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Nurses' Attitudes for Supporting Complementary Medicine in Crohns Disease–A Qualitative Interview Study

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ABSTRACT

Aim: Barriers may obstruct - and facilitators promote the implementation of interventions with complementary medicine to support medical treatment. Based on this knowledge, the aim was to gather insight into attitudes that may positively or negatively influence nurse's engagement in an upcoming lifestyle intervention in patients with Crohn's disease in order to be at forefront of barriers and best promote advantages. **Methods:** Nurses' attitudes were gathered to gain insight into preparations that may benefit nurses' engagement into a future intervention with a plant-based and anti-inflammatory diet as complementary medicine in patients with Crohn's disease. Five focus group interviews were conducted at four Danish hospitals. Data was analyzed using a hermeneutic analysis approach. **Findings:** The main findings of this study were that several attitudes among nurses may impact the study implementation and thus possibly influence the patients' compliance to interventions. Lack of knowledge and evidence, pre-understanding, different attitudes between professions, lack of time, nurse-patient relationship and experience were found as barriers. Personal motivation and the nurse-patient relationship were facilitators that could have a positive effect towards the nurses' positive support to intervention. Proposals to facilitate implementation were: early information, education, written material, taste tests and facilitating a contact person between the intervention study setting and nurses. **Conclusion:** The study highlights nurses' attitudes prior to implementing complementary medicine and points out the need for sound preparation, information and involvement before initiating an upcoming intervention.

Reporting Method: The study has adhered to the relevant EQUATOR guideline: Standards for Reporting Qualitative Research

Patient or Public Contribution: The nurses involved in this study contributed with their insights through semi-structured interviews. The study contributes to the wider global clinical community by providing knowledge about what it takes for nurses to feel motivated to engage

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patients in complementary therapy studies and lifestyle changes.

Keywords: Dietary Interventions, Crohns Disease, Nursing, Focus Group Interviews, Complex Interventions, Barriers, Facilitators.

INTRODUCTION AND BACKGROUND

Successful implementation of changes in health care systems needs firm insight, planning and preparation [1]. Complementary medicine (CM) or therapy is in this study defined as additional methods that are used along with traditional medical approaches, in a belief that it improves the effect of treatments [2]. Among these CM´s, diet has been viewed among patients with Crohn's disease, as important to holistically support the management of their disease [3]. Barriers and facilitators among nurses are expected to have an impact on patients' participation and compliance in relation to interventions with CM [4-8]. Out of eight survey studies, nurses' attitudes towards CM were evaluated dichotomously as either positive or negative toward the use of CM therapy. While studies overall found a positive attitude to the use of CM and the view that CM may be a useful complement to conventional treatments, perceived lack of evidence and potential side effects as well as the possible interference with other medications represented major concerns. Despite the generally positive attitudes to CM, organizational policy constraints and possible liability in engaging with CM were the most significant barriers. Although a review investigated a large variety of CMs´, only one included study investigated barriers and facilitators towards implementing a dietary intervention. That study investigated the use of dietary supplements for weight loss outside the hospital [9].

In daily practice, patients' contact nurses with various problems. In dietary interventions, the referrals are often related to abdominal pain or discomfort related to intake of certain foods [10,11]. In patients with Crohn's disease (CD), it is expected that patients will experience bloating and maybe pain and discomfort in the beginning of a dietary change intervention. It is also expected that patients may approach their treatment nurses about these discomforts, when it comes to the intervention of a CM`s in a study like the proposed with an anti-inflammatory dietary intervention mostly consisting of plant-based foods.

Prior to implementing a proposed CM study, involving a 12-week anti-inflammatory and plant-based diet for patients with CD, we therefore found it pertinent to examine whether nurses in the department where patients receive their biological treatment are aware of the distinction between disease flares and symptoms that are natural but may shortly involve discomfort, when making dietary changes.

Nurses who have a negative pre-understanding about the intervention, may tend to obstruct the patients' implementation of the study in order to make the patient feel comfortable, or if the nurses feel insecure about the intervention, although this may not be based on medical argumentation [9]. Therefore, it seems relevant to gain knowledge about barriers and facilitators of nurses' experience to support the implementation of an intervention [12].

Aim and objective

This study aimed to explore the barriers and facilitators among nurses related to a complementary anti-inflammatory and plant-based diet intervention for patients with CD. In addition, we sought to investigate the nurses' own perspectives on what is necessary for a CM intervention to be more manageable for them, as well as what is required for them to support their patients in implementing a dietary intervention.

METHODS/METHODOLOGY

Design and theoretical framework

Five focus group interviews with nurses were conducted at four Danish hospitals between March 15. and April 30. 2022. Data were analyzed using a hermeneutic approach.

Setting and recruitment

The participants were recruited from four hospitals from different regions in Denmark, including three University Hospitals as well as one rural district Regional Hospital to ensure the geographical dispersion. The 27 participants were nurses working in outpatient settings with patients with Crohn's disease (CD) in biological treatment. A purpose-based recruitment strategy has been used, where informants are selected because they are expected to possess the knowledge that can contribute to answering the research question.

Inclusion and exclusion criteria

The inclusion criteria were nurses working in outpatient settings with patients with CD in biological treatment. A gatekeeper has been chosen to assist with the recruitment of relevant departments, to facilitate a more direct connection through the network. The head-nurse or development nurse in each setting selected the participants. There were no exclusion criteria.

Data sources/collection

The interviews were all conducted by three project employees with healthcare backgrounds and master's degree. The project leader and supervisor (nurse, professor) were very experienced in the field of Gastroenterology including CD nursing care, as well as with the methodology of focus group interviews. Four of the focus group interviews took place at different hospitals, while the remaining focus group interview took place online using Microsoft Teams [13]. Time for the focus group interviews was limited by nurses needing to go back to clinical work so all interviews lasted around 45 minutes. Data were conducted through a semi-structured interview guide according to Fixens [14] approach to implementation research. Interviews were started with open questions around the main themes such as barriers, facilitators, the role of professionals and personal beliefs regarding the possible implementation of a plant-based diet as an intervention complementary to existing medical treatment. Follow-up questions were used and included: "*Could you imagine things that may be a barrier to your approach to patients participating in CT's?" and "visualize your patient is participating in a trial of CT and is experiencing stomach ache, how could you imagine that you would respond to these symptoms?*". The interview guide developed continuously through the interviews, through an iterative process.

Interviews were recorded and transcribed verbatim after each interview by one of the project employees.

Data analysis

This study's analysis was based on hermeneutic analysis method [15]. The method has been selected due to its provision of a step-by-step guide for analyzing the material, resulting in the creation of a comprehensive understanding of the research problem, while also identifying themes across the interviews. All three project employees made the first analysis. NVivo was used to code themes after first reading and discussion and themes found and sorted into eight categories. The initial themes were discussed again including the project leader and then revised. Finally, nine themes emerged.

Ethical considerations

Prior to the interviews, written informed consent was obtained from the participants where they were informed about purpose, anonymity, and option to withdraw from the study, as according to the Helsinki declaration. Participants were not paid to participate in interviews. The interviews were conducted, and transcriptions stored according to The General Data Protection Regulation (GDPR) [16].

Rigour

The study was designed and reported according to the guidelines from "SRQR" [17]. Focus groups using semi-structured interviews were used at these are ideal for gaining insights into groups of people's experiences and attitudes towards a given topic. Furthermore, one of the benefits of using a focus group interview is that the interview format is well-suited for exploring new areas, given the opportunity discuss attitudes and opinions with the other participants. The interaction between participants can bring forth emotional and spontaneous perspectives on the subject. Researcher triangulations were used throughout the data analysis.

FINDINGS

Participant characteristics

All the participants were females except one male nurse. Most of the participants were between 35-44 years old (34.48%), the youngest participant being 26 years old and the oldest 64 years old. Most participants were employed below 14 years (Table 1).

Table 1. Demographic information of participants

Variable	N (%)
Age, Years	
25-34	7(24.14)
35-44	10(34.48)
45-54	4(13.79)
55-64	8(27.59)
Years employed in unit	
0-4	9(31.03)
5-9	6(20.69)
10-14	8(27.59)
15-19	1(3.45)
>20	5(17.24)
Hospital	
University Hospital 1	13(44.83)
University Hospital 2	6(20.69)
University hospital 3	6(20.69)
Regional Hospital	4(13.79)

In the analysis of the interviews, several themes have emerged that may impact the nurses support of implementing a plant-based and diet. The themes are represented in Table 2.

Table 2. Themes emerging from the interviews

Barriers	Facilitators
Lack of knowledge	Motivation
Lack of evidence	Nurse-patient relationship
Pre-understanding	Proposal for measures
Different attitudes between personnel groups	- Information material
Lack of time	- Well-informed
Nurse-patient relationship	- Contact person
Professional experience	- Taste test
	- Recipes

The nurses mentioned a lack of understanding regarding the composition of anti-inflammatory, plant-based diets. Throughout the interviews, they also express that they do not know how to guide or assist patients if they seek advice because they have no knowledge of where to buy the food, how to properly compose a nutritionally adequate diet, and what the portion sizes should be: "*Now I'm not particularly experienced in plant-based. The less you know, the more difficult it is to sit and support or guide someone. Of course, that can also be a barrier*" (Interview 5).

The nurses' lack of knowledge about the dietary principles of the intervention is perceived as a barrier, which can potentially weaken the future intervention. This indicates the need to provide the nurses with knowledge about the diet and some training before the implementation.

Lack of evidence

Limited evidence regarding dietary interventions was found as a preconception and seemed to be a barrier from the nurses' perspective regarding implementation of the intervention: "*I think... we will find it difficult to get the physicians involved as well, and to implement it, because there are no clear guidelines or evidence that it has an effect*" (Interview 3).

It was discussed that the nurses find it somewhat problematic that an intervention is not based on strong evidence, and it appeared that they would be more motivated towards the intervention if it is scientifically supported. The founding shows that it is important to address why the intervention seems relevant for the patient group despite not being supported by many clinical studies.

Pre-understanding

Overall, the nurses imagined that the future intervention would be a major lifestyle change for the patients, and a profound change that may be difficult to enhance due to their disease and personal life: "*I don't know if it is ethically correct, but I think that it is possible that us nurses might inform the patients that they can leave the study if they experience bloating or other symptoms from their disease. It is not that I believe that a diet can't affect anything, but I think that I might have a pre-understanding that it could give them more symptoms*" (Interview 2).

The interviewee expresses concern towards the implications a plant-based diet may have on patient experienced symptoms, and the negative pe-understanding towards the intervention may affect how the nurses guide and support their patients: "*I don't think you can avoid reflecting your attitude*" (Interview 2). The nurses think it could be difficult not to exude an attitude, which in this case, concerns a skepticism from the nurses, as their biases rely on skepticism towards the intervention. The findings indicate that nurses' beliefs may affect whether they motivate patients to stay in an intervention or not if patients require motivation for continued participation or reveal abdominal discomforts. This might be interpreted that nurses pre-understanding appear as a barrier for implementing diet interventions.

Different attitudes between nurses and physicians

This theme covered cooperation between nurses and physicians: "*Our physicians have a different attitude than the nurses have concerning diet*" (Interview 4).

The nurses had experience that physicians and nurses did not always have the same attitude towards dietary interventions, which they found could make it difficult to give patients guidance. They had experienced that those different perceptions, could lead to misunderstandings and reluctance against the intervention for the patients. Another nurse agreed: "*It is difficult to say something supportive about diet, when the physician says something different and that they don't believe it*" (Interview 4).

The interviewee experienced a barrier expressing different views on nutrition since they had formerly learned that the physicians did not always share the same beliefs or optimism about dietary interventions having a positive impact on patients.

Lack of time

A firm consensus was that when implementing new interventions, these are often time-consuming, which was perceived as a barrier among nurses. It became explicit that this barrier was of great importance: "*(...) when it comes to patient contact, time is significant, and even the already most necessary tasks require more time than what is prioritized for the treatment. New interventions always take more time from us than what was promised. We have experienced that before*" (Interview 3).

The nurse experienced, that new interventions could be time consuming, regardless of the nurse's role in the interventions, and that the nurses needed more time if they were expected to talk to patients and support them regarding CM´s as a part of the treatment. This was supported by all nurses across the interviews.

Motivation

One of the interviewees explained that it would be motivating for her to actively participate in arising evidence: "*We are professionals and would like to support a project, in order to arise evidence in the field*" (Interview 5).

This opinion was supported by some and not by others, whom

were slightly less enthusiastic about the contributing to creating science. However, it was clear that the nurses found themselves very much motivated by being a part of a project when they could observe and contribute to their patients getting better. Furthermore, it seemed to be a motivational factor if the nurses had tasks to support their patients: "*I think that if it turns out that there are significant benefits and that patients felt significantly better, this will actually make a difference on our consultations because we would actually be able to say to patients that this intervention would help them. And if we had material to hand out, we would be more motivated by the fact that research suggests that living in a certain way can have a beneficial effect*" (Interview 2). It thus seemed that nurses were mostly motivated by the results they saw in patients they cared for, and that motivation, regarded contributing to the best conditions for patients. This motivation may contribute to the intervention achieving the best prerequisites to be implemented as intended.

The professional-patient relationship

This theme seemed to be both a facilitator and a barrier among nurses and seemed specifically related to the CM "anti-inflammatory-plant based diet intervention". The interaction between nurses and patients was expected to have important influence on the intervention: "*So I think, I believe that many (patients) will say yes, but I may doubt whether they will actually fully follow it when they are away studying or working, where they usually go to the cafeteria, but now they have to bring their own packed lunch*" (interview 2). Nurses generally have some skepticism towards the intervention on behalf of their patients because they lack confidence that the patients will be able to adhere to and meet the requirements of the plant-based and anti-inflammatory intervention. This is further evident from the interviews, which indicate that this influences the nurses' perspective on the effort and their attitude towards it. They express that it would initially be a barrier for them if one of their patients wants to participate, since the nurses lack confidence in their ability to implement the intervention. On the other hand, it would be seen as a facilitator if they perceive their patients as resourceful and have confidence in their ability to carry out the 12-week dietary intervention.

Professional experience

Nurses explained that a lot of their guidance of patients came from professional experiences, because they felt a lack of scientifically documented evidence they could use: "*The advice is given from our experience with the patients. And then the patients get different answers depending on who they ask. Because our experience might not be the same. So, it would be nice to be able to say: here is a study that shows…*" (Interview 1). The nurse expressed frustration concerning the fact that they had to build their guidance on experiences, as it could ultimately mean that patients received different guidance depending on who they were talking to. The nurses in the first interview all agreed. The patient perspective and the fact that the implementation would benefit patients were seen as important facilitators, while participants saw their own professional experiences as both a possible facilitator and a barrier for implementation of a CM intervention.

Proposals for measures

The nurses had various suggestions that they found could improve the implementation of an intervention. These suggestions were: written information, which could be formed as a booklet or presentation of scientific articles. There were also suggestions regarding education, tasting of plant-based foods and a sheet with the most likely questions and answers to support their conversation with patients. Among other things, nurses experience that they felt well-prepared if they had sufficient knowledge about the intervention: "*But it requires that we know a lot, if we shall be confident in guiding the patients. That it is ok to be bloated (when making significant changes to one's diet...). So, it requires that we get information or education*" (Interview 1). Having knowledge about the intervention and what consequences the CM could have for patients, were prominent issues for nurses when supporting patients. A specific approach in a successful implementation, would therefore be to ensure that nurses felt they were well-informed and able to feel securely informed in the conversation with patients. One of the interviewees expressed a certain method for nurses to feel well-informed when guiding their patients: "*Could one imagine having an overview of possible answers to the questions that will most obviously be asked by patients? So that you were prepared*" (Interview 1). In the nurse's perception, it would give nurses a feeling of being prepared and well-informed. However, this would require an assessment of the questions patients could possibly ask. It was also mentioned that having a contact person for the intervention whom nurses could contact if they

had questions about the intervention, would be meaningful. Furthermore, having a contact person for the study among the nurses was suggested. Another proposal was to let the nurses taste the food that the patients were advised to eat in this specific case, and thus gain a greater understanding of what the patients should eat while participating in the intervention. As a supplement to the trial tasting, nurses would like to see the diet plan that the patients would be given.

The findings that emerged was that nurses would wish to have information material, feel that they are well-informed and have firm and timely knowledge about the intervention. Furthermore, they would want a contact person they could turn to if there were any doubt as well as taste tastes and recipes.

DISCUSSION

The purpose of this study was to gain understanding of nurses' barriers and facilitators in relation to a future implementation of an intervention with plant-based diet for patients with CD. The study is considered relevant because identifying barriers and facilitators may potentially contribute to ensuring the best possible success of the implementation of a plant based diet rich in phytochemicals, increased unsaturated fatty acids as well as polyphenolic compounds which, based on experimental models and animal studies of IBD, may have beneficial health effects with potential therapeutic effects as adjunct to medical treatment for IBD [18]. These mechanisms have however not been tested in patients with Crohns disease. The testing in patients may need the firm assistance of nurses working with IBD-patients, as patients often rely on the advice from nurses [19]. But even though a plant based diet may as such be the overall healthier choice, as it is rich in dietary fiber, anti-oxidants, phytochemicals and unsaturated fatty acids, an assumption could be that nurses' have barriers and facilitators which may be brought into play in the communication with patients and thus potentially influence patient compliance.

The interviews contributed with new knowledge and suggestions for changes which may be taken into regard when planning a non-medical therapy to support the traditional treatment. Nurses further highlighted proposals for measures they believe could help reduce the barriers and facilitate future implementations.

The study's findings agree with other literature of CM, but it also brings new insights on the theme of anti-inflammatory and plant-based diets, which nurses found to be a more life changing intervention for their patients than for instance joining a training program. Existing literature, consisting of ten relevant articles found barriers to be: lack of time, lack of knowledge, influence of the traditional framework and limitations of the healthcare system (setting), motivation, the professional-patient relationship, the need for a contact person and a fear of harming their patients [4-12,19]. The literature thus agreed with our findings, but since the literature was basically based on studies investigating perspectives in conjunction with training and what our participants found were maybe less profound lifestyle interventions, this was the first study that took as its starting point a pervasive intervention, more specifically about CM with a focus on an anti-inflammatory and plant-based dietary intervention.

Lack of knowledge

Specific proposals were revealed and could probably be facilitating factors for the implementation of a complex CM intervention since nurses explained proposed a feeling of being more secure and more well-informed by their suggested approaches. Other studies found a lack of knowledge as an element that is important to focus on in the implementation of an intervention with CM [4,6,20-24]. Studies also showed that nurses in general seem to have a need for knowledge about health promoting measures and especially knowledge regarding nutrition [4].

In the material nurses suggest, it would be advantageous to point out that they are going to be a part of the development of new knowledge and that the project or intervention contributes to knowledge that can help the patients feel less sick. It appears that a proposal for changes that can facilitate the implementation of an intervention is that nurses are motivated by receiving knowledge and material they can use directly in the interaction with patients. In addition, it appeared that nurses needed knowledge about specific guidelines [25], which could further appear as a barrier to health promoting work. This indicates that it may be challenging for nurses to communicate with patients when the conversation regards treatment outside the primary treatment, and that it potentially could cause nurses to avoid taking the initiative to talk to their patients about CM´s.

Pre-understanding

Discussing the meeting between nurses and patients participating in interventions, pre-understanding appears as a barrier in the implementation of CM. If nurses' personal beliefs about an anti-inflammatory and plant-based diet are adverse it may have a negative impact on the support for participating patients. The negative pre-understanding might contribute to patients having a greater tendency to drop out if they are receiving biased or insufficient support. The pre-understanding might change if nurses gain knowledge about the advantages an anti-inflammatory and plant-based diet may have on patients. Furthermore, it appeared that nurses wanted to receive knowledge which could give them a feeling of being well-prepared and possibly have a useful impact on their pre-understanding, which is why this is an important element in achieving a successful implementation.

Nurses perceived lack of time as a factor that could also affect the implementation of CM. Lack of time was considered a main barrier as the setting decides how much time nurses have for their work. It is pointed out that lack of time can be a barrier for nurses to focus on other things than the primary medical treatment and that health promotion measures were deprioritized when nurses fell a time pressure.

Motivation

From the interviews it appeared that some nurses find motivated knowing they are contributing to developing more evidence-based knowledge. They were all further motivated by the fact that they could gain more knowledge to support their patients in the long term and that their patients might experience getting better over time. It thus emerged that a draft for change which could facilitate the implementation of an intervention would be if nurses gain knowledge and receive relevant material they can use in the interaction with patients. Nurses would also be motivated by the experience of having a defined role in relation to support the patients who are a part of an intervention and therefore, this should be a focus to ease the implementation of CM. Other studies have shown that nurses were motivated by providing a positive attitude towards the intervention and that their own lifestyle and beliefs had an impact on that attitude [6,7,22,24]. The different experiences among nurses internally might however be an issue in implementation of new measures, since it could be challenging to put down old habits and difficult to achieve consensus towards new practices.

The nurse-patient relationship

Visual material might facilitate the conversation regarding interventions between patients and nurses and it appeared that the relationship between patients and nurses also could ease the implementation. Nurses expressed awareness that they have a habit of focusing on their preconception of what would be the patients' perspective, and the way the intervention might affect the patients is of great importance of how nurses experience the intervention. Other studies support these findings, and it emerged that a good relationship between patients and nurses is a facilitator in physical activity and behavior changes in patients [7,22].

Professional experience

Nurses experienced a challenge to wean off old habits when new measures are to be implemented. This indicates that professional experience may to some extent appear as a barrier in the implementation of new interventions. As a facilitator to the implementation of an intervention with CM, the nurses consulted the fact that an intervention would contribute to knowledge they could use in the support of patients as a facilitation thing. It was important for the nurses that guidance was built up by knowledge combined with experience which made knowledge a facilitator for implementation of an intervention.

Proposals for measures

The participants suggested that access to specific information material would make them feel well-informed about the intervention. Furthermore, nurses were keen on having a contact person as they can turn to if they are in doubt about something, and vise-versa, a contact person among the nurses for the intervention team to make sure information is distributed. In relation, nurses would like to gain knowledge about, in this case, the anti-inflammatory and plant-based diet, they want to taste it and see a diet plan. Other studies found that information material [21,22] knowledge about nutrition [4], training courses and scientific articles [23], were suggestions to how an intervention could be initiated under the best terms. In addition, studies showed that an app used to visualize food and drinks could appear as an initiative that may also have positive effects in the implementation of an intervention with a dietary focus. Therefore, a digital platform could also appear as a facilitator

to ease the implementation of an intervention [26].

Strengths and limitations of the work

Four of the focus group interviews were conducted face-to-face while the last one was conducted online through Microsoft Teams. During online interviews, there is a possibility of encountering technical difficulties [27], and in the interview, there were challenges with degraded sound affecting the recordings. However, utilizing both online and face-to-face interviews offered significant benefits. This approach enhanced data collection by providing a wider geographical reach, allowing for the inclusion of participants from various settings across Denmark.

During one of the focus group interviews, one of the participants exhibited a dominant presence and conveyed a pessimistic stance towards plant-based diets. This perspective potentially influenced the other participants in the discussion and required the moderator to play a crucial role. It was essential to facilitate the group conversation, ensuring that everyone's opinions were heard and allowing for the exploration of nuanced perspectives within the interview.

This study only sought the perspectives of nurses, which could be considered a limitation because it makes it difficult to obtain a representative and balanced interprofessional perspective. The nurses themselves pointed out the importance of including views from physicians and dietitians in future work, as they may also impact patients' motivation towards the dietary intervention.

CONCLUSION

The study has found clear barriers and facilitators among nurses to be considered when implementing complementary medicine interventions for patients, as these factors may potentially impact patients' compliance. Some of these concerns were directly associated to the example given with an anti-inflammatory and moreover plant-based diet, while others were more general. Additionally, this study concludes that there are several suggested measures that may contribute to creating favorable conditions during the implementation process. Clinical trials of novel plant based dietary interventions for patients with Crohn's disease may fill the gap of knowledge and need for evidence found among nurses in this study. Before these interventions take place, this study however highlights the need for including the clinical nurses in the preparation phase of the studies, providing early sufficient information, printed material and a direct connection to the research team.

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CONFLICT OF INTEREST STATEMENT

All authors declare no conflict of interest to this study.

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