

Nutrition Denmark Case study



at the heart of healthcare



Corporate Social Responsibility is at the heart of what we do at Mediq.

Through our CSR strategy, we are committed to the United Nations Sustainable Development Goal 3 (SDG 3): good health and well-being for all. We believe that through developing innovative healthcare solutions, we can contribute to building a better and healthier world. We have translated SDG3 into two strategic goals: healthcare system strengthening and patient empowerment & well-being. We offer several services that contribute to one, or both goals.

One of the examples of such a service concept is Nutrition Denmark – which provides a connection between the hospital and home care to ensure a better outcome of nutrition treatment. At Mediq we use the quadruple aim model¹ to determine and measure our societal contribution. This report describes the effects of the Nutrition Denmark service on all four pillars of the quadruple aim.

Introduction

Malnutrition of patients is a common phenomenon in hospitals, nursing homes, and home care. Malnutrition can have several health consequences, such as a weakened immune system, decreased quality of life, increased fatigue, and increased morbidity. Furthermore, malnutrition can lead to complications in the case of an illness. With the correct medical nutrition² plan, it is possible to reduce the number of malnourished patients. However, when this medical nutrition plan is not followed, the chances of undesired treatment outcomes, such as re-admission to the hospital, increases.

To prevent this from happening, Mediq developed the Nutrition Denmark service, providing medical nutrition training to healthcare professionals (for example, a nurse or a dietician) and bedside training of the patients at the patients' home.

Nutrition Denmark service

When a patient is discharged from the hospital, Mediq is contacted by the hospital or the healthcare professional in the municipalities to discuss the nutrition plan for the patient and/or the needs of support. Mediq will then ensure the patient gets all the products (medical nutrition and the required devices to consume the medical nutrition). Most crucial to this service is the additive of providing education to the healthcare professional or the patient depending on the home care needs.

Mediq's Medical Nutrition Specialist visits the patient to explain all procedures related to medical nutrition to the healthcare professional and the patient. This also enables patients and healthcare professionals to discuss uncertainties they have about medical nutrition with the Medical Nutrition Specialist.

¹ Quadruple Aim: improved patient experience, better health outcomes, more satisfied staff experience, and lower cost of care.

² Medical nutrition (treatment) refers to malnutrition related to various diseases e.g., cancer, stroke and neurological diagnosis and can only be obtained by a medical prescription.

Nutrition Denmark service is about educating healthcare professionals and patients to **improve health outcomes**. By doing so we assume to contribute to **improved patient experience**, more **satisfied staff experience**, and **lower cost of care**.

Procedure

To study the effect of Nutrition Denmark service on the four quarters of the quadruple aim, we have asked healthcare professionals and patients (or in the case of a young patient - the parent, or in case of incapable patient - the caregiver) to answer a few questions after having received the training.

The training takes place after the patient is discharged from the hospital and either goes home or to a municipality house. Participation in the study was voluntary. The team of Mediq nutrition specialists contains ten dietitians and two nurses. After informed consent was signed, the participants received a questionnaire containing nine questions. Data gathering started in January 2022 and was finished end of August 2022.

Participants

This study contains two research groups: healthcare professionals and patients. All healthcare professionals were working for the municipalities offering patients care at home. In total, 32 healthcare professionals participated in this study with varying educational backgrounds: 12 nurses, 8 developmental educators for people with disabilities, 1 occupational therapist, 6 social and health assistants, 2 students and 3 people who did not indicate their profession. Four healthcare professionals did not indicate their years of experience, for the remaining 28, the average experience was of 10.2 years (ranging from 0 to 32 years).

All patients were in need of tube feeding (no sip feeding) for various of reasons. In total 12 patients (or their parent or caregiver) participated in the study: 5 patients, 4 parents and 3 caregivers. The reasons for in the need of medical nutrition were: ALS (1), cancer (3), dehydration (1), diet (1), severe problems with eating (2), dysphagia (1), Parkinson's disease (2), and not indicated (1).

Outcome measures

For all questions participants were able to answer “**yes**”, “**no**” or “**I don’t know**”. The healthcare professional questionnaire focused on questions relating to health outcomes, staff experience and cost of care. The patient questionnaire focused on health outcomes and patient experience. All questions are depicted in the results table.

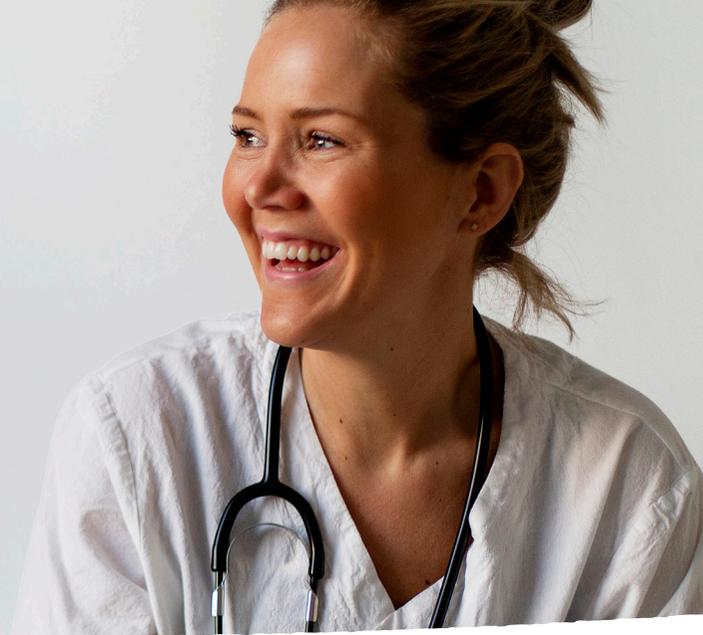
- **Health outcomes** will be determined by asking both patients as well as healthcare professionals about matters such as treatment compliance and readmission risks.
- **Staff experience** will be determined by asking healthcare professionals about confidence, competence, and satisfaction after having received the training.
- **Patient experience** will be determined by asking patients about confidence and quality of life after having received the training.
- **Lower cost of care** will be determined by asking healthcare professionals whether Nutrition Denmark service saves them time.

Analyses

For each question the percentage of “**yes**”, “**no**” or “**I don’t know**” will be calculated. For the question asking for a time indication we will calculate the average indicated minutes.



Results



Healthcare professionals

The majority of healthcare professionals believe Nutrition Denmark decreases risk of therapy failure and risk of readmission. Furthermore, healthcare professionals indicate that they are enabled to provide better care. This suggests that Nutrition Denmark service contributes to better health outcomes of their patient.

Furthermore, healthcare professionals report to have increased confidence and competence after receiving the training, while feeling of stress is decreased. Also, they indicate to be better aware of patients' needs. Overall, healthcare professionals would recommend the Nutrition Denmark service to colleagues. This implies that Nutrition Denmark service contributes to improved staff experience.

Half of the healthcare professionals were not sure whether Nutrition Denmark resulted in saving time. A few healthcare professionals that do believe the Nutrition Denmark service saves them time indicated that this is approximately 24 minutes per day. This could potentially lead to lowered cost of care. For detailed description of the results please see Table 1 and Figure 1.

72% of healthcare professionals indicate that Nutrition Denmark services makes them better aware of patients' needs of support related to nutrition.

94% of healthcare professionals indicate that Nutrition Denmark service enables them to provide a better care.

"It's been great to have someone to support us. Working with tubes is an entirely new world to us, which makes it a bit overwhelming. The dieticians from Mediq Denmark have been incredibly kind and helpful" - Majken, Social worker, Skanderborg kommune (eller County)

Healthcare professionals

		Yes	No	I don't know
Health outcomes	Do you believe this Medical Nutrition service contributes to the decreased risk of nutrition therapy failure?	78%	3%	19%
Health outcomes	Do you think this Medical Nutrition service contributes to decreases in readmissions due to malnutrition?	72%	6%	31%
Health outcomes	Does the service enable you to provide better care to your patients?	94%	0%	6%
Staff experience	Would you recommend the Medical Nutrition service to other colleagues?	91%	0%	9%
Staff experience	Does this Medical Nutrition service reduce feelings like tension/ stress/ anxiety about the care (nutrition treatment) you need to provide?	72%	6%	22%
Staff experience	After having received the Medical Nutrition service, do you feel more competent then before?	94%	0%	6%
Staff experience	After having received the Medical Nutrition service, do you feel more confident about the nutrition therapy then before?	72%	16%	13%
Staff experience	After having received the Medical Nutrition service, do you feel you are better aware of the patients' needs of support related to Nutrition?	72%	13%	16%
Cost of care	Does the service help you to save time on puzzling treatment demands?	34,38%	9,38%	53,10%
Cost of care	If 'yes': how much time do you estimate per day?	24 minutes		

Results



Patients

The majority of patients indicates that the Nutrition Denmark service supports them in reaching their nutrition goals and following their nutrition plan. This suggests that the Nutrition Denmark service contributes to improved health outcomes.

Furthermore, the majority of patients report that the service contributes to their independence, increased confidence and decreased insecurities about medical nutrition. Additionally, Nutrition Denmark enables them to perform activities that matter to them, helps in regaining freedom and thereby contributes to quality of life. This suggests that Nutrition Denmark service contributes to improved patient experience. However, only half of the patients suggested that their food intake schedule can be adjusted to their own activities. This indicates that they need to stick to a schedule that cannot be adjusted to their preferred activities. For detailed description of results please see Table 2 and Figure 1.

83% of patients indicate that the Nutrition Denmark service enables them to reach their nutrition goals.

100% of patients indicate that the Nutrition Denmark service contributes to their quality of life.

Patients

		Yes	No	I don't know
Health outcomes	Do you believe this Medical Nutrition service contributes to the decreased risk of nutrition therapy failure?	78%	3%	19%
Health outcomes	Do you think this Medical Nutrition service contributes to decreases in readmissions due to malnutrition?	72%	6%	31%
Patient experience	Does the Medical Nutrition service provide you with enough information and knowledge to independently consume your medical food? <i>[only 11 patients answered the question]</i>	91%	9%	17%
Patient experience	After receiving the Medical Nutrition service, did you feel confident enough to consume the medical food by yourself? <i>[only 11 patients answered the question]</i>	100%	0%	17%
Patient experience	Does the Medical Nutrition service enable you to adjust your food intake schedule to your own activities?	50%	33%	0%
Patient experience	Does the Medical Nutrition service provide you with enough information to undertake activities that matter to you? <i>[only 11 patients answered the question]</i>	73%	9%	0%
Patient experience	Does the Medical Nutrition service contribute to the quality of your everyday life?	100%	0%	17%
Patient experience	Does the Medical Nutrition service help you to regain freedom?	83%	8%	18%
Patient experience	Did the training decrease your experience of insecurities when it comes to administration of the medical food? <i>[only 11 patients answered the question]</i>	91%	0%	0%

Conclusion

In this study, we assessed the effects of **Nutrition Denmark service, through the quadruple aim model: health outcomes, patient experience, staff experience, and cost of care.** We were expecting the service to contribute to improved health outcomes, improve patient experience, improved staff experience and lower cost of care.

According to healthcare professionals and patients the service could lead to improved health outcomes. Furthermore, healthcare professionals indicated improved staff experience and patients indicated improved patients experience. Lastly, the effect of Nutrition Denmark service on cost of care (by reducing time) cannot be concluded because of lack of data. The preliminary data do suggest a time saving of on average 24 minutes a day.

These results should be considered in light of the type of study and questionnaires. No statistical tests are being performed. While the results are encouraging, we underline that only twelve patients participated, which makes results for patients less strong.

Remarks

This multidisciplinary study was performed in collaboration with the corporate social responsibility team of Mediq Group





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