Nudging study

A verbal encouragement to increase protein consumption

among hospitalized patients

MSC Thesis

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Abstract

Background: Studies have repeatedly shown that when you are ill, your body needs additional nutrients for recovery. In particular, proteins are of great importance in recovery. However, recent studies are showing the prevalence of protein-energy undernutrition in hospitalized patients. Several interventions have been proposed to increase the protein intakes among hospitalized patients. For instance, educating patients by giving them information about the benefits of proteins through leaflets, or personal talks and nutritional counseling by dieticians. The solution for improving protein intake among hospitalized patients, while still giving them a free choice, could lie in the field of nudging. The essence of nudging is to adapt the environment in which consumers make decisions to help them make better choices, without forcing certain outcomes upon them. Recently, more attention has been focused on the nudging technique verbal prompting. A verbal prompt is a suggestion for a product which increases the likelihood that they choose that specific product. An example of a verbal prompt is asking the question; ''do you want fries with your order?'' Combining feedback and social reinforcement, such as praise, with a verbal prompt might lead to even higher compliance behavior, while people are more likely to comply with a friendly person. The current research aims to examine the effect of a verbal prompt and praise on protein orders of hospitalized patients.

Methods: Both a field study and a survey among hospitalized patients were conducted. The experiment took place in a medium sized hospital in the Netherlands, which allows patients to order food via telephone. Data were collected during lunch orders (N=668). Five telephone operators were used to carry out 3 different conditions, (1) a control condition, (2) a verbal prompt condition, and (3) a verbal encouragement condition (verbal prompt + compliment). The verbal prompt which was used in this experiment was; ''would you like to have fruit quark/yoghurt drink with that order?''. The compliment was about one healthy product the patient just ordered. The questionnaire was conducted among 130 patients, and contained questions about how patients had experienced the telephone call. The questionnaire mainly consisted out of statements to measure five constructs.

Results: The results of the field study showed that the average orders of fruit quark and yoghurt drink were higher in the prompt condition (47.8%) compared to the control condition (18.9%). Also, more proteins were ordered in the experimental conditions (mean > 25.8 grams of protein) compared to the control condition (mean = 23.2 grams of protein). However, the difference between the prompt and compliment condition was not significant. The survey showed that only 50% of the participants noticed the compliment. The differences for the prompted products per condition could not be explained by the different constructs.

Conclusions: Overall, results suggest that prompting patients towards protein products can increase patients' protein ordering. However, the use of positive feedback is not proven to be effective in increasing the compliance with a verbal prompt.

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1. Introduction

A good diet and a healthy lifestyle are important for both healthy and sick people. Nowadays, in health related research, a lot of emphasis is placed on the health risks of overnutrition, such as obesity. However, the health risks of undernutrition deserve an equal amount of attention. Undernutrition is a state of energy, protein or other specific nutrient deficiency which can lead to worse outcome from illness as well as being specifically reversed by nutritional support (Allison, 2000). Undernutrition is for instance affecting hospitalized patients, for example hospital stay, is significantly longer for malnourished patients which results in higher treatment costs, than for well-nourished patients (Norman et al., 2008).

Studies have repeatedly shown that when you are ill, your body needs additional nutrients for recovery (Norman et al., 2008). It is important to eat well, both when facing a chronic disease, and before or after a surgery. Hence, nutrition is an essential part of every therapy, given that well-nourished patients respond much better to surgery and heal more quickly than malnourished patients (Werbach, 1988). In particular, proteins are of great importance in recovery of wound healing, after an injury or surgical intervention (Arnold & Barbul, 2006; Albina, 1994). However, recent studies are showing the prevalence of 'protein-energy' undernutrition in hospitalized patients (Corish & Kennedy, 2000). Therefore, the importance of protein-energy nutrition for hospitalized patients is winning increasing attention.

There are several ways to increase the protein intakes among hospitalized patients. For instance by educating patients about health risks of nutritional deficits, and/or the positive effects of protein intake. This can be done by giving patients information about the benefits of proteins through leaflets, or personal talks and nutritional counseling by dieticians. Another way to increase the protein intake is through protein pulse feeding, which are plant based foods containing proteins (Arnal, et al., 1999), or medical interventions such as tube feeding (Bastow, Rawlings, & Allison, 1983) whereby food is administered to patients intravenously. As a result, the protein level of patients can be monitored easily and adjusted when necessary (Bouilanne, et al., 2013). However, a downside of such interventions is that patients do not have a free choice. In addition, Quill & Brody (1996) suggesting that there needs to be a balance between physician power and patient autonomy.

The solution for improving protein intake among hospitalized patients, while still giving them a free choice, could lie in the field of nudging. The definition of nudging is; ''any aspect of the choice architecture that alters people's behavior in a predictable way without forbidding any options or significantly changing their economic incentives'' (Thaler & Sunstein, 2008). A simple nudging example is closing the lid of an ice cream freezer in a lunchroom of an elementary school, which leads to a (16%) decrease in ice cream consumption (Just & Wansink, 2009). Using this nudge, school children could still choose to buy ice cream, but by closing the lid the default option was shifted to healthier alternatives. The idea is to guide choices in a way that is subtle enough that people are unaware of the mechanism. Nudging interventions could be a way to guide patients in making the right choice (i.e. protein intake), while still having a free choice. An experimental setting is needed in order to investigate nudging techniques which increase protein intake among hospitalized patients.

Hospital ‘De Gelderse Vallei’ in Ede, the Netherlands, is known as a nutrition-specialized hospital and is hence an ideal context for an experimental setting to increase protein intake. As a result of their nutrition-specialization, the hospital uses a special food ordering system in collaboration with Sodexo, the food servicing corporation in the hospital. This ordering system is called ‘At Your Request’ and is similar to hotel room service. Each patient has a menu card in their room which allows them to order as much food as they want (as long as it fits on the tray), and when they want (Sodexo, 2011). The order is handled by a telephone operator which also gives some personal advice regarding diet and/or nutritional value, allowing patients to make tasty and responsible choices. Furthermore, the order is made fresh, directly after the order is placed, so food waste is reduced to a minimum (De Gelderse Vallei, 2012).

The *At Your Request* system provides many opportunities to apply nudging interventions. Especially the nudging technique ‘verbal prompting’ is well-suited for this ordering system. This technique has its origin in suggestive selling, a sales promotion strategy where potential buyers receive a suggestion for an additional product. The idea behind this technique is that such suggestions (i.e. verbal prompts) refer to latent needs in a consumer, which motivates them to purchase the suggestion (Rosenberg, 1995; Polonsky et al., 2000; Kizer & Bender, 2007; Söderlund, 2013). This technique is quite common in the retail business to increase sales, usually implemented in the context of customer-oriented selling (Pettijohn et al., 2002; Rohn et al., 2003), but is also used in other sectors such as financial services and catalog marketing (Ebster, Wagner, & Valis, 2006). The advantage of such interventions is that they do not have to cost a lot of time and money to implement (Milligan & Hantula, 2006). An example of a verbal prompt is asking the question ‘’do you want product X (e.g. fries) with your order?’’. By just asking this question, people may feel obliged to choose the suggested product (Ebster et al., 2006). In addition, the use of verbal prompts has been successfully applied in different settings to get people comply with certain behavior; it increased blood donations (Ferrari, Barone, Jason, & Rose, 1985) and encouraged drivers to wear seatbelts (Engerman, Austin, & Bailey, 1997).

Combining feedback and social reinforcement with a verbal prompt, such as praise, might lead to even higher compliance behavior. Instead of asking somebody to perform a certain behavior (e.g. to order a product), giving praise is about influencing someone’s motivation to perform certain behavior, by addressing someone’s personal success (e.g. ‘’good job, you are so smart’’) (Zentall & Morris, 2010). To give an example, praise is used to motivate school children to enhance their performance (Henderlong & Lepper, 2002), but is also used to motivate adults in attendance and work efficiency (Silva, Duncan, & Doudna, 1981). We define this combination of verbal prompt and praise as verbal encouragement.

The current research aims to examine the effect of a verbal prompt and praise on protein orders of hospitalized patients. This will be done by means of a field experiment in a hospital setting by looking at 3 conditions; (1) a control condition (looked at what patients normally order), (2) a condition with a verbal prompt towards a protein product, and (3) a condition in which patients get positive feedback before the verbal prompt. In order to investigate this, telephone operators of hospital ‘De Gelderse Vallei’ will be prompting patients during lunch orders using the sentence ‘’would you like to have fruit quark with your order?’’. In addition, telephone operators will give praise using a sentence of the form: ‘’good that you ordered a salad on the side’’.

The findings of this research could help hospitals in developing the right strategy to increase protein consumption of hospitalized patients, resulting in a more balanced diet and faster recovery process. If the proposed strategy works, it might also be applicable for other products in the hospital context (e.g. prompting patients towards perishable goods in order to prevent food wastage).

2. Theoretical background

We build our research assumptions on the nudging and praise literature. The key elements of these theories will be described.

2.1 Nudging

Nudging is an intervention method that uses contextual factors as a strategical benefit, and does this by reshaping the environment where people make their food decisions (Marteau, et al., 2011). The idea is that people may not notice a nudge, so it has to be a subtle change, while at the same time people still have the same choice options. For example, placing healthy snacks at eye level is a nudge, but banning unhealthy snacks is not (Thaler & Sunstein, 2008). In other words, nudging interventions are a way to guide consumers behavior to be better off without necessarily restricting their choices (Thaler & Sunstein, 2003). Nudging is sometimes referred to as 'a gentle push into the right direction'; therefore the actual decision should still be their own choice (Marteau et al., 2011; Van Kleef et al., 2012).

Researchers in the field of thinking widely embrace the idea that two cognitive systems, generally called intuition and reason, can be distinguished in information processing and decision-making (Evans, 2008; Kahneman, 2011; Sloman, 1996). The idea behind these two systems is that the human memory has two conflicting demands that are functionally incompatible (McClelland, McNaughton, & O'Reilly, 1995; Sherry & Schacter, 1987). System 1 is the primitive system which gives intuitive answers based on familiar patterns (Kahneman, 2011). It prefers the world to be linked and meaningful, which makes people look for cause-and-effect explanations. For instance, when somebody is attractive, people also tend to think that that person is smart. This is called the 'halo effect' (Nisbitt & Wilson, 1977). This is similar to when you only hear a part of a story. System 1 presumes that you have got the whole story and fills in the missing pieces. The processes in System 1 are fast, without much effort and occur unconsciously (Kahneman, 2011). It is also referred to as the experiential (Epstein, 1994), associative (Smith & DeCoster, 2000) or automatic system (Schneider & Shiffrin, 1977). In contrast, System 2 takes more effort. It involves the capacity for self-regulation by abstract reasoning and hypothetical thinking (Evans, 2008). System 2 thinking is slower and uses the working memory to learn and reason and therefore requires intense focus (Kahneman, 2011). It is also referred to as the rational (Epstein, 1994), rule based (Smith & DeCoster, 2000) or controlled system (Schneider & Schiffrin, 1977). These two systems form the core of dual process models of decision-making (Evans, 2008; Smith and DeCoster, 2000; Strack, Werth, & Deutsch, 2006).

Many researchers have emphasized the fact that unconscious processes may control our behavior without us being aware of them doing so (Nisbett & Wilson 1977; Wason & Evans, 1975; Wilson & Dunn, 2004). Nudging uses this knowledge as a strategical benefit, by operating through our automatic system using contextual factors (Marteau et al., 2011). While people generally acknowledge that environmental cues influence others, they often wrongly believe that they are unaffected (Wansink, Kent, & Hoch, 1998). This suggests that there are influences at a basic level of which people are not aware of or do not monitor (Wansink, 2004). Consumers who are driven by automatic thinking modes are therefore much more susceptible to environmental cues signaling

indulgence, than consumers who are driven by rational decision making (Wansink, 2004). This is also the case for many food related activities, such as choosing foods in a restaurant or store.

2.2 Verbal prompt

A verbal prompt is also a nudging technique which targets our automatic thinking. It originates from suggestive selling, which is used in many sales related practices such as restaurants (e.g. waiters explaining the specials of the day (Knutson, 1988), or asking if people would like wine with their meal (Ebster et al., 2006; Martinko et al., 1989). A verbal prompt, for instance made in a fast-food restaurant setting (e.g. ''would you like to have fries with your order?''), is a cue where people are not aware of, especially because the question seems logical (Ebster, Wagner, & Valis, 2006). Such interventions make it easier for the customer to determine what to choose (Knutson, 1988).

Verbal prompts have also been used in many health related studies, for instance in encouraging fruit consumption among school children. In one of the studies, school children got a verbal prompt towards fruit, during lunch orders (Schwartz, 2007). For this study, cafeteria workers prompted the children with the sentence ''Would you like fruit or juice with your lunch'', which lead to an increase of fruit ordering of at least 30%. Nearly 90% of the children took a fruit serving in the intervention condition, compared to 60% in the control condition. Also, the fruit consumption increased with 30%. Nearly 70% of the children consumed their fruit in the intervention condition, compared to less than 40% in the control condition. In conclusion, a simple verbal prompt towards healthy products appears to have a significant impact on the likelihood that people (in this case children) will take, and subsequently consume, the prompted product.

The background of verbal prompts lies in the operant psychology, which stresses that information processing and decision-making are influenced by environmental cues. The ABC-model demonstrates that antecedent stimuli (A) trigger certain behavior (B), which will be followed by either positive or negative consequences (C) (Ebster, Wagner and Valis, 2006). When consequences are evaluated positively, certain behavior will be repeated in the future, and when behavior leads to negative consequences, the likelihood of recurrence will decrease. This phenomenon is described by (Thorndike, 1911) as the 'law of effects'. Verbal prompts are a special type of antecedent stimuli, which can be seen as supplemental stimuli that will help to initiate a desired behavior (Touchette & Howard, 1984).

2.2.1 Helpfulness

One of the underlying explanations of verbal prompts lies in an increased accessibility of attitudes, behaviors or concepts in the mind of the consumer by simply asking a question (Sprott et al., 2006). This is called the question-behavior effect. By asking a question one may remind people that the suggestion is actually a good idea and that people have a need that they were not aware of (e.g.''do you want something to drink with that order?''). Asking a question is a good example of a 'gentle push' into the right direction, while you are helping the consumer to complete their order or to make the right choice. A big advantage is that asking questions will not only influence accessibility in the mind of the consumer, but also the future performance of targeted behavior (Spangenberg, Greenwald, & Sprott, 2008). Multiple studies, including telephone and face-to-face surveys, have

demonstrated question-behavior effects on behavior such as recycling, voting, and charitable donations (Spangenberg et al., 2008).

2.2.2 Obtrusiveness

Because verbal prompts are used in many sales contexts, (e.g. fast-food restaurants; ''would you like to have mayonnaise with your fries?'') people are getting used to it (Ebster, Wagner, & Valis, 2006). However, there are also studies who assume that suggestive selling could be seen as obtrusive by customers (Corsun, McManus et al. 2007; Radin and Oppenheimer, 2002;). Because we live in a demand-driven economy, most people know what they want, and when they want it (Corsun, McManus, & Kincaid, 2007). For example, people who bring shopping lists into a store already have an idea what to buy. Verbal prompting them to buy extra products can be seen as annoying, unwanted or even suspect (Radin and Oppenheimer, 2002).

2.3 Research on the effects of praise

Another way wherein people can be motivated to perform a certain behavior, such as complying with a request, is by using praise. Especially feedback statements that provide competence-enhancing information seem to be efficient forms of praise (Boggiano & Ruble, 1979; Harackiewicz, 1979; Pretty & Seligman, 1984; Ryan, Mims, & Koestner, 1983; Sansone, 1989). Seiter (2007) found out that waiters complementing customers got significant higher tips, than when not complimenting them (e.g. ''you made a good choice''). Recent studies also shown that compliments have a positive effect on compliance behavior with a request (Gueguen et al. 2014). Purchase behavior can also be influenced by making complements, from buying foods to household goods. Dunyon et al. (2010) found that sales persons sold more add-on merchandize when complimenting their customers than when not doing so.

Praise is different from simple acknowledgment and feedback (e.g. ''that's right''), which are more neutral forms of recognition, and is also distinct from encouragement (e.g. ''you can do it!''), which is more future-focused than praise and often is used in response to negative performance outcomes (Catano, 1975). Praise is targeting people's motivation because it refers to someone's internally driven engagement which is related to achieving a particular goal (Henderlong & Lepper, 2002). In addition, internally driven engagement is associated with a host of positive outcomes such as creativity, persistence, and life-long learning (Catano, 1975), which are essential elements in behavioral change. Many studies have indicated that people's intrinsic interest in a given activity can be affected by extrinsic rewards such as praise (Blanck, Reis, & Jackson, 1984). Researchers, educators, and parents believe that praise routinely enhances intrinsic motivation (Anderson, Manoogian, & Reznick, 1976; Deci, Koestner, & Ryan, 1999; Eisenberger & Cameron, 1996).

In light of education, we as a society seem to believe that praise is an effective way to motivate people. For example, we praise children from a young age for their accomplishments to enhance their motivation and boost their self-esteem (Henderlong & Lepper, 2002). A relatively small amount of praise can already influence young children's motivation (Cimpian, Arce, Markman, & Dweck, 2007, Kamins & Dweck, 1999; Mueller & Dweck, 1998). Moreover, praise is not only useful in motivating children, but also recommended for adults. One of the keys in winning friends and influencing people is to praise abundantly (Carnegie, 1938).

2.3.1 Friendliness

One of the effects of getting a personal compliment is that the compliment giver is seen as more friendly. In the field of persuasion, the relationship between buyer and seller is of great importance, especially when it comes to compliance with the seller (Cialdini & Goldstein, 2004). Although such a relationship is not a 'real' relationship, a buyer still has to make a good impression on the buyer in a short notice. In making a good impression, and establishing a quality relationship between buyer and seller, friendliness can help, because people have the desire to affiliate with others (Cialdini and Goldstein, 2004). Moreover, people in relatively higher-quality relationships tend to exhibit more friendliness, and therefore more compliance behavior and trust, than people in lower-quality relationships (Jap et al., 1999). Furthermore, in relation to compliance, the social influence literature shows a positive relationship between our fondness for a person and the likelihood of compliance with his or her request (Cialdini & Trost, 1998). This suggests that people might comply easier with a request when it is made by a friendly person.

2.3.2 Self-efficacy

Another effect that can result from praise is in an increase in self-efficacy for the compliment receiver, which refers to the feeling or belief that one is capable to achieve particular outcomes (Henderlong & Lepper, 2002). Basically, it concerns the answer to the question; ''Can I do this task in this situation?'' (Linnenbrink & Pintrich, 2003). The concept of self-efficacy is often referred to in studies on learning (Margolis & McCabe, 2006), and is linked to adaptive coping behavior, effort expenditure, and success (Bandura, 1982). Although self-efficacy is strongest when it arises from one's own accomplishments, verbal persuasion such as praise can be used to convince people to believe in their capabilities to produce given attainments, which should, in turn, enhance self-perceptions of efficacy (Bandura, 1977).

2.3.3 Self-concept

Self-knowledge or self-concept, is a powerful regulator of behavior, which refers to the awareness of one's thoughts, desires and behaviors (Markus, 1977). We can enhance our self-concept in many ways, for instance through the consumption of goods (Grubb & Grathwohl, 1967). Levy (1959) argues that consumers are affected by the symbols encountered in the identification of goods in the marketplace. Consuming certain goods can become part of their identity (e.g. ''I am a healthy eater''). Praise also has an effect on one's self-concept. Giving a compliment about one's healthy choice, not only might boost their self-esteem, but also their 'healthy eater concept'. In relation to praise, people generally have greater preference for information which is in line with their self-concept (Bargh, 1982) and are therefore more inclined to behave in line with corresponding behavior (Kendzierski & Whitaker, 1997). So, if somebody sees him/herself as healthy, and you make a compliment about his/her healthy choice, he/she will be more inclined to make a healthy decision.

2.4 Hypotheses

The theoretical background suggests that the use of verbal prompts increases the likelihood that people comply with a request. Since verbal prompts have been effectively used in many practices, this might be a good method to increase the protein consumption among hospitalized patients. We expect that prompting patients towards protein products in the hospital context will also have positive results, which lead to the following hypothesis:

H1: The use of a verbal prompt towards protein products (i.e. fruit quark/yoghurt drink) will lead to an increase in protein consumption among hospitalized patients.

Taking the effects of praise and the underlying processes into account, we expect that positive feedback in combination with a verbal prompt will lead to an even higher likelihood of compliant behavior. This leads to our second hypothesis:

H2: The use of positive feedback will increase compliance with a verbal prompt.

2.5 Theoretical model

In figure 1 and 2 we give an overview of the theoretical model that we have derived from the available literature.

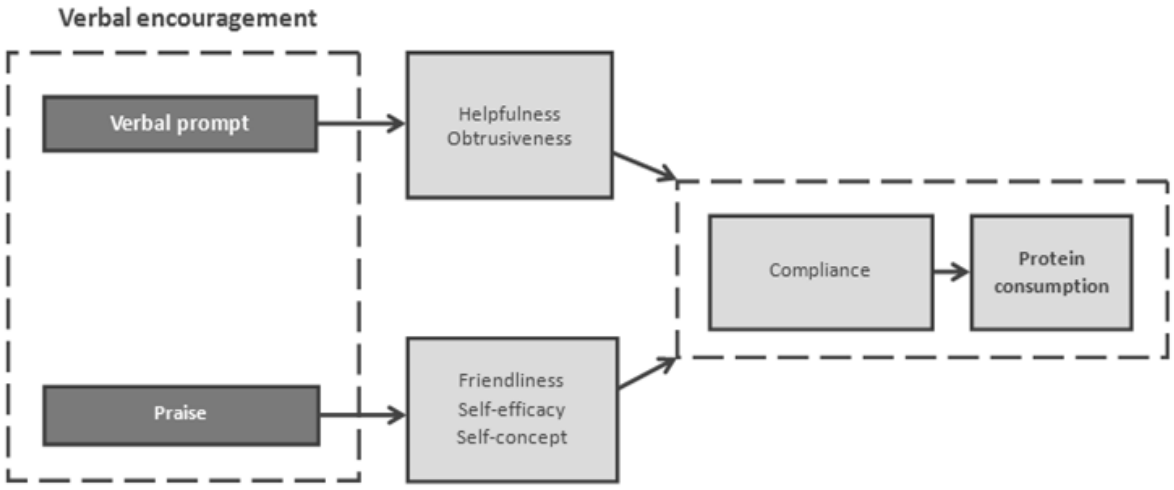

Figure 1: Theoretical overview

3. Methods

3.1 Participants

All patients who placed a lunch order using the 'At Your Request' ordering system were potential participants for this study. A total of 668 orders were registered during the experiment. Patients did not receive an intervention from the telephone operators (1) when they had a protein restricted diet (N=15), (2) when their order was placed by a healthcare employee or visitor (N=327), or (3) when they were aged under 18 (N=6). From the 668 orders a total of 320 patients received interventions (47% male, 53% female, with mean age = 60). Patients who were part of the general experiment were not informed about this research because this could have influenced the results.

3.2 Design and procedures

Design

We conducted a 3-week field experiment in hospital 'De Gelderse Vallei' Ede (The Netherlands). The field experiment was executed during fourteen weekdays, over a period of three weeks. Five telephone operators were involved to deliver the interventions. Each day we used one telephone operator and tested one of three conditions. Each telephone operator performed all three conditions in a sequential order to reduce the probability that the telephone operators mixed up the different conditions (e.g. give a verbal encouragement in the control setting). In addition, by alternating the conditions over the days of the week, we tried to reduce external influences to a minimum (e.g. weather conditions). Part of this field experiment was a survey amongst some of the patients to get further insight into the underlying mechanisms of this research. Ethical approval was received from the Research-unit of 'De Gelderse Vallei'.

Procedures

Data were collected during the first three weeks of June 2014, roughly between 10.30 am and 1.15 pm, when the lunch orders come in. Each day, before starting the data collection, the telephone operator we used for that specific day was given instructions. We talked them through the specific condition they would use that day and provided them with handouts (see appendixes 1 - 9) when necessary. During the experiment we sat near the telephone operator with a checklist for registration of data that would no longer be available after the call ended (e.g. whether patients or someone else called, and if the telephone operator correctly provided the prompt and the positive feedback). The checklist can be found in appendix 13. Depending on the experiment day, the telephone operator executed one of three conditions. Condition 1 consisted of the usual telephone script, without verbal prompt or praise (see appendix 3), also called our control condition. This condition was used as a baseline measure. In condition 2, telephone operators were asked to give a verbal prompt to patients by suggesting one of two protein products (fruit quark/yoghurt drink). In condition 3, telephone operators were asked to give patients a compliment based on their order (personal feedback), followed by the same prompt as used in condition 2. The three conditions were tested in a pilot study and adjusted where necessary.

In order to get additional information from the respondents, a selection of the participants was visited in the afternoon. We asked patients to fill in a questionnaire about the telephone call they made earlier that day (see appendix 12). Filling in the questionnaire took about five minutes. Before patients filled in the questionnaire, they got some information about the study (see appendix 10). In total, 130 patients (40.6% of the total sample) completed the questionnaire and gave informed consent (see appendix 11).

3.3 Intervention methods

Verbal prompt

The verbal prompt which was used in this experiment was ''would you like to have fruit quark/yoghurt drink with your order?''. The recommended product (fruit quark or yoghurt drink) was chosen in consultation with the dieticians of hospital 'De Gelderse Vallei'. Telephone operators were instructed to always prompt patients towards fruit quark, except when patients already ordered something similar to a desert; then they should prompt patients towards yoghurt drink. Telephone operators were not allowed to prompt patients towards both products (e.g. when somebody was prompted towards fruit quark, and the patient said ''no'', the telephone operators were not allowed to then prompt patients towards yoghurt drink as well). When a patient accepted or turned down the offer, the intervention was done. Telephone operators were instructed to deliver the verbal prompt, after they repeated patients orders (almost at the end of the conversation). When somebody already ordered a dessert and multiple drinks, we advised to not deliver the verbal prompt (otherwise the suggestion for an additional protein product would have been too much, and would exceed a nudge).

Compliment

We instructed the telephone operators to provide patients with subtle and short personal feedback about a healthy product the patients had ordered (see appendixes 7-9). For example, when a patient ordered a biscuit with cheese, the telephone operators could give a compliment about the cheese like ''You made a good choice by ordering 'cheese' with your biscuit''. Immediately after a compliment was given, the telephone operator had to deliver the verbal prompt. In cases where patients just ordered less healthy products (e.g. soda with deep fried snacks) or placed a small order (e.g. orange juice with a sandwich) the telephone operators were instructed to not give a compliment.

3.4 Order data

The actual ordering data were gathered by Sodexo, the company who facilitates the At Your Request system. From the order data, three measures of protein consumption were derived at an individual level: (1) the amount of protein (in grams) of the entire lunch order, (2) the amount of protein ordered over the whole day, and (3) the presence of an order of quark.

3.5 Survey

All patients who ordered their lunch via the telephone operator we used for that particular day were approached to fill in the survey, 232 patients in total. We asked them to fill in the questionnaire, which took about 5 minutes.

The questionnaire contained questions about how patients had experienced the telephone call, and a measure to check whether patients actually had consumed the prompted product. Patients evaluated the telephone call by rating their agreement with 19 statements on a 5 point Likert scale, with anchors 1 (strongly disagree) to 5 (strongly agree). These statements were used to measure 5 different constructs: helpfulness, perceived obtrusiveness, friendliness, self-efficacy, and self-concept. Helpfulness was measured by three items (questions 7, 13, 16), e.g. 'The telephone operator was helpful by giving suggestions'. Perceived obtrusiveness was measured by four items (questions 3, 8, 9, 20), e.g. 'The telephone operator was pushy by giving suggestions'. Friendliness was measured by three items (questions 2, 12, 19),: e.g. 'The telephone operator was kind'. Self-efficacy was measured by three items (questions 6, 10, 14),: e.g. 'I am proud on the choices I made'. Self-concept was measured by three items (questions 5, 15, 17),e.g. 'I am a healthy eater' (see appendix 12).

Two questions were included whereby participants could indicate to what degree they finished their lunch order and, if applicable, the prompted product. Response options ranged from, 1 (did not eat anything) to 5 (ate all of it).

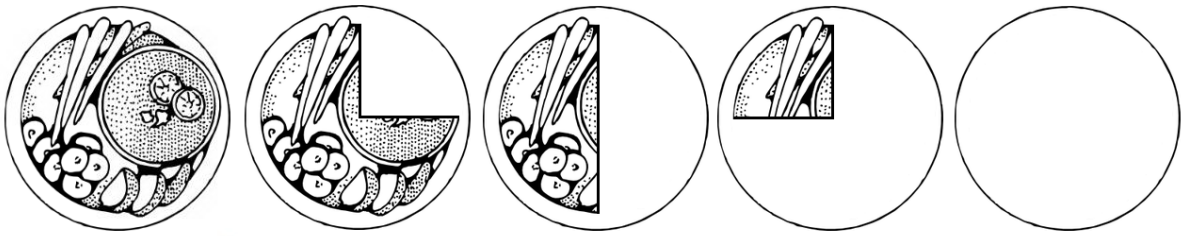

Figure 2: Consumption scale used in survey

In addition, eight questions were used to measure how often patients ordered lunch during their total stay in the hospital (answer categories; once, 2-6 times, 7-12 times, more than 12 times), whether they had noticed receiving a compliment, whether they noticed that the prompted products were on the menu, whether they had noticed receiving a prompt, and if they ordered the prompted product.

3.6 Data analysis

Invalid cases

From the checklist (N=647), order (N=668) and survey (N=130) data, patients were identified as invalid cases when they (a) did not get the prompt (N=39), (b) when telephone operators prompted an alternative product (i.e. fruit yoghurt or custard, instead of yoghurt drink) (N=3), or (c) delivered the prompt in a different format (e.g. ''Can I offer you something else, maybe some quark for instance'') (N=7) the specific telephone call was excluded from our data analysis. When (d) the telephone operator mixed up the sequential order of the conversation (e.g. first delivered a verbal prompt followed by a compliment, instead of the other way around) (N=1), or (e) when they gave a non-specific compliment (e.g. ''good that you ordered that'') the specific telephone call was also excluded from our data analysis (N=2). In the compliment condition, patients were excluded when patients (f) did not receive a compliment (N=33), (g) received a wrong compliment (N=3), or (h)

already participated in the study (N=30). Invalid cases were excluded from further analysis and the final dataset included 232 respondents. Within this dataset, 113 participants filled in the survey.

Order data

Because the order data (N=232) were binary, a nonparametric Kruskal-Wallis test was used to examine the relationship between 'condition' and 'ordering the prompted product'. The key dependent variable in this study was if the patients ordered the prompted product (fruit quark/yoghurt drink), coded as 1 if patients ordered the prompted product and 0 if they did not order the prompted product. The variable 'condition' was used as the independent variable, with three levels; (1) control (2) suggestion (3) compliment. An analysis of variance (ANOVA) was conducted to look at effects of condition on protein consumption, with protein consumption as dependent variable and condition as independent variable.

Survey data

Factor and reliability analyses were conducted to see whether the questionnaire items reliably formed the 5 hypothesized constructs (helpfulness, obtrusiveness, friendliness, self-efficacy, and self-concept). A Principal Component Analysis with a Direct Oblimin (Oblique) rotation with Kaiser Normalization (KM0 = .639) of 19 Likert scale questions from the survey was conducted. Only 12 items loaded onto the factors as expected. As a result, the factor analysis yielded 3 constructs instead of 5. Based on the content of these items we named the associated constructs; helpfulness, obtrusiveness, and self-concept. The remaining scales each had a reliability of $\alpha = .590$ or more. For an overview of all the items and corresponding reliability values see appendix 14.

All analyses were performed using SPSS statistical software (SPSS version 20.0.0 SPSS Inc., Chicago, IL, 2011).

4. Results

4.1 Prompt ordering

The nonparametric test showed that there was a statistically significant difference between conditions in the number of patients that ordered the prompted product, χ^2 (2) = 30.905, p < .000. Follow-up tests were conducted to evaluate pairwise differences among the three conditions, controlling for Type 1 error using Bonferroni correction. Bonferroni adjusted alpha levels were .01667 (.05/3). Results indicated that the average number of prompts ordered was significantly higher in the experimental conditions (81.1%) than in the control condition (18.9%), p = .000, which confirms the first hypothesis (table 2). However, the prompt condition (47.8%) did not differ significantly from the compliment condition (33.3%), p = .661, which rejects the second hypothesis.

4.2 Protein consumption

Proteins per lunch order

An analysis of variance showed a marginally significant effect of condition on protein ordering during lunch F(2,229) = 2,884, p = 0.058. Pairwise comparisons showed that more grams of protein were ordered in the experimental conditions (mean > 25.8) than in the control condition (mean = 23.2, SD = 12.5), p = .000, which confirms the first hypothesis (table 2). Again, the prompt condition (mean = 25.8, SD = 13.9) did not differ significantly from the compliment condition (mean = 28.5, SD = 13.7), p = .768, which rejects the second hypothesis.

Proteins per day

An analysis of variance showed a significant effect of condition on protein ordering per day F(2,229) = 5,369, p = .005. Pairwise comparisons showed that more grams of protein were ordered in the experimental conditions (mean > 30.7) than in the control condition (mean =26.2, SD = 15.3). However, this result was not significant, p = .174. Also, the prompt condition (mean = 25.8, SD = 13.9) did not differ significantly from the compliment condition (mean = 28.5, SD = 13.7), p = .486.

Table 1: Order differences for the three conditions

	Control (N=107)	Prompt (N=75)	Compliment (N=50)	P values
Number of prompts ordered	13	33	24	-
% prompt ordered within the condition	12.1%	44%	48%	-
% prompt ordered of total (=100%)	18.9%	47.8%	33.3%	.000
Average proteins per lunch	23.2 grams	25.8 grams	28.5 grams	.058
Average proteins per day	26.1 grams	30.7 grams	34.7 grams	.005
Average calories per lunch	Kcal 546	Kcal 551	Kcal 605	.319
Average calories per day	Kcal 620	Kcal 672	Kcal 744	.082

4.3 Survey

The mean age of the participants that took part in the survey (N=113) was 63 years (SD = 16.7, age range 19–87). Of these participants, 56 (49.6%) were male and 57 (50.4%) were female. The control condition contained 45 (39,8%) participants, the prompt condition 40 (35.4%) and the compliment condition 28 (24.8%). The survey sample was representative of the total sample in terms of age and gender, but not in terms of condition. In the survey sample the number of patients in the compliment condition (N=28) was much smaller than the number of patients in the compliment condition of the total sample (N=50).

The most often mentioned reason for ordering the prompted product (78.8%) or not ordering the prompted product (54.8%), was the taste of the prompted product (table 2). However, the difference between these groups was not significant, p = .198. The reasons; 'the suggestion was a good idea', 'I said automatically yes', and 'I did not want to say no to the telephone operator' were significant with values p < .05. The main effect between the two different groups was not significant, p = .197. The majority of the participants (81.4%) stated that they ate most of it or ate the entire prompted product.

Table 2: Reasons why participants did, or did not order the prompted product

	Did order the prompted product (N=33)	Did not order the prompted product (N=31)	P values
Dependent variable	**Percent**	**Percent**	**Sig.**
I like the taste	78.8%	54.8%	.198
The suggestion was a good idea	57.6%	16.1%	.004
It is good for me	51.5%	29.0%	.304
I felt like it	51.5%	38.7%	.218
I said automatically yes	39.4%	19.4%	.023
I did not want to say no to the telephone operator	18.2%	0 %	.018
I thought it would be too much	0 %	12.9%	.696

The differences for the prompted products per condition could not be explained by the different constructs. Analysis of variance showed no significant difference between conditions in terms of reported helpfulness (p = .922), obtrusiveness (p = .221), and self-concept (p = .829).

We looked at the variable 'noticed a compliment' to gain more insight into why compliments did not improve the likelihood that someone ordered the prompted product. Results showed that only 50% of the participants who received a compliment actually noticed the compliment. However, a nonparametric independent samples test showed that the 14 people who noticed the compliment did not differ significantly in the number of ordered prompts, χ^2 (2) = 74.500, p = .2852.

5. Discussions and conclusions

Discussion

In this paper, we presented a field study combined with a survey that examined the effects of a verbal prompt and a verbal encouragement (prompt + compliment) on patients' protein ordering in a medium sized hospital. The results show that prompting patients towards protein products lead to an increase in protein ordering during lunch and throughout the day. However, the use of a compliment did not increase the compliance with a verbal prompt.

These findings not only expand the current literature, but also help hospitals in developing the right strategy to increase protein consumption of hospitalized patients, resulting in a more balanced diet and faster recovery process.

The current literature provides many examples of successful prompting strategies in different settings (e.g. prompts increased fruit consumption of school children). A possible explanation for the effectiveness of prompting patients in this particular setting (a hospital) could be that money was not an issue in ordering the prompted product. Because the *At Your Request* system provides the opportunity to order food and drinks six times a day, free of charge, patients could have been persuaded easier to add 'additional' products to their meal compared to the situation when they had to pay extra for it. This suggests that providing hospitalized patients with free meals increases compliance towards verbal prompts. In the end, consuming the prompted product is the final goal of nudging patients towards protein products. In addition, patients in this study not only complied easier with a 'free' product , the majority of the patients also stated that they consumed the entire prompted product. To increase the likelihood that patients comply to verbal prompts in a hospital setting, offering free desserts (e.g. fruit quark) might help.

The results also show that the majority of the patients who ordered the prompted product, motivated their choice by stating that they like the taste of the prompted products. While the prompted products were specifically chosen in consultation with the dieticians, this might have increased the likelihood that patients ordered the prompted products, because the dieticians knew that these products were favoured by patients. This strategy could also be used for different purposes in a hospital setting. In this study we used a verbal prompt towards protein products, but perhaps it could also be used for other favourable products (e.g. prompting patients towards perishable goods to prevent food waste). On the other hand, prompting patients might be less effective with less favourable products. So, this has to be taken into account when developing a similar prompting strategy.

As we have seen in the result section, the constructs from our survey could not explain the effects of the prompt and compliment because they did not differ per condition. An explanation could be that patients might have given socially desirable answers in the survey. In addition, the use of Likert scale questions might have contributed to this matter, because in this way the respondents were not forced to take a stand in this particular topic (only respond with agree/disagree). By using Likert scales it is possible that the respondents focussed heavily on one response side, and that they were influenced by previous questions. Future research could investigate other type of answering scales such as the semantic differential where people rate between the connotative meaning of concepts. In this way patients have to choose deliberately for each question.

We also expected that a compliment would increase compliance with a verbal prompt, which was not confirmed by the results. A possible explanation for this finding is that giving personal feedback via telephone might be less effective than giving it face to face.

As a result, the compliment could have been difficult to recognize and therefore too subtle to produce the desired effect. In line with this, only half of the participants noticed the personal feedback. Future research could investigate other intervention methods to increase the likelihood that patients comply with a verbal prompt. For instance, telephone operators could give some information about the importance of proteins (e.g. ''proteins are of great importance in recovery of wound healing, after an injury or surgical intervention'') before prompting them to order a protein product.

Limitations

By using a field study for our data analysis we collected valuable and actionable data which contribute in expanding the nudging literature. However, field studies have more uncontrolled factors than for instance laboratory studies. Therefore, a lot of data from our field study had to be removed in order to make sure that the data were suitable for further analysis. As a result, the eventual sample size was smaller than expected. Although we could not use all the data we gathered, we were still able to get a representative sample of at least 50 respondents per condition (with a total of 232 participants).

Moreover, we used different telephone operators to carry out the conditions. Although we instructed them beforehand, and gave feedback in between when necessary, quite some orders were handled differently as we instructed. These cases were omitted and also contributed to some of our data loss. Hospitals who would like to implement a similar prompting strategy are therefore advised to extensively train their personnel in advance and evaluate in between, to ensure that the telephone operators execute the right prompting format.

Our experiment demonstrated that prompting patients towards protein products lead to an increase in protein orders. However, it remains unclear whether our intervention produced sustained changes in protein consumption, because this was out of the scope of this study. Future research could take this into account by using a longitudinal design, by measuring the same variables over long periods of time.

The social desirable answers we saw in some of the questions in the questionnaire could have been triggered by the way the survey was taken. The researchers were present in the room when patients filled in the questionnaire, and patients could have answered more positively because they did not want to disappoint the researcher. Future research could take this into account by providing the participants with a more anonymous setting (e.g. putting the survey on the service tray and collect them at the end of the day).

A final limitation is that after deletion of the invalid cases the final dataset was smaller than expected. Especially the compliment condition was thinned out, which could have distorted the results of the survey. Future research should take this into account by taking larger samples for the experimental conditions because these had more invalid cases, compared to the control condition. As a result, the different conditions will be more equal in size and therefore better to compare with.

Conclusions

Our results show that prompting patients towards protein products can increase patients' protein ordering. Patients not only ordered the prompted product, the majority (81.4%) also stated that they ate most of it or ate the entire prompted product. In the experimental conditions, the average level per patient was above 25.8 grams of protein, compared to 23.2 grams of protein in the control condition. These results not only expand the scientific literature but also help hospitals, in particular hospital De Gelderse Vallei, in reaching their desired protein level (25 grams of protein per order) per patient. However, the use of positive feedback is not proven to be effective in increasing the compliance with a verbal prompt. A possible explanation is that only 50% of the patients noticed the compliment. More research is warranted to figure out more specifically how compliance with a verbal prompt can be increased, either with a different form of personal feedback or using a different experimental setting. In addition, an interesting topic for further research would involve the identification of the underlying factors that can explain our findings.

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Appendix 1 Stappenplan telefoongesprek AYR

- Neem de telefoon op binnen 2 beltonen
- Zoek op naam > achternaam, meisjesnaam, voorletters, afdeling, kamer, bednummer en/ of geboortedatum
- Open scherm patiëntgegevens > controleer nogmaals afdeling, kamer, bednummer en/ of geboortedatum

  * indien gegevens niet kloppen, onderneem actie, zoals afdeling en kamernummer aanpassen in ander scherm
- Open scherm met voedingsgegevens > controleer dieet, allergie, antipathie, bereidingsmethoden en de notes > gebruik deze info voor advisering/ afhandeling
- Bij aanvraag van koop- en gastmaaltijden>> direct aanmaken en dieet wijzigen
- Neem de bestelling op en voer direct in het scherm MMS
- Adviseer m.b.t. goede voeding/ schijf van vijf/ dieetrichtlijnen/ geef alternatieven/ suggesties.
- Herhaal de bestelling en spreek een uiterlijke tijd af
- Rond het gesprek af met een dank of wens en noem de naam van de patiënt
- Klik de bestelling in het juiste/ gewenste slot.

Algemene do's en don't's

Do's:
- neem binnen 3 beltonen op
- vraag toestemming voordat je een patiënt doorschakelt
- noem de patiënt bij naam, d.w.z. achternaam (dus mevrouw Jansen)
- wees op de hoogte van het menu, de dagspecials, diëten enz. om vragen juist te kunnen beantwoorden
- geef alternatieven, indien gerechten niet geschikt zijn voor het dieet
- lach, wees vriendelijk en positief

Don't's
- val de patiënt niet in de rede
- ga niet in discussie
- jaag de patiënt niet op
- verhef je stem niet
- praat niet te snel

Appendix 2 Uitleg conditie 1 (controle conditie)

Goeiedag,

Zoals je waarschijnlijk wel weet zijn we onderzoekers van de universiteit Wageningen.

Kort voorstellen…

Voor ons experiment hebben we 3 verschillende onderzoeksdagen bedacht om het belscript te testen. Dit is dag 1 van 3. Vandaag noemen we ook wel de controledag. Om er zeker van te zijn dat we straks de juiste dingen meten/vergelijken houden we vandaag dus een nulmeting (deze data kunnen we later vergelijken met de experimentele opzet). We zullen per dag uitleggen wat de bedoeling is en ook kort even oefenen voor we van start gaan.

Hierbij een korte instructie wat we vandaag gaan doen:
Wat we vandaag van je verwachten is heel eenvoudig, gewoon de werkzaamheden doen zoals je die normaal gesproken ook doet, je volgt dus simpelweg het huidige script.

Opmerking
We gaan je niet beoordelen/evalueren, maar willen puur kijken wat patiënten normaal bestellen.

Één toevoeging: voor iedereen die belt voeg je product XXX toe welke je kunt vinden bij de optie ‘afleverlocatie’. Dit is een leeg bestand. Het is de bedoeling dat je altijd locatie "XXX" toevoegt aan de bestelling wanneer wij naast je zitten, zo kunnen we patiënten terugvinden in de data.

Alle andere locaties komen voortaan bij "this meal only"

Even goed om te weten, ik zal naast het gesprek mee turven met een korte checklist voor onze eigen administratie. Bijvoorbeeld wie er belt, op welke kamer die ligt etc. Naderhand gaan we namelijk met een korte vragenlijst langs de kamers om de patiënten zelf nog wat vragen te stellen.

Een afgeschermd deel van de checklist laten zien (niet "compliment" etc.)

Zijn er verder nog vragen of onduidelijkheden?

Appendix 3 Telefoonscript conditie 1 (controle conditie)

Hoofdlijnen gesprek:

1. Groeten
2. Bevestigen naam van patiënt, afdeling, kamernummer, dieet
3. Invoeren keuze volgens script
4. Aanvullen met smaakversterkers
5. Herhalen van de bestelling
6. Noemen van aflevertijd
7. Afsluiten

Inhoud gesprek:

1. Neem de telefoon aan met:
   "Goedemorgen (-middag/ -avond) maaltijdservice, u spreekt met……"..(naam noemen)

2. Patiënt geeft zijn/ haar naam en de reden van het bellen aan;
   Herhaal naam van patiënt en vraag naar afdeling (= dubbelcheck juiste patiënt)
   Selecteer de juiste afdeling en naam op het scherm
   Vraag en bevestig kamernummer en dieet

3. Vraag naar de keuze van de patiënt en voer direct in;
   vul aan tot een volledige maaltijd en geef advies volgens script

4. Denk aan (de dagspecial en) de smaakversterkers

5. Vraag of je de keuze zal herhalen; zo nee, dan verder
   Vraag indien nodig waar de maaltijd geserveerd moet worden

6. Rond het gesprek af door te zeggen dat de maaltijd uiterlijk over 45 minuten, maar het kan ook eerder zijn of op een later gewenst tijdstip geserveerd wordt op de gewenst locatie (kamer, verpleging, lounge, enz..)

7. Sluit af met:
   "bedankt voor de bestelling en eet smakelijk voor straks; goedemorgen/ -middag/ -avond!''

Appendix 4 Uitleg conditie 2

Goeiedag,

Gister hebben we de controle dag gehad (huidige script).

Hierbij een korte instructie wat we vandaag gaan doen:
Vandaag is niet heel anders als gister. Wederom is het de bedoeling dat je het normale script hanteert. Alleen willen we nu vragen om aan het eind van de bestelling nog een suggestie te maken voor een extra product. Welke suggestie je geeft is afhankelijk of de patiënt al een toetje heeft gekozen ja of nee.

Doorlopen script
In samenspraak met de diëtistes hebben we gekozen om vruchtenkwark/yoghurtdrank aan te bieden. Erg belangrijk is dat de suggestie kort en krachtig is, dus heel subtiel en in lijn met je gesprek.

U heeft …… besteld. => Wilt u er nog een vruchtenkwark/yoghurtdrank bij?

Geef de suggestie nadat de bestelling klaar is en je deze hebt herhaald voor de patiënt. Geef de suggestie ook een beetje naar eigen inzicht, bijv. niet als iemand al 3 drankjes heeft besteld.
Als iemand vraagt ‘waarom kwark?’ Dan kun je zeggen; "Dat leek ons een lekker extra’tje/toevoeging aan uw bestelling

Als het geven van de suggestie om welke reden dan ook niet lukt of als je het vergeet, maakt niet uit, maar wel graag aangeven waarom. Op de checklist houden we dit namelijk bij zodat we achteraf kunnen zien wie tot onze ‘onderzoeksgroep’ behoort.

Doorlopen flowchart

Denk ook weer aan de toevoeging: voor iedereen die belt voeg je product XXX toe.
Het is van belang om product XXX eerst toe te voegen voor je de suggestie geeft. Als "XXX" niet zichtbaar is, dan heeft de patiënt namelijk een speciaal dieet en mag die niet meedoen aan het experiment. Met andere woorden dan hoef je de suggestie niet te geven. Ook familie/zorg/kinderen die patiënt zijn mogen niet meedoen aan het experiment.

Dan moeten ook alle locaties/activiteiten in "this meal only", alleen "XXX" gewoon in de bestelling

Ik zal vandaag wederom mee turven met een korte checklist voor onze eigen administratie.

Zijn er verder nog vragen of onduidelijkheden?

Appendix 5 Telefoonscript conditie 2

Hoofdlijnen gesprek:

1. Groeten
2. Bevestigen naam van patiënt, afdeling, kamernummer, dieet
3. Invoeren keuze volgens script
4. Suggestie voor een (additioneel) eiwitrijk product
5. Aanvullen met smaakversterkers
6. Herhalen van de bestelling
7. Noemen van aflevertijd
8. Afsluiten

Inhoud gesprek:

1. Neem de telefoon aan met:
   "Goedemorgen (-middag/ -avond) maaltijdservice, u spreekt met……"..(naam noemen)

2. Patiënt geeft zijn/ haar naam en de reden van het bellen aan;
   Herhaal naam van patiënt en vraag naar afdeling (= dubbelcheck juiste patiënt) Selecteer de juiste afdeling en naam op het scherm. Vraag en bevestig kamernummer en dieet.

3. Vraag naar de keuze van de patiënt en voer direct in;
   Vul aan tot een volledige maaltijd en geef advies volgens script

4. Suggestie voor een (additioneel) eiwitrijk product
   Wilt u er nog een vruchtenkwark/yoghurtdrank bij?

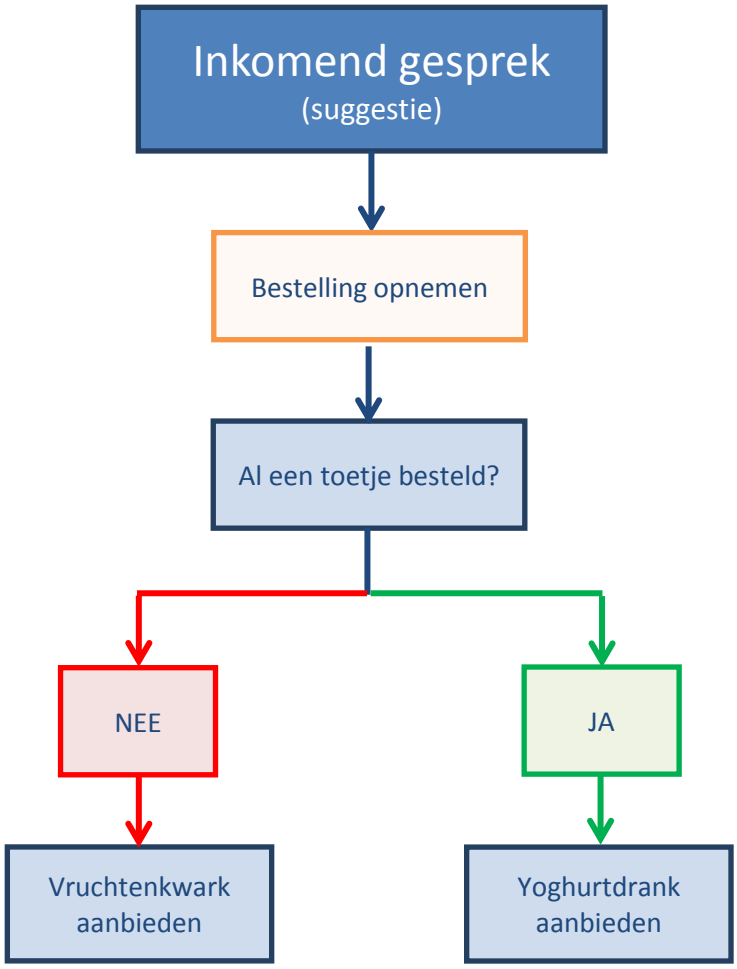
5. Denk aan (de dagspecial en) de smaakversterkers

6. Vraag of je de keuze zal herhalen; zo nee, dan verder
   Vraag indien nodig waar de maaltijd geserveerd moet worden

7. Rond het gesprek af door te zeggen dat de maaltijd uiterlijk over 45 minuten, maar het kan ook eerder zijn of op een later gewenst tijdstip geserveerd wordt op de gewenst locatie (kamer, verpleging, lounge, enz..)

8. Sluit af met:
   "bedankt voor de bestelling en eet smakelijk voor straks; goedemorgen/ -middag/ -avond!''

Appendix 6 Flowchart conditie 2



"wilt u er nog een vruchtenkwark/yoghurtdrank bij?"

Appendix 7 Uitleg conditie 3

Goeiedag,

Hierbij een korte instructie wat we vandaag gaan doen:
Vandaag is niet heel anders als gister. Wederom is het de bedoeling dat je het normale script hanteert plus een suggestie geeft. Alleen willen we nu vragen om de patiënt, gelijk na het herhalen van de bestelling, positieve feedback mee te geven over iets wat ze bestellen (kun je tijdens het opnoemen van de bestelling makkelijk iets bedenken). Deze feedback gaat over een gezond product, bijvoorbeeld; fruit/groente/volkorenbrood/melk/eiwitrijke hapjes. Deze dag is misschien iets lastiger omdat het soms gek aan kan voelen. Bedoeling is echter dat het kort en krachtig gebeurt. Uit de lijst met wat ze bestellen geef je ze kort iets terug in de trend van; "goed dat u X heeft besteld". De bedoeling is dat dit subtiel is, een beetje tussen neus en lippen door zeg maar. Doe dit door de feedback aan de suggestie vast te plakken, bijvoorbeeld:

"goed dat u fruit heeft besteld, wilt u er nog een vruchtenkwark bij?"

We begrijpen dat het een beetje gek/onnatuurlijk is om feedback te geven. Probeer het als oefening eerst maar eens op een moment en bij een patiënt waarbij het goed/authentiek voelt. En als mensen bijvoorbeeld alleen twee kroketten bestellen snappen we ook dat je hier niet zo snel een compliment over zou geven. In zo'n geval mag je het laten zitten, maar het liefst zo min mogelijk.

Doorlopen script
Weer geldt, als het geven van feedback/suggestie om welke reden dan ook niet lukt of als je het vergeet, maakt niet uit, maar wel graag aangeven waarom. Op de checklist houden we dit namelijk bij zodat we achteraf kunnen zien wie tot onze 'onderzoeksgroep' behoort.

Doorlopen flowchart

Het is van belang om product XXX eerst toe te voegen voor je de suggestie geeft. Als "XXX" niet zichtbaar is, dan heeft de patiënt namelijk een speciaal dieet en mag die niet meedoen aan het experiment. Met andere woorden dan hoef je de feedback en de suggestie niet te geven. Ook familie/zorg/kinderen die patiënt zijn mogen niet meedoen aan het experiment.

Dan moeten ook alle locaties/activiteiten in "this meal only", alleen "XXX" gewoon in de bestelling

Ik zal vandaag wederom mee turven met een korte checklist voor onze eigen administratie.

Zijn er verder nog vragen of onduidelijkheden?

Appendix 8 Telefoonscript conditie 3

Hoofdlijnen gesprek:

1. Groeten
2. Bevestigen naam van patiënt, afdeling, kamernummer, dieet
3. Invoeren keuze volgens script
4. Persoonlijk compliment o.b.v. bestelling
5. Suggestie voor een (additioneel) eiwitrijk product
6. Aanvullen met smaakversterkers
7. Herhalen van de bestelling
8. Noemen van aflevertijd
9. Afsluiten

Inhoud gesprek:

1. Neem de telefoon aan met:
   "Goedemorgen (-middag/ -avond) maaltijdservice, u spreekt met……"..(naam noemen)

2. Patiënt geeft zijn/ haar naam en de reden van het bellen aan;
   Herhaal naam van patiënt en vraag naar afdeling (= dubbelcheck juiste patiënt) Selecteer de juiste afdeling en naam op het scherm. Vraag en bevestig kamernummer en dieet.

3. Vraag naar de keuze van de patiënt en voer direct in;
   Vul aan tot een volledige maaltijd en geef advies volgens script

4. Persoonlijk compliment o.b.v. bestelling
   Bijvoorbeeld; **goed dat u** een beschuitje met **kaas heeft besteld**

5. Suggestie voor een (additioneel) eiwitrijk product
   Wilt u er nog een vruchtenkwark/yoghurtdrank bij?

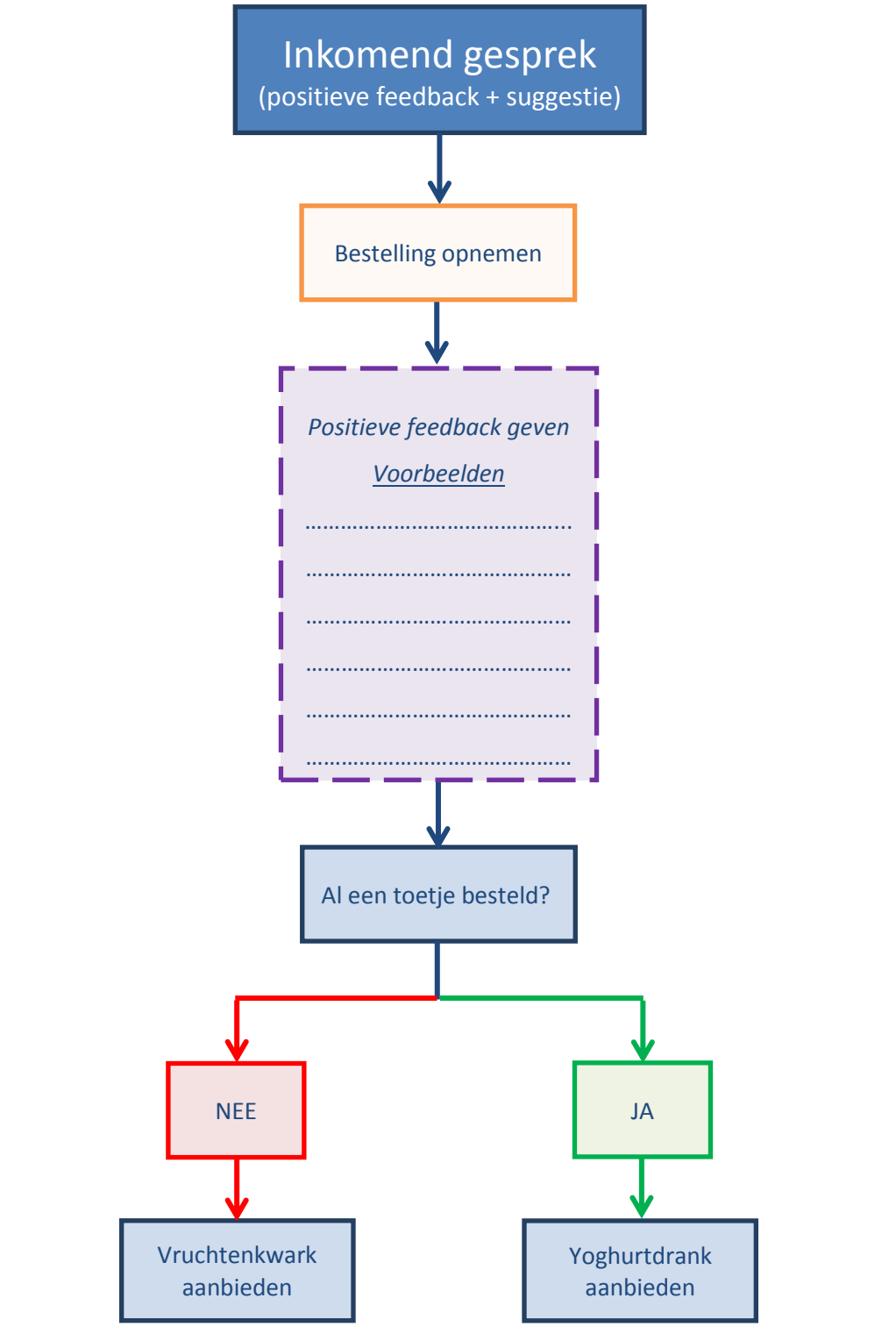
6. Denk aan (de dagspecial en) de smaakversterkers

7. Vraag of je de keuze zal herhalen; zo nee, dan verder
   Vraag indien nodig waar de maaltijd geserveerd moet worden

8. Rond het gesprek af door te zeggen dat de maaltijd uiterlijk over 45 minuten, maar het kan ook eerder zijn of op een later gewenst tijdstip geserveerd wordt op de gewenst locatie (kamer, verpleging, lounge, enz..)

9. Sluit af met:
   "bedankt voor de bestelling en eet smakelijk voor straks; goedemorgen/ -middag/ -avond!''

Appendix 9 Flowchart conditie 3



"goed dat u … heeft besteld, wilt u er nog een vruchtenkwark/yoghurtdrank bij?"

Appendix 10 Patiënten informatie

Dit onderzoek gaat over de maaltijdbestelling van patiënten. U hebt zojuist een telefonische maaltijdbestelling geplaatst. Wij willen u vragen om over deze maaltijdbestelling een korte vragenlijst in te vullen.

U krijgt voor dit onderzoek een willekeurig nummer toegewezen, en de door u verstrekte gegevens worden uitsluitend onder dit nummer opgeslagen om uw anonimiteit te garanderen. Gegevens worden daarnaast digitaal bewaard op de server van Wageningen Universiteit tot enkele jaren na publicatie van het onderzoek. Daarna worden de gegevens verwijderd.

U kunt zich op elk moment tijdens het onderzoek terugtrekken van deelname zonder verdere gevolgen.

Deelname duurt ongeveer 5 minuten.

Als u vragen heeft over dit onderzoek kunt u deze stellen aan de onderzoeksleiding of contact opnemen met Ellen van Kleef (Ellen.vanKleef@wur.nl). Indien u klachten heeft over het onderzoek, kunt u dit melden aan de onderzoeker of uw behandelend arts. Wilt u dit liever niet, dan kunt u zich wenden tot de klachtencommissie van Ziekenhuis Gelderse Vallei, tel. nr. 0318 434360.

Appendix 11 Toestemmingsverklaring voor deelname

Titel onderzoek	Callcenter studie
Periode	Juni 2014
Naam en adres organisatie	Wageningen Universiteit Marketing and Consumer Behaviour Group Hollandseweg 1, 6706 KN Wageningen
Hoofdonderzoeker	• Harmen van Essen

Als deelnemer heb ik begrepen waar het in dit onderzoek om gaat en wat er van mij verlangd wordt.

Ik verklaar hierbij dat ik:

- voldoende geïnformeerd ben over het onderzoek;
- weet dat het onderzoek een korte vragenlijst omvat
- voldoende tijd heb gehad om over deelname na te denken;
- vrijwillig mijn medewerking verleen aan het onderzoek; en
- weet dat ik op elk moment van het onderzoek mag stoppen, indien ik dat wens.

Goed om te weten:

- De geregistreerde gegevens worden vertrouwelijk behandeld en alleen gebruikt in de context van het onderzoek.
- De presentatie van de resultaten gebeurt anoniem (zonder naam, dus niet meer herleidbaar tot specifieke personen).

Naam deelnemer	
Datum ondertekening:	Handtekening:

Appendix 12 Vragenlijst patiënten

Geachte mevrouw, mijnheer,
In deze vragenlijst worden vragen gesteld die betrekking hebben op de lunchbestelling die u vandaag heeft gedaan.

Uw deelname wordt erg op prijs gesteld!

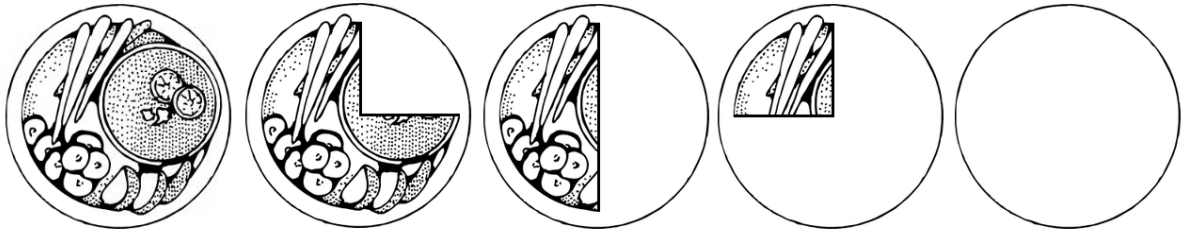
1. Hoe vaak heeft u zelf telefonisch eten/drinken besteld sinds u in behandeling bent?

0 1 keer
0 2 – 6 keer
0 7 – 12 keer
0 meer dan 12 keer

In hoeverre bent u het eens met de onderstaande stellingen?	Helemaal mee oneens (1)				Helemaal mee eens (5)
	1	2	3	4	5
2. Ik vond het een prettig telefoongesprek	◯	◯	◯	◯	◯
3. Ik vond het moeilijk om nee te zeggen tegen de telefoniste	◯	◯	◯	◯	◯
4. Ik ben tevreden met mijn lunchbestelling	◯	◯	◯	◯	◯
5. Ik ben een gezonde eter	◯	◯	◯	◯	◯
6. Ik ben trots op de keuzes die ik heb gemaakt	◯	◯	◯	◯	◯
7. In het gesprek werd ik geholpen om de juiste keuzes te maken	◯	◯	◯	◯	◯
8. Ik voelde mij verplicht om mee te gaan in de suggesties van de telefoniste	◯	◯	◯	◯	◯
9. Het krijgen van suggesties van de telefoniste was vervelend	◯	◯	◯	◯	◯

	Helemaal mee oneens (1)				Helemaal mee eens (5)
	1	2	3	4	5
10. De telefoniste gaf mij het gevoel dat ik goede keuzes heb gemaakt	◯	◯	◯	◯	◯
11. Ik ben blij met de producten die ik heb gekozen	◯	◯	◯	◯	◯
12. De telefoniste was vriendelijk	◯	◯	◯	◯	◯
13. De telefoniste was behulpzaam door suggesties te geven	◯	◯	◯	◯	◯
14. Ik vind dat ik goede keuzes heb gemaakt met mijn bestelling	◯	◯	◯	◯	◯
15. Ik ben iemand die gezonde keuzes maakt in de dingen die ik eet	◯	◯	◯	◯	◯
16. De suggesties die de telefoniste gaf waren nuttig	◯	◯	◯	◯	◯
17. Ik zie mijzelf als iemand die gezond eet	◯	◯	◯	◯	◯
18. Ik voelde mij goed over de producten die ik had gekozen	◯	◯	◯	◯	◯
19. De telefoniste was sympathiek	◯	◯	◯	◯	◯
20. De telefoniste was opdringerig in het geven van suggesties	◯	◯	◯	◯	◯

21. Doorkruis wat voor u van toepassing is. Van mijn bestelling heb ik:



Niets opgegeten	een deel opgegeten	de helft opgegeten	het meeste opgegeten	alles opgegeten
O	O	O	O	O

22. Heeft de telefoniste iets positiefs gezegd over de producten die u heeft besteld?

0 Ja 0 Nee

23. Wist u dat u vruchtenkwark/yoghurtdrink kon bestellen op de kaart?

0 Ja 0 Nee

24. Kreeg u een suggestie van de telefoniste om naast uw bestelling ook vruchtenkwark/yoghurtdrink te bestellen?

0 Ja 0 Nee (*dan bent u nu klaar met de vragenlijs, op de laatste blz. is nog ruimte voor opmerkingen)*

25. Heeft u deze suggestie (vruchtenkwark/yoghurtdrink) daadwerkelijk besteld?

0 Ja 0 Nee

26. Kruis één of meerdere redenen aan waarom u de suggestie wel/niet heeft besteld

0 Ik vind vruchtenkwark/yoghurtdrink wel / niet lekker
0 Omdat het wel / niet goed voor mij is
0 Ik zei automatisch ja / nee tegen de telefoniste
0 Ik dacht dat het naast mijn bestelling te veel voor mij zou zijn
0 Omdat ik er wel / geen zin in had
0 Ik vond de suggestie wel / niet een goed idee
0 Ik wilde liever geen 'nee' zeggen tegen de telefoniste
0 Anders, namelijk ……..

27. Ik vond de vruchtenkwark/yoghurtdrink lekker

Helemaal mee oneens					Helemaal mee eens
0	0	0	0	0	

28. De suggestie was een goede combinatie met mijn bestelling

Helemaal mee oneens					Helemaal mee eens
0	0	0	0	0	

29. Doorkruis wat voor u van toepassing is. Van mijn vruchtenkwark/yoghurtdrink heb ik:

Niets opgegeten	een deel opgegeten	de helft opgegeten	het meeste opgegeten	alles opgegeten
0	0	0	0	0

Heeft u nog vragen/opmerkingen wat betreft dit onderzoek?

:……
……
……
……
……
……
……
……
……
……
……

Hartelijk bedankt voor uw hulp!

Appendix 13 Checklist bij gesprekken

PP	Dag	Mede werker	conditie	afdeling	Kamer	Naam	Wie belt	Compliment gegeven	Compliment goed gegeven	Waarover	overige prompt	inhoud overige prompt	Prompt gegeven

PP	prompt goed gegeven?	Inhoudt prompt	Genomen	iets etra's genomen	grote/kleine bestelling	national iteit	goed dieet	hoe vaak aan de lijn gehad	Enquete ingevuld	Hoe vaak enquete ingevuld	bijzonderheden

Appendix 14 Factor and reliability analyses results

Items used in the questionnaire	**Construct**	**Chronbach's Alpha (α)**
	Helpfulness	**,808**
7. In het gesprek werd ik geholpen om de juiste keuzes te maken		(,553)
13. De telefoniste was behulpzaam door suggesties te geven		,704
16. De suggesties die de telefoniste gaf waren nuttig		,625
	Obtrusiveness	**.590**
3. Ik vond het moeilijk om nee te zeggen tegen de telefoniste		,578
8. Ik voelde mij verplicht om mee te gaan in de suggesties van de telefoniste		,407
9. Het krijgen van suggesties van de telefoniste was vervelend		,588
20. De telefoniste was opdringerig in het geven van suggesties		,480
	Self-Concept	**,716**
5. Ik ben een gezonde eter		(,301)
15. Ik ben iemand die gezonde keuzes maakt in de dingen die ik eet		,495
17. Ik zie mijzelf als iemand die gezond eet		,543

In this table, the Chronbach's alpha is shown behind each item. Above those items the Chronbach alpha value is shown based on the reliability analysis. Items between brackets, were deleted to improve Chronbach's alpha to at least α = .590.