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# Exploration of shared decision-making processes among dieticians and patients during a consultation for the nutritional treatment of dyslipidaemia

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## Abstract

**Background** Shared decision making (SDM) holds great potential for improving the therapeutic efficiency and quality of nutritional treatment of dyslipidaemia by promoting patient involvement in decision making. Adoption of specific behaviours fostering SDM during consultations has yet to be studied in routine dietetic practice.

**Objective** Using a cross-sectional study design, we aimed to explore both dieticians' and patients' adoption of SDM behaviours in dietetic consultations regarding the nutritional treatment of dyslipidaemia.

**Methods** Twenty-six dieticians working in local health clinics in the Quebec City metropolitan area were each asked to identify one dyslipidaemic patient they would see in an upcoming consultation. Based on the Theory of Planned Behaviour (TPB), questionnaires were designed to study two targeted SDM behaviours: 'to discuss nutritional treatment options for dyslipidaemia' and 'to discuss patients' values and preferences about nutritional treatment options for dyslipidaemia'. These questionnaires were administered to the dietician–patient dyad individually before the consultation. Associations between TPB constructs (attitude, subjective norm and perceived behavioural control) towards behavioural intentions were analysed using Spearman's partial correlations.

**Results** Thirteen unique patient-dietician dyads completed the study. Perceived behavioural control was the only TPB construct



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significantly associated with both dieticians' and patients' intentions to adopt the targeted SDM behaviours ($P < 0.05$).

**Conclusions** As perceived behavioural control seems to determine dieticians' and patients' adoption of SDM behaviours, interventions addressing barriers and reinforcing enablers of these behaviours are indicated. This exploratory study highlights issues that could be addressed in future research endeavours to expand the knowledge base relating to SDM adoption in dietetic practice.

## Introduction

Primary and secondary prevention of cardiovascular diseases (CVD) are achievable through lifestyle choices. For example, the adoption of a healthy diet may lead to a better control of blood lipids concentrations.[1] Past studies reveal a number of nutritional options for the treatment of dyslipidaemia.[2,3] Such treatment options may either consist of a total diet plan (e.g. the Portfolio diet or the Mediterranean diet);[4] recommendations about specific nutrient intake (e.g. omega-3 polyunsaturated fatty acids or soluble fibres);[2,3] and recommendations about specific foods or food groups (e.g. fatty fish or fruits and vegetables).[2,3] While these nutritional options are rarely mutually exclusive (i.e. most options include and/or are part of others, depending on their specificity), each of them has been shown to improve the lipid profile of dyslipidaemic patients.

As diet change has been shown to be limited by habits[5] and is difficult to maintain over time,[6,7] adherence to dietary advice is increasingly recognized as an important mediator of the impact of nutritional treatment options on health outcomes.[8–10] Food choices and habits are sensitive to the values of each individual,[11,12] and the cornerstone of adherence appears to be the acceptability of the treatment to the patient.[13] Previous studies have shown increased patient motivation and adherence when patients are allowed to choose their nutritional treatment.[14,15] Moreover, patients report being sensitive to nutrition counselling and treatment options matching their needs and wants.[16] Given that various treatment options are offered for the nutritional treatment of chronic diseases, such as dyslipidaemia, we hypothesize that patient adherence issues in this context of care may be solved by individualizing treatment plans according to patients' values and preferences.[17]

Defined as a process in which a health-related decision is jointly shared between a patient and a health professional,[18,19] shared decision making (SDM) represents a decision-making process that integrates patient-centred care into clinical practice. It aims at helping patients to play an active role in decision making. In the context of chronic diseases, benefits of SDM include improved patient adherence to treatment, satisfaction, knowledge and health.[20,21] SDM is viewed as the pinnacle of patient-centred care and these two concepts are increasingly being considered as inseparable.[22,23]

SDM is often defined as a set of competencies or behaviours to be adopted by both patients and healthcare professionals during a consultation.[24,25] Theoretical frameworks such as social cognitive theories have proved their suitability for improving understanding of healthcare professionals' behaviours.[26,27] However, few studies have employed such models to identify the determinants underlying healthcare professionals' SDM behaviours.[28–32] Furthermore, to our knowledge, only one of these studies has assessed SDM behaviours in both the healthcare professional and the patient together.[28] As patients and healthcare professionals are both actively involved in this model of decision making,[33] considering the behaviours and perspectives of both, and how their interactions influence the decision-making process, are key to gaining a thorough comprehension of SDM.[34,35]

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Despite the suitability of SDM for the management of chronic diseases,[36,37] studies have yet to be conducted in the field of the nutritional treatment of dyslipidaemia. Therefore, this exploratory study sought to describe SDM behaviours during dietetic consultations regarding the nutritional treatment of dyslipidaemia. This was done by applying a behavioural theory-based approach and also by assessing the extent to which dieticians involve their patients in decision making.

## Methods

We chose to use a cross-sectional study design to explore dieticians' and patients' adoption of SDM behaviours in dietetic consultation regarding the nutritional treatment of dyslipidaemia. Mainly, our study focuses on the two key concepts of SDM that are most discussed in the literature as reported in a systematic review by Makoul and Clayman:[24] patient's values and preferences, and [treatment] options. To this end, we formulated these two concepts as behaviours (respectively, 'to discuss nutritional treatment options for dyslipidaemia during the next consultation' and 'to discuss patients' values and preferences about nutritional treatment options for dyslipidaemia during the next consultation') and then studied them using the Theory of Planned Behaviour (TPB) (Fig. 1). To further our assessment of dieticians' and patients' behaviours, we used the French version of the OPTION scale (Observing PatienT InvOlvemeNt)[38,39] to analyse the transcripts of the recorded consultations. The OPTION scale is a reliable and validated third-observer instrument designed to assess patients' involvement in decision making by examining specific healthcare professionals' behaviours. The instrument rates 12 behaviours on a five-point scale ranging from 0 to 4, where 0 indicates that the behaviour was not observed and 4 indicates that the behaviour was exhibited to a high standard. We used this instrument to study nutritional consultations in an earlier study.[40]

### Participant recruitment and data collection

We identified dieticians working in local health clinics in the Quebec City metropolitan area (Canada) through Internet research and phone calls. The inclusion criterion was membership in the Professional Order of Dieticians of Quebec, the province of Quebec's professional regulatory body for dieticians. Information letters were sent to their declared practice offices. A postage-paid refusal postcard was enclosed to be sent back within the next 3 weeks if they did not want further information on the study. Dieticians who volunteered to participate were asked by phone to identify one dyslipidaemic patient they were to see during an upcoming consultation. All patients consulting for abnormal blood lipids concentrations (i.e. high low-density lipoprotein cholesterol, low high-density lipoprotein cholesterol, high triglycerides) were eligible to participate. Once a dyslipidaemic patient was identified, a research assistant met with the patient–dietician dyad at the site of consultation. Participants were asked individually whether they agreed for the consultation to be audio-recorded. Agreement from both members of the dyad was required to proceed to audio-recording. Dieticians and patients separately had to answer pre-consultation and post-consultation questionnaires. Participants

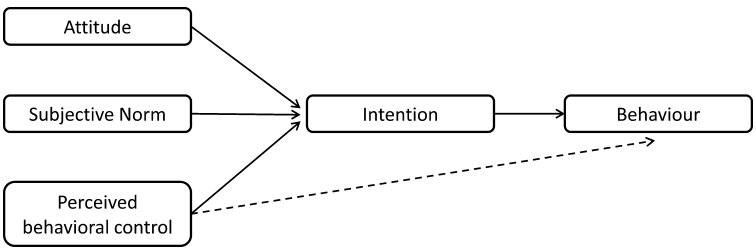



**Figure 1** Theory of Planned Behaviour (TPB) model.[41]

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did not receive an honorarium and both dieticians and patients provided written informed consent. The project was approved by the Research Ethics Board of the *Centre Hospitalier Universitaire de Québec* (CHUQ) and of the *Centre de Santé et de Services Sociaux de la Vieille-Capitale* (CSSS-VC).

### Questionnaires and data collection

We designed a questionnaire based on the TPB (Fig. 1)[41] to assess dieticians' and patients' intention to adopt the two targeted SDM behaviours: 'to discuss nutritional treatment options for dyslipidaemia during the next consultation' and 'to discuss patients' values and preferences about nutritional treatment options for dyslipidaemia during the next consultation'. In line with the TPB framework, the theoretical constructs of attitude (i.e. one's positive or negative evaluation of self-adoption of the behaviour), subjective norm (i.e. one's perception that adoption of the behaviour is influenced by the judgment of significant others) and perceived behavioural control (i.e. one's beliefs about the influence of factors that may facilitate or impede the adoption of a behaviour) as well as intention (i.e. one's readiness to adopt the behaviour) toward the behaviours were assessed by formulating corresponding items in the questionnaire as indicated by Godin.[42] Items were rated on a seven-point bipolar Likert scale ranging from −3 (strongly disagree) to +3 (strongly agree).

Two questionnaires were developed for the study: one to be answered by participants before the consultation and the second, after. The pre-consultation questionnaire included the TPB questionnaire about the two targeted behaviours, the Control Preferences Scale[43] and socio-demographic data. The post-consultation questionnaire assessed the adoption of each studied behaviour in the consultation by means of a yes/no question. Participants were also asked to elaborate on their answers to provide understanding of the reasons for behaviour adoption or non-adoption. Questionnaires were validated for comprehension and clarity with five individuals from each respective population (dieticians and patients), and modified accordingly.

### Audiotape analyses

The OPTION scale was used to code transcripts of recorded consultations to assess the extent to which dieticians involved their patients in decision making about the nutritional treatment for dyslipidaemia. We used NVivo qualitative research software (Version 8; QSR International, Melbourne, Vic., Australia) to code consultations with OPTION as previously described.[40] Two raters (HV and SMD) were trained before coding the consultations in this study. They first reviewed the OPTION scale coding instructions. Afterwards, they met to discuss their understanding of items to reach a consensus. The raters then independently coded a sample of five nutritional consultations from a previous study in which dietary treatment of chronic diseases was the focus of the discussion. The inter-rater reliability was good [inter-rater coefficient correlation (ICC) of 0.96]. They finally proceeded to the overall scoring of consultation recordings from the present project.

### Statistical analyses

Spearman's partial correlations were performed between intention and each of the three theoretical constructs of the TPB (attitude, subjective norm and perceived behavioural control), adjusting for the other two constructs each time. We performed descriptive statistics on the OPTION scale to evaluate the extent to which dieticians involved patients in decisions, and we calculated ICC to assess inter-rater reliability of our coding. Internal consistency (using Cronbach's alpha) could not be measured due to the small sample size of audio-recorded consultations. We calculated Spearman's correlation coefficients to quantify associations between the OPTION scores, TPB constructs, preferred role in decision making as assessed by the Control Preferences Scale, consultation

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characteristics (e.g. duration) and participants' socio-demographic characteristics. All statistical analyses were performed using SAS software (version 9.2; SAS Institute Inc., Cary, NC, USA).

## Results

Recruitment and consent to participate took place from May 2011 to May 2012. Of the 93 dieticians contacted, 26 initially accepted to participate in the study. Thirteen completed the study with a patient. Complete dyads were included in the statistical analyses of TPB constructs ($n = 13$). Eight consultations were recorded and analysed with the OPTION scale ($n = 8$). Figure 2 describes the recruitment procedure.

Of 13 consultations, six were first consultations while seven were follow-ups. Socio-demographic characteristics of dieticians and patients are presented in Tables 1 and 2, respectively. Table 3 shows participants' preferred decision-making role. The majority of dieticians (62%) preferred to 'share the decision' while the majority of patients (54%) preferred to 'make the decision, after considering their dietician's opinion'.

Results shown in Table 4 indicate that perceived behavioural control was the only TPB construct significantly associated with the intention 'to discuss nutritional treatment option'

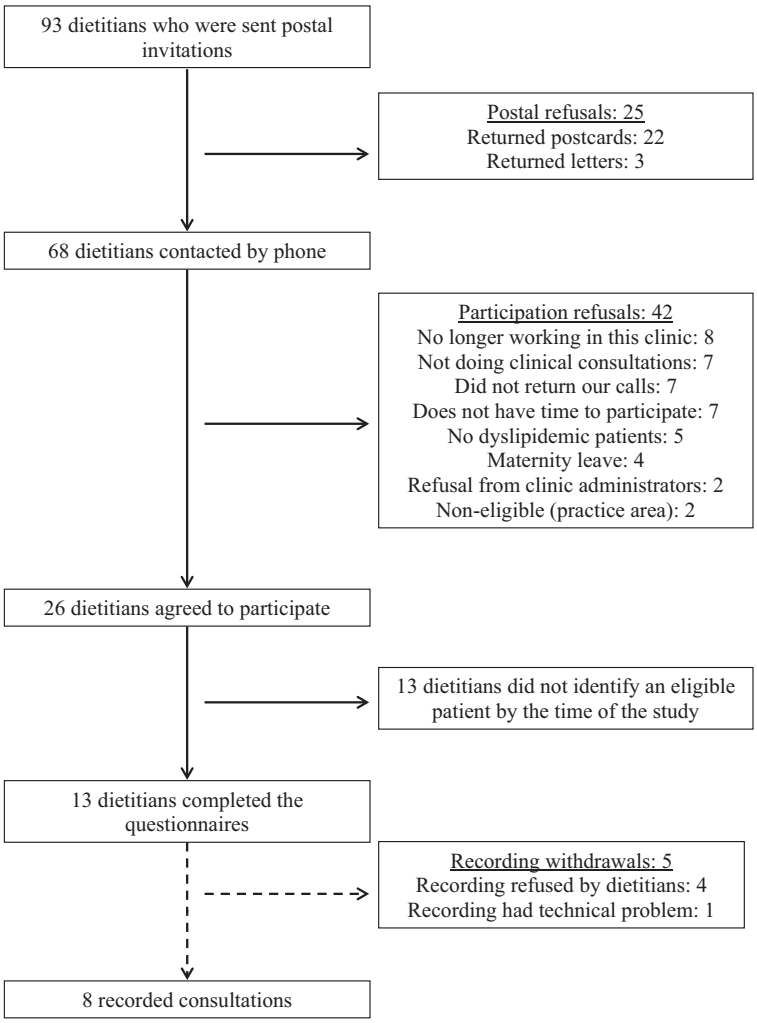



**Figure 2** Recruitment flow diagram.

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**Table 1** Characteristics of participating dietitians

| Characteristics | *n* = 13<br>mean ± SD or *n* (%) |
|---|---|
| Age (years) | 38.9 ± 10.8 |
| Gender | |
| Female | 13 (100) |
| Number of years in practice | 11.8 ± 8.1 |
| Employment status | |
| Full-time permanent | 2 (15) |
| Part-time permanent | 5 (38) |
| Part-time on-call/temporary | 3 (23) |
| Self-employed | 3 (23) |
| Participation in the past year | |
| In a committee or working group | 9 (69) |
| Continuous professional development | 12 (92) |
| Diploma other than Registered Dietitian (RD) | 2 (15) |

**Table 2** Characteristics of participating patients

| Characteristics | *n* = 13<br>mean ± SD or *n* (%) |
|---|---|
| Age (years) | 53.8 ± 14.6 |
| Gender | |
| Male | 7 (54) |
| Female | 6 (46) |
| Education | |
| Elementary school | 2 (15) |
| High school or college | 5 (39) |
| University | 6 (46) |
| Employment status | |
| Full-time | 7 (54) |
| Part-time | 1 (8) |
| Unemployed | 0 |
| Retired | 5 (39) |

and with the intention 'to discuss patient's values and preferences' for both patients and dieticians. Dieticians and patients showed favourable intentions (>0, which corresponds to the neutral value on the scale) to adopt both targeted behaviours. There was no significant difference between intentions to adopt the behaviours in dieticians and patients ($P = 0.52$ and $P = 0.95$, respectively). In the post-consultation questionnaire, 3/12 dieticians and 11/12 patients reported they had 'discussed nutritional options' while all participants reported they had 'discussed patient's values and preferences' during the consultation. Among stated reasons for not having adopted the first behaviour, dieticians reported having considered that some options were not appropriate to present because of their initial evaluation of the patient's health condition and/or lifestyle habits ($n = 4$) or their lack of time ($n = 3$).

**Table 3** Preference in decision-making style

| | Dietitians<br>*n* (%) | Patients<br>*n* (%) |
|---|---|---|
| Patient alone | 2 (15) | 0 |
| Patient with consideration of dietitian's opinion | 2 (15) | 7 (54) |
| Together | 8 (62) | 4 (31) |
| Dietitian with consideration of patient's opinion | 1 (8) | 2 (15) |
| Dietitian alone | 0 | 0 |

The overall mean OPTION score obtained from transcripts of the eight recorded consultations was 28.0 ± 6.0% (ICC = 0.855). The mean duration of consultations was 56 ± 20 min. The association between the OPTION score and consultation duration was not statistically significant ($r = 0.64$; $P = 0.09$). Regarding specific OPTION scale items (Table 5), the highest scores obtained for dieticians were for exploring patients' expectations about how to manage the problem (Item 6), listing options (which include the choice of 'no action') (Item 4) and indicating the need to review or defer the decision (Item 12). On the other hand, dieticians scores were the lowest for identifying the need for a decision-making stage (Item 11) and eliciting patient's preferred level of involvement in decision making (Item 10).

According to data from the eight recorded consultations, dieticians' intentions 'to discuss nutritional treatment options' and 'to discuss patient's values and preferences' were not related to the observed adoption of their related OPTION score, represented by item 4 ($r = 0.02$; $P = 0.96$) and item 6 ($r = 0.17$; $P = 0.69$), respectively.

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**Table 4** Associations of TPB constructs with dietitian and patient intentions[†]

| | Dietitians' intention to discuss... | | Patients' intention to discuss... | |
|---|---|---|---|---|
| Constructs | Options | Values and preferences | Options | Values and preferences |
| Attitude | 0.05 | 0.02 | −0.08 | 0.37 |
| Subjective norm | 0.38 | −0.47 | −0.07 | 0.50 |
| Perceived behavioral control | 0.74** | 0.93** | 0.84** | 0.64* |

[†]Spearman partial correlation *r* coefficients, $n = 13$; *$P < 0.05$; **$P < 0.01$.

**Table 5** Items' scores of the OPTION scale*

| Items | Mean score[†] |
|---|---|
| 1. The clinician draws attention to an identified problem as one that requires a decision-making process. | 1.0 |
| 2. The clinician states that there is more than one way to deal with the identified problem (equipoise). | 0.9 |
| 3. The clinician assesses the patient's preferred approach to receiving information to assist decision making (e.g. discussion, reading printed material, assessing graphical data, using videotape or other media). | 0.8 |
| 4. The clinician lists options that can include the choice of no action | 1.7 |
| 5. The clinician explains the pros and cons of options to the patient (taking no action is an option). | 0.8 |
| 6. The clinician explores the patient's expectations (or ideas) about how the problem(s) are to be managed. | 1.9 |
| 7. The clinician explores the patient's concerns (fears) about how the problem(s) are to be managed. | 1.1 |
| 8. The clinician checks that the patient has understood the information. | 1.2 |
| 9. The clinician offers the patient explicit opportunities to ask questions during the decision-making process. | 1.2 |
| 10. The clinician elicits the patient's preferred level of involvement in decision making. | 0.5 |
| 11. The clinician indicates the need for a decision-making (or deferring) stage. | 0.7 |
| 12. The clinician indicates the need to review the decision (or deferment). | 1.7 |

*$n = 8$.
[†]On a scale ranging from 0 (behavior not practiced) to 4 (well-executed behavior).

No statistically significant correlation was found between variables of interest (TPB constructs and OPTION score) and participants' characteristics such as dieticians' age or number of years in dietetic practice, patients' age, gender or education, or nature of consultation (first consultations vs. follow-ups).

## Discussion

To the best of our knowledge, our study is the first to explore both dieticians' and patients' SDM behaviours in routine consultation for the nutritional treatment of dyslipidaemia. Results revealed that perceived behavioural control, which is related to one's beliefs about the influence of factors that may facilitate or impede the adoption of a behaviour, was significantly related to dieticians' and patients' intentions 'to discuss options' and 'to discuss patient's values and preferences'. These results provide insight into factors that may influence the intention to adopt the two targeted SDM behaviours, and to future research endeavours that could expand the knowledge base about SDM in dietetic practice. The scores of the third-observer instrument (OPTION scale) also suggested that patient involvement in decision making in this specific context of care remains low despite participants' favourable intentions to adopt specific SDM behaviours and despite participants' interest in 'sharing the decision' about the nutritional treatment choice.

### Participants' SDM behaviours

Patient involvement in decision making in the context of nutritional treatment of dyslipidaemia as observed with the OPTION scale was suboptimal. Yet, in spite of a small sample

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size, it remains quite comparable to those observed in other diet-related disease treatments[40] or in the practices of other health professionals.[44,45] Similarly, dieticians, like other healthcare professionals, seem better skilled at behaviours related to the treatment choice itself (such as OPTION items 4, 6 and 12, see Table 5) than at discussing about the decision making process and patients' preferences (such as OPTION items 3 and 10).[44] Previous studies have pointed out barriers to elicitation of patient preferences about the decision-making process, such as the perception among health professionals that it is counterproductive[46] and unsettling to professional practice.[40] However, with all mean OPTION scores in our study under the 5-point scale median, none of the competencies at all can be considered to have been practised even to a moderate standard.

Perceived behavioural control has already been shown to be a strong predictor of dieticians' behavioural intentions for our two studied behaviours,[32] and it reached statistical significance in this study too. Furthermore, the self-efficacy construct,[47] the core concept of social cognitive theory and conceptually similar to perceived behavioural control, has shown to be highly predictive of dieticians' counselling practices in general,[48] specifically in the management of high blood cholesterol.[49] The dieticians' results in our study are confirmed by the findings of a systematic review that 'beliefs about capabilities' was the determinant that consistently predicted both healthcare professionals' intention to adopt a behaviour and their actual adoption of the behaviour.[26] Earlier studies of our two studied behaviours that also used the TPB (not in the context of dyslipidaemia) underlined the same behavioural control beliefs that might have influenced dieticians' intentions in our study.[29,32] Most frequently reported barriers perceived by dieticians in these studies were as follows: lack of time in consultation, characteristics of the patient's personality (motivation, openness, trust and understanding), patient's medical condition, and lack of interviewing techniques.[29,32] The relevance of perceived behavioural control among dieticians in this study is also congruent with studies of other healthcare professionals[50] and healthcare representatives[51] who frequently reported beliefs about barriers and facilitators to adopting SDM. Furthermore, two of these barriers (lack of time and patient's medical condition) are congruent with the reasons for not having 'discussed nutritional treatment options' given by some of the dieticians in our study.

Concerning patient results that linked perceived behavioural control to intention for both studied behaviours, a similar concept (self-efficacy[47]) has already been established as being influential on patient participation in decision making in other healthcare contexts.[52,53] However, in these studies, determinants other than self-efficacy were shown to be equally influential on patient participation, such as the healthcare professional facilitating involvement (e.g. solicitation of patient's treatment preferences and effective communication skills) and initial preferred role for decision making.[52,53] In our study, it appears that patient preferences for active participation were linked to their positive intentions towards SDM behaviours. However, their perceived ability to overcome barriers (such as dieticians not promoting involvement) contributed to enabling their adoption in the consultation. Given our small sample size, further studies will be needed to confirm these interpretations.

Patient-initiated SDM behaviours are more frequently observed and tend to lead to more SDM in consultations than do healthcare professional-initiated SDM behaviours,[54] and this trend is especially enhanced when patients tend to prefer an active rather than a passive role in decision making.[55,56] This tendency, when measured with the Control Preferences Scale or other instruments, is found in many clinical situations.[57] Our results also found that patients prefer an active role, suggesting that patients might be the best 'triggers' for promoting SDM during nutritional consultations. To this end, dieticians must however demonstrate openness to patient participation through their communication style.[55] As an example, this could be achieved in the future by training

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dieticians in SDM and by implementing decision aids. Such interventions have already been shown to have a potential effect in other healthcare situations for the improvement of communication and patient involvement.[58,59]

### Limitations

Dieticians' participation in the study was limited, even though only one consultation was required per dietician. Many hypotheses can be formulated to explain this. First, postal invitations and refusal postcards were developed to achieve as much voluntary participation as possible. However, one cannot exclude the possibility that some dieticians contacted by mail refused to participate without having as much information about the study objectives as those who were contacted by phone. This issue was pinpointed in a pilot trial of a continuing medical education programme in SDM in a family medicine group.[60] Secondly, to the best of our knowledge, studies reporting on direct observation of dieticians' practice in their usual office hours are scarce. This may be indicative of dieticians' reluctance to participate in research projects, especially when they are asked if the consultation can be recorded. Indeed, in our study, four of the 13 dieticians who had identified a patient and completed the questionnaires did not consent to record the consultation. Although dieticians have reported a positive attitude to getting involved in research activities as research team members,[61,62] this interest may wane when the object of study is their own clinical practice. This could partly explain why a previous study on determinants of the same behaviours obtained a higher recruitment rate (47%): it was a postal survey with no observations of actual dietetic consultations.[32] As a result of these recruitment issues, generalizability of our results appears limited. Indeed, our small sample size impeded statistical power to undertake multiple regressions for analysing salient beliefs associated with TPB constructs, or structural equation modelling to improve our understanding of dyadic processes.[63–65]

## Conclusion

This exploratory study is the first to assess patients' and dieticians' adoption of SDM behaviours in consultation for the nutritional treatment of dyslipidaemia. As perceived behavioural control appears to be the sole TPB construct to significantly predict intentions to perform both studied SDM behaviours, interventions addressing barriers and reinforcing enablers for their adoption by dieticians and patients should be explored in depth in further studies. These may foster more effective SDM implementation in dietetic practice. Results also indicate that patients prefer to play an active rather than a passive role in decision making. However, despite patients' and dieticians' positive intentions to adopt SDM behaviours, patients' involvement in decision making as measured by a third-observer instrument remains low. The results of our exploratory study contribute to highlight issues that should be addressed in future research endeavours to further expand the knowledge base related to SDM in dietetic practice.

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## Conflict of interest

None to declare.

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