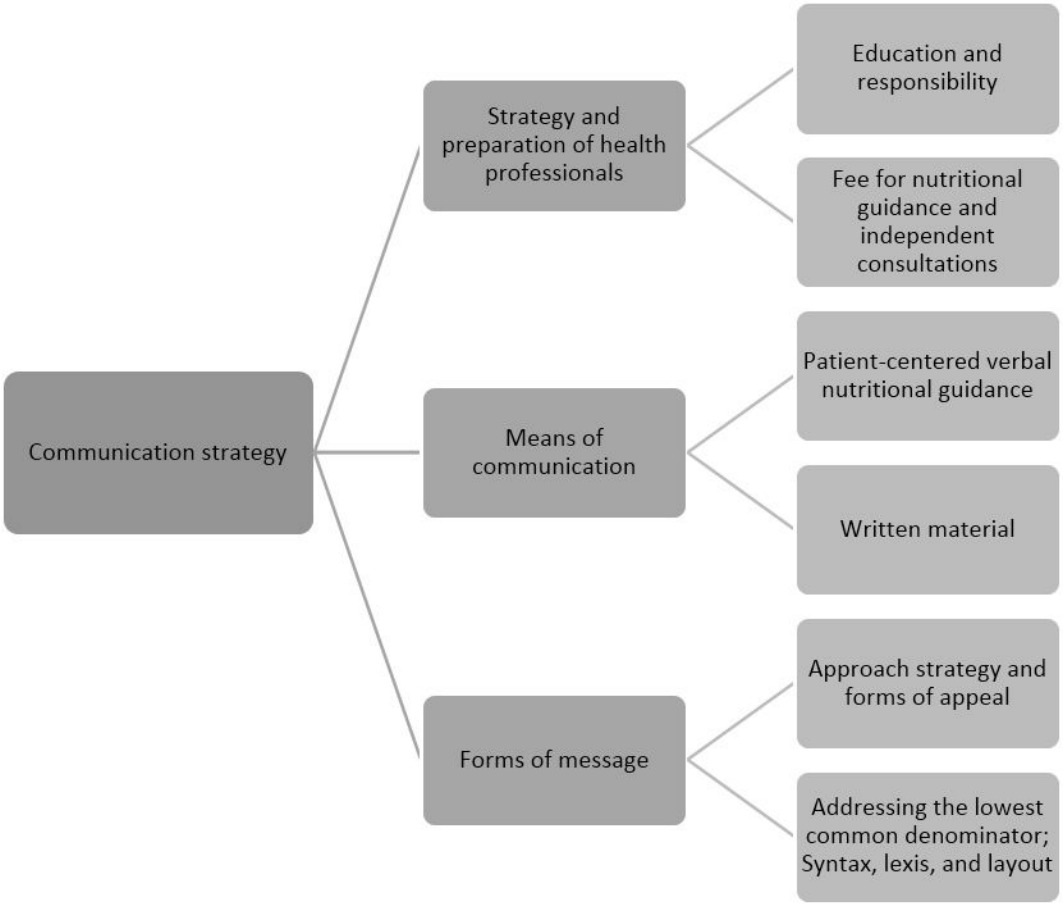

Figure 1: Elements in the communication strategy and the subcategories.

Strategy and Preparation of Health Professionals

Education and Responsibility

Overall, GPs found that GPNs have better skills to guide patients with UWL compared to GPs.

"They (GPNs) are good at something like this (guidance), they have attended seminars, and I also believe that you need to acknowledge your own limitations and concentrate on what you are best at" (GP3).

This statement substantiates that the nutritional guidance of patients with DRM can be managed and conducted by GPNs, which is supported by other GPs.

However, several of the GPNs mentioned a challenge regarding guiding patients with UWL:

"It all depends on what (diagnosis) it is, whether I feel competent for it. (...) Some nurses in this team have a kind of nutritional training and they know much better how to guide, within more different diagnoses" (GPN8).

GPN8 suggested that the competences required for managing UWL vary and depend on the patient's condition. Furthermore, it states that nutritional training will increase competence and motivation towards guiding patients. According to SDT, the group of health professionals who experience a lack of competencies are expected to be less motivated to provide nutrition intervention. Integration of nutritional education and training in a future intervention is thus assumed to increase the competencies and motivation of health professionals for communication with patients about DMR.

Fee for nutritional guidance and independent consultations

One GP indicated that a fee for nutritional guidance, so nutritional guidance will hook up on a specific ICD disease code for DRM as this is still not included in the Danish re-imbursement system, might change the behavior among the health professionals:

"The economy controls one's behavior. (...) So, if you get a fee for it, then I also believe that it will control the behavior a bit more" (GP3).

According to SDT, the financial-driven behavior indicates that the health professionals allow themselves to be controlled by external regulations. Therefore, a fee-based solution is assumed to motivate GPs and GPNs, as financial rewards can give individuals a sense of accomplishment. Introducing nutritional guidance as a fee-based task will also provide the opportunity for independent consultations regarding UWL as indicator of DRM.

Means of Communication

Patient-Centered Verbal Nutritional Guidance

The GPs and GPNs focused on the fact that the verbal nutritional guidance should be targeted to the individual and his/hers needs.

"So, I think you need to be very much aware of the patient's resources (...) in relation to what kind of understanding they have towards diet and nutrition (...). There is a really big difference between people regarding what level of education they have, what understanding they have of diet" (GPN17).

It is thus perceived necessary to consider the patient's resources and socioeconomic status when giving nutritional guidance. This understanding is important for health professionals to ensure an effective exchange of information with patients, especially if guidance is provided along with other competing information or concerns.

"Well, I don't always expect them to absorb it, because it is a lot of information at one time (...). So, it is also a matter of measuring what the patient can take in, and then you adjust the information accordingly" (GP8).

A patient-involving practice may help GPs gain insight and adjust their communication to the patients' understanding of nutrition as well as their ability to act on health information, cf. health literacy.

Written Material

Both GPs and GPNs emphasized the need for written material to support them in the consultations with patients with UWL:

"We could use a pamphlet (...). We do not have time to get around it, because we have to address many things during the 15 minutes, so giving the opportunity to transfer some self-care to the patient and say - you have to go home and read a little about this or try that" (GPN17).

The current competencies of the health professionals seem to be characterized by a lack of guidelines for managing UWL as indictor of DRM including specific advice and material that can be handed out to patients. The quote of GPN17 underlines that written material is advised to support oral information and can promote self-care, which is in line with the concept of empowerment, as it gives the individuals an opportunity to manage their own life and health in a meaningful way.

"And the pamphlet would be more for those who need a more short-term solution, before it is taken care of from somewhere else

(i.e., community dietician). Now if you say that it may for instance take four weeks, but in those four weeks they can easily do something themselves" (GP7).

"And with pictures (of the advised foodstuffs), I could imagine there are some who might think that was good" (GPN10).

Thus, if the right information is provided early and using the right literacy support including pictures to oral information, it is perceived that patients may advantageously initiate a behavior change and strengthen the body before a course of treatment at the hospital e.g., cancer treatment.

Forms of Message

Forms of Message	Element	Example
Approach Strategy [40]	Rational Hugging Strategy	Informing patients about pros and cons of a behavior change and providing specific nutritional advice
Forms of Appeal [41]	Ethos	Using the health professional as mediator
	Logos	Disseminating facts regarding DRM: *"Illness affects your body, and therefore you need more energy"*
	Patos	Addressing patients' emotional state by being sympathetic about their frustrations and fears: *"It can be difficult to implement new dietary habits… Five simple dietary tips can help you in your treatment …"*
Addressing the Lowest Common Denominator [43]	Syntax	Writing the material in active rather than passive form. This is done by avoiding sentence words, premodification and ellipses as well as using personal pronouns.
		Passive form → active form using personal pronouns: "*We* recommend that *you* choose dairy products and cheese with a high fat content". By using personal pronouns, the information is alienated.
		Sentence words: "food intake" → "eat food". By avoiding sentence words, it makes the material less foreign, just as it makes the texts less compact and abstract and thus easier for the patient to read.
		Premodification: "Malnutrition can have *many, far-reaching and serious consequences* for you". Avoiding premodification reduces the number of words. This downgrade and simplify the language, which facilitates comprehension.
		Ellipse: "Choose high-fat dairy products *if possible*" → "Choose high-fat dairy products *if it is possible*". By writing the sentence completely, it can to a greater extent ensure that the patient understands the content.
	Lexis	To omit professional jargon, abbreviations, paper clichés, synonyms and presuppositions:
		Professional jargon: "Do you experience *dysphagia*?" → "Do you experience *problems with swallowing*?". The use of technical terms can make the text incomprehensible and thus interfere with the patient's reading.
		Abbreviation: The use of abbreviations such as "kcal" should be used with caution, as it slows down the patient's reading if there are no common abbreviations.
		Paper clichés: "You can *take inquiry* to a dietitian" → "You can *contact* a dietitian". Paper clichés should be avoided, as they contribute to a solemn and often more complex language.
		Synonyms: "It is important for the body to get *energy*. *Calories* are easiest to get from fatty foods". Synonyms in the text material should be avoided so as not to create confusion for the patient.
		Presuppositions: "Quench your thirst in *energy-dense drinks*" → "Quench your thirst in *milk, protein drinks and juices with cream*". It is more appropriate to give concrete examples rather than assuming that patients have a specific knowledge of nutrition.
	Layout	Use of images to exemplify and illustrate foods

Table 2: Examples of Forms of Messages.

Approach Strategy and Forms of Appeal

It is considered appropriate to use an informative approach in the form of a rational approach strategy to meet the patients' needs. The rational approach can also be supported using logos appeal with a focus on disseminating facts regarding UWL as indicator of DRM. Furthermore, an expert appeal is applied when using the health professional as mediator, which is assumed to create greater credibility.

A GPN pointed out that the communicative approach regarding a dialogue about nutrition should not be 'giving lectures':

"Well, there are always barriers to something new, it's always like that for most people, right? Well, that's it, when you do not know anything about it, then you are always, "what does she want now?", and "why do we need to talk about this?" (...) People don't like to be lectured" (GPN9).

The GPN assumed that patients will be reluctant towards making a behavioral change.

Addressing the Lowest Common Denominator; Syntax, Lexis, and Layout

To ensure that the message is effectively communicated to both patients with high and low levels of health literacy, it is important that the written material communicates with a common language. Statements from GPs and GPNs highlight a need for material that promotes patient self-care through specific advice.

"Yes, just like the one we hand out to diabetic patients, it has pictures of the food" (GPN16).

"I think we ought to have something that is very simple. So not just what are the dietary guidelines, it should be a lot like for instance - light milk or whole milk, what is in it, - so it will be very manageable (...)" (GPN17).

The above quotations state that the material must be concrete as well as easily accessible and manageable. If the material becomes too text-heavy, there may be a risk that patients find it too unmanageable to embark upon changing their nutritional behavior. To ensure that the material is concrete and easy to read, communicative tools (e.g., syntax and lexis) need to be considered (see examples of sentences in Table 2). Another communicative tool is having the appropriate layout. The use of images makes it easier for patients to get an overview of which foods are efficient to prevent further weight loss.

In addition, a GPN highlighted the amount of information based on her experience from other sorts of information:

"I usually write down maybe five to six things, so they get a note in hand about what it is they need to focus on. I also don't think that they should have all kinds of reading material, so a maximum of six points. People can't relate to more - not the first time I think" (GPN6).

By keeping the information relatively light and concise, the material will be understandable for everyone, including patients with low levels of health literacy.

In the dissemination of nutritional guidance, it is therefore recommended to adjust the material to the patients' level of health literacy in relation to the use of lexis, syntax and layout. Communication strategy recommendations based on this analysis are listed in Table 3.

Communication Strategy	Recommendation
Strategy and Preparation	To integrate nutritional education and training in a future intervention to increase the competencies and motivation of GPs and GPNs to provide nutritional guidance
	To introduce nutritional guidance as a fee-based task and thus independent consultations
	To ensure compliance between the guidance in general practice and in the hospitals
	To involve relatives in the nutritional guidance
	To communicate a common vision when implementing nutritional guidance in general practice
Channel and Media Strategy	To provide patient-centered verbal nutritional guidance
	To use written material as a starting point in the verbal guidance and hand out to patients
Forms of Message	To use a rational hugging strategy when communicating to patients about DRM. Furthermore, using all main forms of appeal: ethos, logos and pathos
	Addressing the lowest common denominator by considering communicative tools; syntax, lexis and layout
GP=General practitioner GPN=General practice nurse DRM=Disease-related malnutrition	

Table 3: Recommendations for Early Management of Patients with Disease-related Malnutrition in General Practice.

Patients

Findings from the patient interviews suggest that patients were worried about UWL, however the general experience was that UWL was ignored by the GP, and that support was not given even if patients themselves asked for it.

"When I came to the doctor the understanding for my concern (UWL) was limited! (...) I've always had problems with my weight (obesity), but quickly I realized that this wasn't good. But when I came to the doctor the understanding for the weight loss - it wasn't much! Because my family doctor is so skinny, and he thinks everyone should be like him. So, he thought that losing weight was positive. So, it was not until he found out that there was a change in my blood percentage that he realized something was wrong" (P3).

Another patient, who was concerned about his UWL, was not met with sympathy by his GP.

"But, when I visited the GP and told him that I was still losing weight, and that the only thing I could eat was a small portion of oatmeal in the morning, he said: "Well then you can keep eating oatmeal the rest of the day". I don't think that was a qualified advice" (P6).

The patients reported complex detection and treatment processes they could not follow.

"No, nutritional guidance she (GP) gave me. She thought that the doctors at the hospital had to find out why I was losing weight, and therefore she sent me to the hospital." (P1)

"I think she (GP) was aware that I was sick, as we didn't talk about the weight loss at all. She just said that she sent me to the hospital, (...) and then she gave me some stomach acid tablets" (P4).

It seems like the GPs had transferred the responsibility to the doctors at the hospital regarding to the patients' nutritional status. In addition, another GP did not found nutritional advise necessary even though she knew that the patient was ill. This can be problematic, as several studies have shown the negative consequences associated to DRM for both the patient and the community.

Thus, it seems appropriate to use a so-called hugging strategy, which focuses on communicating the benefits of a behavior change and thus preventing immediate resistance among patients, so these patients could actually feel supported but also gain knowledge of how to slow down weight loss until in therapy for their actual disease and until they are safe with a dietician or other nutritional expert. As a supplement, the use of pathos appeal can help address patients' emotional state by being sympathetic about their frustrations and fears. A rational hugging strategy can be considered appropriate to use when communicating to patients about UWL as well as DRM and nutrition. In addition, it is recommended to use all three main forms of appeal to support the use of the approach strategy (see examples in Table 2).

"But it was actually not fun to lose weight when you don't think you can control it yourself" (P7).

Just that I've been told that it's not healthy for you to lose weight the way I did. Just the fact that some have told me that it is not healthy for you to lose weight the way you do" (P3).

Some of the patients wish they had been given the knowledge that it was not healthy to lose weight during their cancer course, due to the negative consequences the weight loss has led to. Furthermore, not all patients did not like that they cannot control their weight loss, so it must be assumed that a nutritional intervention can help them, as they can do something regarding the food and therefore prevent additional weight loss.

Not all patients were however ignored for their weight loss and some even found support and efficiency in the way they were guided, although this was not until hospital care.

*"I got all sorts of pamphlets (at the hospital), (...) and to put an end to it (UWL), we bought those supplement drinks (oral nutritional supplements)" (*P4).

The quote of P4 suggests that patients can provide self-care and empower themselves using written material provided from the hospital. Furthermore, it illustrates that patients have the competencies and belief in their own ability to act, which indicate high self-efficacy, cf. HBM. Thus, the use of written material is advantageous in hospitals, and it is expected to be advantageous in general practice as well. Therefore, a future intervention should be accompanied by written material, which GPs and GPNs can use as a starting point and hand out to patients with UWL as indicator of DRM.

Discussion

The purpose of this study was to investigate which elements are perceived necessary for an early management of DRM in general practice and based on this knowledge provide recommendations for an effective communication strategy for patients at nutritional risk in general practice. The data suggests that early guidance including consideration of the individual patient needs, preferences and values is recommended, as also recommended by guidelines and other studies, however in other settings [26]. Our findings reveal that patients with UWL who approach the GP may be affected by many worries and opposing emotions, which can block the information that the GPs and/or GPNs may try to communicate, unless a careful strategy for communication is used. Only two nurses reflect on the individual literacy competences of patients

which may very much affect patient's abilities to enhance health literacy. Even though a model was made for the individualized care for patients with nutritional challenges, this model does not regard learning abilities, as we found necessary in the opinion of experienced nurses and patients [26].

Strategy and Preparation of health professionals

In order to ensure effective nutritional guidance, this study found that it is essential to give the GPs and GPNs adequate skills through nutritional education. In the delivery of health services, effective communication plays an important role in helping patients maintain good health. Health professionals must be able to provide adequate information to help patients make preventive choices through advice on nutritional needs and physical activity [45,46].

Means of Communication

The findings from the analysis advocated a need for patient-centered nutritional guidance through a combination of verbal guidance and written material. This is supported by research that shows associations between patient-centered guidance and positive outcomes such as improved patient experiences, healthcare quality, and health outcomes [52-55].

Furthermore, the use of both verbal guidance and written material is supported in the literature. Studies show that a combination of both verbal and written health guidance enables the provision of standardized information to patients, which appears to improve knowledge and healthcare satisfaction [56-58]. The combination of both channels is advantageous as verbal guidance involves a two-way communication between the health professional and the patient, while the written material improves dietary compliance and enables patients to access the guidance on their own terms [42, 59, 60]. This supports the study's recommendation that GPs and GPNs in general practice should use written material as a tool to provide verbal nutritional guidance.

Forms of Message

In this study, GPs and GPNs expressed that the written material should be concrete, concise, simple and visual. This finding is supported by several guidelines and recommendations for providing understandable information to all patients regardless of their level of health literacy [39, 61, 62]. The Danish Health Authority suggests that patient education materials should be written at a sixth grade reading level and use a plain language in terms of short, simple words, writing short sentences and avoiding professional jargon [39]. In addition, guidelines recommend layout including use of bullet points, headings and subheadings as well as simple illustrations [39, 61], which support the study findings in this study.

Strengths and Limitations

To our knowledge, this is the first study to investigate necessary elements for an effective communication strategy in order to improve the management of UWL as indicator of DRM in general practice. Therefore, the findings and recommendations of this study can contribute to future nutrition interventions in general practice. Furthermore, the study explores the current management of DRM in general practice from several perspectives. This strengthens the results as it gives the study an extensive and nuanced dataset and thus increases the validity of the study. Limitations of the study include risk of selection-bias as the sample may not represent the general population. The participating patients were all diagnosed with cancer, and it can therefore be difficult to transfer the findings to other patient groups. The use of secondary analysis includes a risk of insufficient data to address the study objective, as it is beyond the original aim for data collection, and therefore the data may not be complete [29].

Conclusion

Results from this study provide recommendations for an effective communication strategy to improve the early management of patients with an UWL as indicator of DRM in general practice, but the health professionals need education regard to give patients nutritional guidance. Furthermore, a communication strategy is an effective tool for describing objectives, messages, relevant media and timing within a specific intervention. Thus, the suggested communication strategy may be relevant for similar nutritional interventions regarding health professionals guiding patients with UWL in other settings e.g., hospitals and stays for rehabilitation. Further studies are needed to investigate whether the above communication strategy can help health professionals in providing and disseminating nutritional guidance and patient education to patients with UWL.

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Conflict of Interest Statement

There is no conflict of interest in this study.

Authorship

MH performed the study design and conception. The data collection was performed by MH and SM, and SM made the transcription of all the interviews. SSM and CLM made the analysis and interpretation of the data and thereafter made the first draft of the manuscript. The manuscript was critically revised by all the authors, and all wrote and were agree with the content of the final edition of the manuscript.

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