Patient Education and Counseling 103 (2020) 1645–1649

Contents lists available at ScienceDirect

Patient Education and Counseling

journal homepage: www.elsevier.com/locate/pateducou

Short Communication

Does a renal diet question prompt sheet increase the patient centeredness of renal dietitian outpatient consultations?

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ARTICLE INFO

Article history:
Received 15 March 2019
Received in revised form 29 February 2020
Accepted 3 March 2020

Keywords:
Patient Centered Care
Dietetics
Outpatient
Health communication
Question prompt sheet

ABSTRACT

Objective: Effective communication is fundamental to helping patients change behaviour. Few studies have operationalised how to quantify and improve the patient centeredness of communication during the dietitian outpatient consultation. We sought to evaluate the impact of a renal diet question prompt sheet (QPS) on patient centeredness (PC) in dietitian outpatient clinics and describe the impact of a renal diet QPS on the volume and pattern of communication between dietitians (n = 4) and patients/carers (n = 24, n = 11).

Methods: The Roter Interaction Analysis System was used to compute a PC index, the volume communication (number of questions and utterances) and categorise dietitian communication.

Results: The QPS was associated with significant improvements in the PC of communication ($p = 0.004$ and $p = 0.001$), without increasing the volume of communication. The QPS was also associated with an increase in the total number of questions asked ($p < 0.0001$) especially from patients ($p = 0.0009$); and an increase in the volume of communication devoted to education and counselling ($p < 0.0001$).

Conclusions: This study describes a promising intervention to increase the patient centeredness of dietetic consultations in an outpatient setting.

Practice implications: Whilst simple in design, the use of a QPS had a large effect on how patients and carers interact with the dietitian in the outpatient setting.

1. Introduction

The delivery of health care depends on effective communication [1,2]. Patient-centered communication (PCC) is a core component of dietetic competency standards across the developed world [3], and is described within these standards as a counselling approach that supports patient autonomy and choice to achieve health outcomes [4]. Guidance about how to quantify the 'patient centeredness' of communication in dietetic care is limited [5]. Studies that demonstrate how to operationalise or integrate PCC interventions into dietetic practice are also limited [6].

Question Prompt Sheets have been used in oncology to improve communication between the patient and health professional [7,8]. Question prompt sheets contain a list of questions provided to the patient before the consultation. The QPS is well accepted by patients [9], improves patient knowledge [10] and recall of information [11], and reduces patient anxiety [8]. Given no studies implementing a QPS have been conducted in the dietetic setting, the aims of this study were to evaluate the impact of a renal diet QPS on patient centeredness in renal dietitian outpatient clinics and describe the impact of a renal diet QPS on the volume and pattern of communication during the consultation.

2. Methods

2.1. Study design and setting

This exploratory study used a prospective, quasi experimental pre-post design. Three renal dietitian outpatient clinics in one health district in New South Wales, Australia recruited consecutive patients attending clinics over a nine-week period into the study. Patients were excluded if unable to give informed consent or declined to be audio recorded. The consultation was audio

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https://doi.org/10.1016/j.pec.2020.03.003
0738-3991/

recorded to capture the nature of communication that occurred between the patient, carer and dietitian. All consultations were restricted to one hour for new patients or 30 min for review patients.

2.2. Intervention

Pre-intervention patients (n = 11) attended the renal dietitian clinic and received usual care. The intervention consisted of usual care plus patients (n = 13) were sent a copy of the renal diet question prompt sheet (QPS) [12] at least one week prior to the consultation. The QPS contains 18 commonly asked questions about the renal diet [12], and patients were invited to complete the QPS and then bring it to the consultation to discuss with the dietitian. Pilot work indicates the QPS is well accepted and useful to patient [12].

2.3. Outcome measures

The Roter Interaction Analysis System (RIAS) [13] was used to measure 'patient centeredness' (PC). This system categorises each complete statement (utterance) [14] into more than 35 mutually exclusive categories. This enables a 'patient centeredness' score (PCS) to be calculated [15],

PC scores were calculated using previously published formulas [16] (Table 1). Scores reported for the RIAS range from zero to five [2]. Communication is 'patient centered' if the PCS is >1 [2]. Dietitian verbal dominance is calculated by including all dietitian utterances in the numerator and all patient and/ or carer utterances in the denominator [17].

The volume of communication was evaluated by calculating the total number of utterances by dietitians, P&C at each consultation, and counting the number of questions asked per consultation by P&C. To detect any change in the pattern of communication the utterances were grouped into five categories [18]: utterances structuring the visit; information gathering; patient education and counselling; relationship building; and patient activation and facilitation related utterances (Table 1).

2.4. Statistical analysis

The Independent Samples *t*-test was used to compare the PCS, verbal dominance, number of utterances, and number of questions asked between baseline and intervention periods. Effect sizes and 95 % confidence intervals (CI) were categorised as small (Cohen's d $\sim$ 0.20, small, negligible practical importance); medium (Cohen's d $\sim$ 0.50, medium, moderate practical importance); and large (Cohen's d $\sim$ 0.80, large, crucial practical importance) [19]. The strength of association between categorical variables was assessed using Cramer's V, with a Cramer's V < 0.05 (small effect); V < 0.15 (medium effect) and Cramer's V > 0.25 (large effect) [20]. Using evidence from the most recent study on the use of the RIAS [21], sample size calculations indicated that a sample size of 10 patients was required pre and post intervention to provide 90 % power of detecting a change in the PCS ratio.

3. Results

Twenty four patients and 12 carers were recruited to the study. Consultations were provided across three sites by four dietitians. One carer declined audio recording. Patient characteristics pre and post intervention did not differ (Table 2).

3.1. Patient centeredness scores and verbal dominance

Table 3 shows there were very large statistically significant increases in the patient centeredness of the consultation after the introduction of the QPS. Both PCS scores were significantly higher post intervention (Table 3, p = 0.004 and p = 0.001 respectively). Despite the increase in the PC of the consultation there was no significant change in dietitian dominance of the consultation (p = 0.25).

3.2. Volume of communication

There was no significant change in the volume of communication during the consultation. There were however significant increases in the number of questions asked during the consultation by patients and overall. Questions from patients increased from (mean $\pm$ sd) 1 ± 0.7 per consultation to 9.7 ± 2.3 (Table 3, p = 0.0009). There was a five-fold increase in questions from carers from 2.2 ± 2.3 per consultation to 11 ± 8.5 (Table 3, p = 0.05). When combined, there was a statistically significant increase in question asking overall from patients and carers from a mean of 3.2 ± 2.2 questions to 20.7 ± 8.3 questions per consultation (p < 0.0001).

Table 1
Coding examples and categories using the RIAS.

Functional group	Types of communication codes included	Examples of utterances
Structuring the visit	Orientation to the agenda	"Let me just explain what I'm going to do"
	Giving directions and instructions	"We can go through all that today."
Information gathering	Questions about medical history	"Have you spoken to your doctor just about the timing of your diabetes medications?"
	Questions about diet therapy	"What I would like you to do is to talk me through a day"
	Questions about lifestyle	"Do you do any sort of structured exercise or physical activity?"
	Questions about psychosocial history	"Who do you live with at home?"
Patient education and counselling	Information giving about medical topics	"Weight management is important to preserve those kidneys"
	Information giving about diet therapy	"Skipping meals is not going to be great for managing your weight"
	Lifestyle information and counselling	"Do you think you'd be able to walk for 10 minutes or something?"
	Psychosocial exchange about feelings and emotions	"How are you feeling about what we've talked about?"
Building a relationship	Jokes, approval, compliments,	"I think everyone does that (gains weight) on holidays."
	Agreement and concerns	"I know. It's a tricky, difficult time. Isn't it?"
	Empathy, reassurance	"You always have tried hard", "That's a legitimate concern"
	Disagreement	"I don't think that's realistic to be honest"
Facilitation and patient activation	Asking for patient opinion	"Is that something that you want to do?"
	Asking for understanding	"So, what don't you understand about reading the food label?"
	Paraphrasing and interpretation	"Has it just been gradually putting weight on since then"
	Backchanneling *	"Good good"

* Backchanelling is defined as utterances that indicate the listeners attentiveness and expectation that the speaker should continue talking (29).

Table 2
Characteristics of participants and dietitians in baseline and intervention periods.

	Baseline	Intervention	Total	P value
Number of dietitians	4	4	4	–
Dietitian gender Female, n (%)	4 (100)	4 (100)	4(100)	–
Number of patients	11	13	24	–
Patient gender Male, n (%)	6 (54.5)	6 (46.2)	12 (50.0)	0.59
New patients (%)	8 (73)	10 (77)	18 (75)	1.00
Age median (IQR)	71 (55–83)	60 (55–70)	61 (55–74)	0.21
Carers present	5	6	11	1.00
CKD stage				
Stage 1	0	1	1	0.09
Stage 2	1	1	2	
Stage 3a	0	3	3	
Stage 3b	2	1	3	
Stage 4	3	4	7	
Stage 5	2	1	3	
Hemodialysis	0	1	1	
Kidney Transplant recipient	3	1	4	
Reasons for referral				
Hyperkalemia	3	0	3	0.02
Nutrition support	2	3	5	
Post-transplant advice	3	0	3	
Weight loss	1	7	8	
Other	2	3	5	

Legend: CKD: Chronic Kidney Disease; IQR: Interquartile range.
Reasons for referral in the 'Other' category include kidney stones, low salt diet, post Acute Kidney Injury follow up, pre-dialysis education and renal supportive care.

3.3. Pattern of communication

The introduction of a QPS was also associated with an altered pattern of communication (Table 3, $p < 0.0001$). The strength of this association was large (Cramer's $V = 0.25$, $p < 0.0001$). There were statistically significant increases in the number of utterances relating to patient education and counselling: which increased from 17.9 % of utterances pre-intervention to 35.7 % of utterances post intervention ($p < 0.0001$). The proportion of utterances devoted to building a relationship reduced from 15.7%–9.8% ($p < 0.0001$). The utterances devoted to structuring the visit were also significantly reduced after the introduction of the QPS, comprising 17.1 % of utterances pre-intervention and 6.6 % after ($p < 0.0001$).

3.4. Discussion

Communication between the patient and the health professional is fundamental for patients to understand therapeutic goals [22]. In this study, the QPS was associated with significant improvements in the PC of the communication during the dietetic consultation. While the number of questions asked by P&C increased, the overall volume of communication did not, indicating an altered pattern of communication during the dietetic consultation.

This study contributes important evidence regarding PCC in the dietetic context. Typical PCS in medical consultations such as emergency care, community medicine and primary care are < 1 [2,21,23,24], and doctors dominate verbal exchanges [13,17]. In contrast, at both baseline and intervention the PCS was > 1 using three different formulas, indicating a PC approach by the dietitians was common. The PCS was significantly higher when a QPS was provided to patients, and verbal dominance reduced. However, the impact of this altered pattern of communication on dietary changes or patient outcomes are yet to be explored.

Table 3
Outcome measures of patient centeredness and volume of communication.

	Pre-intervention (n = 11)	Post-Intervention (n = 13)	P value	Effect size (d) (95 % CI)
Patient Centeredness Score *(mean, sd)*				
PCS formula 1	1.40 (0.84)	3.25 (1.74)	0.004	1.36 (0.39–2.15)
PCS formula 2	1.54 (0.37)	2.14 (0.65)	0.001	1.15 (0.21–1.93)
Dietitian verbal dominance	1.65 (0.80)	1.46 (0.71)	0.56	0.25 (−1.05–0.56)
Volume of communication				
Utterances per appointment (mean, sd)				
By Dietitians	529.4 (145.4)	588.1 (255.9)	0.51	0.28 (−0.54–1.07)
By Patients	370.8 (168.3)	426.1 (170.1)	0.43	0.33 (−0.48–1.12)
By Carers	110.1 (152.9)	111.2 (165.9)	0.99	0.007 (−0.8–0.81)
Total number of utterances (n,%)				
By Dietitians	5823 (52.3)	7645 (52.2)	0.45	0.01 a
By Patients	4079 (36.7)	5539 (37.7)	0.45	
By Carers	1211 (10.9)	1445 (9.9)	0.84	
Question asking per appointment (mean, sd)				
Number of questions asked - patient	1 (0.71)	9.7 (2.3)	0.0009	1.6 (0.6–2.5)
Number of questions asked - carer	2.2 (2.3)	11 (8.5)	0.05	1.4 (0–2.7)
Number of questions asked -patient and carer	3.2 (2.2)	20.7 (8.3)	<0.0001	2.0 (1.0–3.0)
Combined total of questions asked	50	234	–	–
Dietetic patterns of communication (total number of utterances, %)				
Structuring the visit	997 (17.1)	500 (6.6) *	<0.0001	0.25 a
Information gathering utterances	1414 (24.3)	1913 (25.2)		
Patient education and counselling	1041 (17.9)	2709 (35.7) *		
Building a relationship	917 (15.7)	740 (9.8) *		
Facilitation and patient activation	1454 (25.0)	1721 (22.7)		

Legend: sd: standard deviation; * $p < 0.0001$; a: Effect size calculated using Cramer's V. 'Combined total of questions asked' refers to the total number of questions asked by patients and carers from all consultations in the pre-intervention or intervention periods.
Patient Centredness Scores calculated using the formulas described by Weiner et al [16].
PCS formula 1 was calculated as follows: (dietitian psychosocial data gathering + dietitian psychosocial information giving + dietitian emotional rapport-building + dietitian engagement + patient psychosocial questions + patient psychosocial information giving + patient emotional rapport building + patient biomedical questions)/(dietitian biomedical data gathering + **dietitian biomedical information giving** + dietitian procedural communication + patient biomedical information giving).
PCS formula 2 calculated as follows: (dietitian psychosocial data gathering + dietitian psychosocial information giving + **dietitian biomedical information giving** + dietitian emotional rapport-building + dietitian engagement + patient psychosocial questions + patient psychosocial information giving + patient emotional rapport-building + patient biomedical questions)/(dietitian biomedical data gathering + dietitian procedural communication + patient biomedical information giving).
PCS formula 1 differs from PCS formula 2 in regards to whether dietitian biomedical information giving (bolded) is counted as patient-centered or doctor-centered behavior.

One strength of this study was the quantification of dietetic communication. The small number of questions ask by P&C in the pre-intervention period should be of concern to clinicians. This study has also demonstrated that additional counselling and education occurred without additional consultation time. This is in contrast to perceptions that PC approaches are time consuming [25]. The reduction in rapport building and structuring talk is consistent with previous research in emergency rooms [2]. Further research to establish whether a reduction in time spent structuring sessions is associated with reduced satisfaction with dietetic care, particularly because these are regarded as integral components of the dietetic counselling process [26].

3.5. Limitations

Limitations include the small number of carers, and an inability to explore associations between gender and PC. Female health professionals are more patient centred in their consultations than males [23,27]. Because dietetics is a female dominated profession [28], this may explain the higher scores in this study compared to others [23,27]. Time spent categorising utterances was also substantial and is a well-documented criticism of the RIAS [29]. This may preclude it from practical use in everyday clinical practice [30].

3.6. Conclusions

Patient centered approaches are associated with improved patient satisfaction and wellbeing [31], particularly in multi-morbid populations [32]. In this study, the use of a renal diet specific QPS was associated with significant increases in the PC of communication in the dietetic consultation and an increase in engagement by patients and carers. Further research to confirm the findings are needed and clarification about whether alterations observed in the pattern of communication in this study translate into positive dietary changes or improved health outcomes.

3.7. Practice implications

The goal of nutrition counselling is to inform and inspire behaviour change. Patients attending dietitian outpatient consultations rarely engaged in question asking prior to the introduction of a question prompt sheet. The use of a simple intervention to increase question asking by patients may lead to improved changes in dietary behaviours and better health outcomes.

CRediT authorship contribution statement

Kelly Lambert: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing - original draft. **Tsz Kwan Lau:** Data curation, Formal analysis, Methodology, Project administration, Validation, Visualization, Writing - original draft. **Sarah Davison:** Writing - review & editing. **Holly Mitchell:** Writing - review & editing. **Alex Harman:** Writing - review & editing. **Mandy Carrie:** Writing - review & editing.

Acknowledgements

This research was funded by a Translating Research Into Practice Fellowship from the National Health and Medical Research Council of Australia (APP1150099). The funding source was not involved in any part of the study design or the decision to submit the manuscript for publication.

Appendix A. Supplementary data

Supplementary material related to this article can be found, in the online version, at doi:https://doi.org/10.1016/j.pec.2020.03.003.

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