
Qualitative Research

Barriers to improved dyslipidemia control: Delphi survey of a multidisciplinary panel

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Abstract

Objective. To assess the barriers that make it difficult for the health care professionals (physicians, nurses and health care managers) to achieve a better control for dyslipidemia in Spain.

Methods. The study has an observational design and was performed using the modified Delphi technique. One hundred and forty-nine panel members from medicine, nursing and health care management fields and from different Spanish regions were selected randomly and were invited to participate. Individual and anonymous opinions were asked by answering a 42-items questionnaire via e-mail (two rounds were done). Level of agreement was assessed using measures of central tendency and dispersion. We analysed commonalities/differences between the three groups (Kappa index and McNemar chi-square).

Results. Response rate: 81%. The agreement index was 33.3 (95% CI: 18.9–47.7). Regarding the non-compliance with therapy, it improves with patient education degree in dyslipidemia, patient motivation, the agreement on decisions with the patient and with the use of cardiovascular risk measure and it gets worse with lack of information on the objectives to achieve. Clinical inertia improves with professional's motivation, cardiovascular risk calculation, training on objectives and the use of indicators and it gets worse with lack of treatment goals.

Conclusion. Different perceptions and attitudes between medicine, nursing and health care management were found. An agreement in interventions in non-compliance and clinical inertia to improve dyslipidemia control was reached.

Key words: Cardiovascular disease, Delphi technique, family practice, hyperlipidemias, practice management, risk factors.

Introduction

Throughout the World Health Organization (WHO) European Region cardiovascular disease is estimated to be the leading cause of death. WHO attributes 8.7% of the total burden of cardiovascular disease in the European region to high blood cholesterol. The health threat from cholesterol has been increasing as part of the ageing and increasing obesity of European society (1). The most recent studies (2) show, in Spain, between 50–60% of middle-aged adults have total cholesterol levels >5.1 mmol/l and ~20–25% are >6.4 mmol/l, which is considered a high level needing treatment. In clinical practice, one in four patients in primary care is diagnosed with dyslipidemia. However, many studies that were carried out within primary and specialty care have highlighted the limited capacity for achieving the goals recommended by different national and international scientific associations (2,3). Although three out of four patients with dyslipidemia receive drug treatment, only one in three or four patients diagnosed and treated is properly controlled. The degree of control decreases as the cardiovascular risk of patients increases since it is easier to achieve control for patients in primary prevention whose treatment goals are less demanding than for those patients in secondary prevention or at equivalent risk (2). Most (80%) lipid disorders are related to diet and lifestyle (4); therefore, dyslipidemia good control is possible by taking in account the hygienic-dietetic and therapeutic measures.

The most important barriers shown are the difficulties of compliance with pharmacological and hygienic-dietetic treatments (5,6) along with health professionals' clinical inertia in their not intensifying treatment when indicated (7,8). There is a lack of information regarding the obstacles that patients have in their treatment compliance and how health providers adopt a conservative attitude over time in view of the poorly controlled low-density lipoprotein (LDL)-cholesterol level. In order to know the opinion of health professionals regarding the needs for greater control of dyslipidemia, a standardized research methodology such as the Delphi method is required. It is a very flexible and adaptable method that is relevant when seeking to generate a consensus among experts in an area of uncertainty.

This study aims, based on knowledge and experience of the professionals involved, to find specific solutions to overcome the barriers that currently exist in poorly controlled dyslipidemia patients

through a multidisciplinary consensus developed by Delphi technique. The specific objective of the study is to assess the barriers that make it difficult for the health care professionals (physicians, nurses and health care managers) to better control dyslipidemia in Spain by finding the factors that improve or avoid treatment compliance or clinical inertia.

Methods

Study design

The study was observational and was performed using the modified Delphi technique. It is a structured qualitative technique of professional consensus derived from the original procedure developed by Dalkey *et al.* (9). Figure 1 shows the flow diagram of the study. This research was approved by the institutional review board.

Participants

There are two types of participants in the Delphi technique: (i) scientific committee, responsible for coordinating the project, defining the contents of the questionnaire and selecting the expert panel and (ii) expert panel, which was composed of multidisciplinary professionals (panelists) of proven experience whose opinion was requested during the process. One hundred and forty-nine panel members from medicine, nursing and health care management fields and from different Spanish regions were selected randomly and were invited to participate without personal presence. Eligibility criteria were: (i) >5 years of experience and (ii) professional in the field of primary health care. A cover letter of the study was sent to all participants and their acceptance was signed. This study used snowball sampling (in which 'key opinion leaders' members recruit additional participants). No simple size was calculated since there is a lack of agreement around the expert sample size and no criteria against which a sample size choice could be judged (10).

Instrument

The questionnaire consisted of 42 items without a specific order and also offered the possibility of adding free comments to each item. Each item is an assertion (positive or negative) that shows a

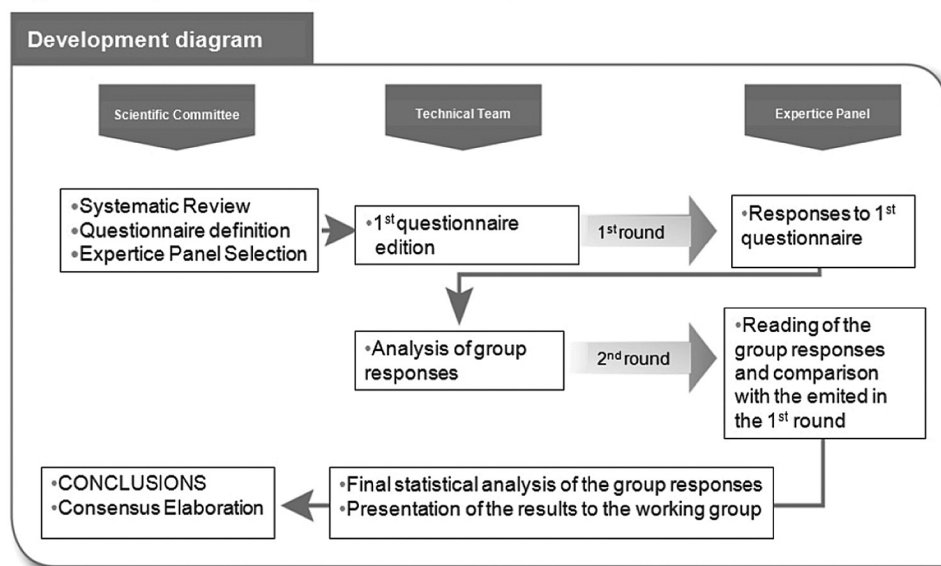


Figure 1. Flow diagram of study.

professional criterion regarding the possible barriers in the high-risk patients with dyslipidemia in order to achieve a better control of these patients (see Table 1).

Process

The different stages of the Delphi technique were done: selection of panelists, survey design, obtaining answers from expert panel (two rounds were done), analysis of results and determination of consensus level (see Fig. 1).

Preparation of questionnaire and method of response: The survey items selection was defined by the scientific committee at several meetings using the nominal group technique. In the first round, individual and anonymous opinions were asked of each expert by answering the questionnaire via e-mail. In the second round, the questionnaire was sent with the items that did not reach the consensus and with the explanatory comments included in panelists' questionnaires. In order to facilitate the analysis of responses, a unique rating scale (nine point ordinal Likert-type scale) for all the items was proposed. The categories of responses are described by linguistic qualifiers of agreement/disagreement.

Statistical analysis

Descriptive analysis has been performed for the Likert-type questionnaire's items with a 9-position scale, calculating the mean and median as central tendency statistics and the median standard deviation and interquartile range were used as a dispersion measurement. Median and quartiles (1 and 3) were employed to justify the obtained differences. The median is considered as the best single indicator that defines consensus in a group and quartiles (1 and 3) show the dispersion for the middle 50% of the panelists. When the obtained value was <10%, the indecision was considered to be a priority over the consensus and therefore a revision was required in the second round.

For the statistical analysis a concordance index (11) was used reflected by the obtained negative responses (hesitation) over the total of the obtained responses. To value the concordance index, the number of rejected questions (1–3) was divided by total of received responses. Percentages of opinion change and 95% confidence intervals (CIs) were calculated between the first and second rounds. Finally, Kappa index and McNemar test were used for the medical, nursing and managers comparisons, with a significance level of 0.05.

Table 1. Questionnaire items

1	Lack of therapeutic compliance by patient justifies the therapeutic inertia
2	Polymedication facilitates the therapeutic inertia
3	The adverse events of drugs contribute to the therapeutic inertia
4	The ineffectiveness of hygienic-dietetic measures facilitates the therapeutic inertia
5	The therapeutic compliance is promoted by means of communication with the partner/family/caregiver
6	Patient beliefs weight in the therapeutic compliance.
7	Lack of information on the goals to achieve affects non-compliance.
8	Dyslipidemia is a disease with few symptoms which favours non-compliance
9	Poor communication between patient and health care providers favours non-compliance
10	Patient education in dyslipidemia and cardiovascular risk increase therapeutic compliance
11	Patient motivation affects therapeutic compliance
12	Shared decision making encourages adherence
13	The blame for non-compliance lies with the patient
14	The adverse effects of drugs affects non-compliance
15	Motivated health care professional is associated with less therapeutic inertia
16	Lack of time in the consultation favours therapeutic inertia
17	Because of high-density lipoprotein and triglycerides control is secondary, therapeutic inertia weight in patients with these alterations
18	The therapeutic inertia decreases by using adequate doses
19	Lack of registrations in the medical history promotes therapeutic inertia
20	Patient is culpable for therapeutic inertia
21	The use of the cardiovascular risk calculation decreases therapeutic inertia
22	Acceptance of upper or lower limit level as normal level promotes clinical inertia.
23	Therapeutic inertia is often justified
24	Establishing goals and objectives in dyslipidemia treatment may avoid therapeutic inertia
25	Lack of teamwork among physicians and nurses promotes the therapeutic inertia
26	Assessing the therapeutic compliance in clinical practice promotes the patients' compliance.
27	Lack of human resources promotes therapeutic inertia
28	Lack of alarm systems in the electronical clinical history that warn of missed targets contributes to the therapeutic inertia
29	Complex record systems contributes to the therapeutic inertia
30	Lack of screening with a lipid profile contributes to therapeutic inertia
31	Different guidelines for the management of dyslipidemia facilitates therapeutic non-compliance
32	Nurses may play a key role in reducing therapeutic non-compliance
33	Currently, economic crisis favours therapeutic non-compliance
34	Dissemination of research results to the research community about dyslipidemia treatment may reduce therapeutic inertia
35	Training performed by health care management organizations reduces therapeutic inertia
36	Training performed by scientific associations reduces therapeutic inertia
37	Control of dyslipidemia targets by nurses may reduce therapeutic inertia
38	The use of all the dyslipidemia indicators (total cholesterol, LDL, high-density lipoprotein, triglycerides) reduces the therapeutic inertia
39	Cardiovascular risk assessment may improve therapeutic compliance
40	Health administration recommendations reduce therapeutic inertia
41	Health administration recommendations improve therapeutic compliance
42	Current prescription indicators favour therapeutic inertia

Results

The response rate was 81%. The results of the first round are shown in [Appendix A](#). According to the methodology/statistics, the analysis of the first round presented 12 consensus statements in medicine (Items 5, 7, 8, 9, 11, 12, 15, 16, 24, 30, 36 and 38), 15 in nursing (Items 5, 6, 7, 9, 11, 12, 14, 15, 19, 25, 26, 30, 32, 37 and 38) and 12 in health care management (Items 1, 7, 8, 9, 10, 11, 12, 24, 25, 32, 37 and 38). The results of the second round are shown in [Appendix B](#). There were 11 consensus statements in medicine (Items 2, 4, 6, 10, 14, 19, 21, 22, 26, 34 and 39), 15 in nursing (Items 1, 3, 8, 10, 18, 20, 21, 22, 24, 27, 31, 33, 34, 36 and 39) and 9 in health care management (Items 5, 6, 14, 15, 21, 28, 31, 36 and 39).

The Kappa indexes in the first round are shown in [Table 2](#). After the second round, [Table 3](#) shows the Kappa indexes obtained for agreement and disagreement between medicine, nursing and health care management. Agreement and discrepancy degree between medicine and nursing answers were analysed and no significant discrepancies were found (first round: Kappa = 0.40; 95% CI: 0.11–0.69; $P = 0.549$; second round: Kappa = 0.31; 95% CI: 0.03–0.59; $P = 0.18$). Between medicine and health care management the discrepancy analysis was no significant in both rounds (first round: Kappa = 0.42; 95% CI: 0.12–0.72; $P = 1$; second round: Kappa = 0.33; 95% CI: 0.05–0.61; $P = 0.79$). Between nursing and health care management answers the discrepancies were significant after the second round (first round: Kappa = 0.40; 95% CI: 0.11–0.69; $P = 0.549$; second round: Kappa = 0.43; 95% CI: 0.37–0.49; $P = 0.04$).

The global results after both rounds and between the three groups are shown in [Appendix C](#). There were seven consensus statements whose lower confidence limit was >90% (Items 5, 7, 8, 11, 12, 15 and 24). The agreement index was 33.3% (95% CI: 18.9–47.7).

Finally, we analysed the issues that were accepted or refused by all professional groups. There were nine full consensus statements regarding therapeutic non-compliance (5, 6, 7, 8, 10, 11, 12, 14 and 39) and five regarding clinical inertia (15, 21, 24, 36 and 38).

Discussion

This study analyses the views of health professionals and identifies the barriers and the best recommendations to overcome the therapeutic non-compliance and health professionals' clinical inertia that cause poor control dyslipidemia. The main barriers identified were lack of knowledge of patients, lack of communication between patient and physician and lack of motivation in both. Different proposals are suggested to overcome them: promotion of shared-decision making, setting of treatment goals plan, promotion of the use of dyslipidemia indicators and tools for the calculation of cardiovascular risk. Today, prevention measures are considered as a priority in public health. In this case, prevention is based on the promotion of a healthy lifestyle.

Results show that level of consensus among nursing professionals was higher than among medicine and health care management professionals. The analysis of discrepancy between the three groups after first and second rounds showed no significant Kappa indexes. However, there was a trend towards poor agreement among the professionals. We would like to emphasize that the best agreement and the greatest discrepancies are obtained between nursing and management answers, obtaining a Kappa value within the moderate category. Regarding degrees of agreement and disagreement among the responses of medicine and nursing and nursing and management answers, the Kappa values are discrete and differences were not significant. Global results showed that fair agreement among panelists existed since only one out of three assertions reached the consensus after the second round. We would like to highlight that only the health care management group identified the Item 28, 'Lack of alarm systems in the electronic clinical history that warn of missed targets contributes to the therapeutic inertia', as a barrier. Finally, [Figure 2](#) summarizes the reached consensus on the issues that may improve or worsen the non-compliance and may reduce or increase clinical inertia.

Findings in recent literature showed the variability of the rates of adherence to the treatment (30–70%) (12). To know the factors influencing adherence of patients to treatment is very important in order to overcome the therapeutic incompletion. New methods and

Table 2. Contingency table and Kappa indexes in the first round

Health care management			Nursing			Kappa
			Agreement	Not in agreement	Total	
Agreement	Medicine	Agreement	5	2	7	0.12; 95% CI: -0.44 to 0.68; $P = 1$
		Not in agreement	3	2	5	
		Total	8	4	12	
Not in agreement	Medicine	Agreement	3	2	5	0.38; 95% CI: -0.02 to 0.58; $P = 0.687$
		Not in agreement	4	21	25	
		Total	7	23	30	

Table 3. Contingency table and Kappa indexes after second round

Health care management			Nursing			Kappa
			Agreement	Not in agreement	Total	
Agreement	Medicine	Agreement	15	1	15	0.12; 95% CI: -0.27 to 0.52; $P = 0.219$
		Not in agreement	5	1	6	
		Total	19	2	21	
Not in agreement	Medicine	Agreement	5	3	8	0.23; 95% CI: -0.18 to 0.64; $P = 0.727$
		Not in agreement	5	8	13	
		Total	10	11	21	

Improve the COMPLIANCE	Worsen the COMPLIANCE
To Inform the partner/family/caregiver.	The patient's belief.
The level of dyslipidemia patient education.	The lack of information on the objectives to achieve.
The degree of patient motivation.	Dyslipidemia has few symptoms.
To share and to reach a consensus on decisions with the patient.	The drugs' adverse events.
To measure the cardiovascular risk.	
Reduce the INERTIA	Increase the INERTIA
The degree of motivation of health professionals.	The lack of treatment by objectives.
The use of cardiovascular risk calculation.	
Training in objectives within dyslipidemia treatment.	
The existence of indicators of dyslipidemia.	

Figure 2. Full agreement about the therapeutic compliance and clinical inertia.

interventions need to be developed to improve primary adherence and clinical inertia (13). Medication-taking behavior is complex and involves patient, family physician and process components (14). Our results are consistent with other international studies that stated that patient-related factors as lack of understanding of their disease (15), lack of involvement in the treatment decision-making process (16) and suboptimal medical literacy (17) contribute to medication non-adherence. The patient's health beliefs and attitudes concerning the effectiveness of the treatment, their previous experiences with pharmacological therapies, lack of motivation and the fear by patients and physicians alike regarding the toxicity of lipid-lowering agents also affect the degree of medication adherence (18,19). However, there are other factors identified as barriers to medication adherence that were missed in our study as the high medication costs, lack of transportation and lack of family or social support (20), as well as factors related to physicians (e.g. prescription of complex drug regimens and provision of care by multiple physicians) (18,20), and those that are related to health care systems (e.g. office visit time limitations, limited access to care and lack of health information technology) (14). We consider that all of these issues, except prescription of complex drug regimens and office visit time limitations, are included in the Spanish Healthcare System.

With regard to clinical inertia, recent studies suggested measures to improve physician education and confidence in guidelines (21), which are related to the motivation of health professionals and the use of a treatment goals plan and quality indicators recommended by the guidelines as our study concludes.

Strengths and limitations of the study

The response rate to the questionnaire was good. In total, we approached 120 experts from different health fields including the views of medicine, nursing and health care management professionals from different Spanish regions. In order to obtain information from different point of views and to avoid the negative consequences of face-to-face meetings we used the Delphi technique. The Delphi method is especially useful for situations in which there is a lack of empirical evidence and decisive factors are rather subjective, and not knowledge based. One of the advantages of this technique is that

experts, having actively participated in defining problems or building solutions, acquire a broader understanding of the subject matter. They may even increase their commitment to the subject matter and be more willing to actively participate in activities that are concluded from the research. The Delphi method allows the exploration and unification of views of a professional group regarding an issue of interest. Panelists and participants can maintain their anonymity and are guaranteed enough time for individual reflection within the controlled mechanism for interaction, thereby minimizing the potential for influence and/or bias (9).

The restrictions found in this study were the same that studies with similar design. A further possible limitation was the use of a structured questionnaire. It has been suggested that this approach may prevent elaboration of the issues and the possibility of experts suggesting other options, which might be of benefit (15). However, in order to reduce this limitation we allowed space for free text responses in the Delphi questionnaire that were incorporated into the questionnaire used in the second round.

This study provides a method that could be applied to achieve an agreement in interventions to improve risk factors control. From our results emerge recommendations to improve dyslipidemia control in primary care by taking into account the opinion of physicians and nurses, as well as health care managers, which is an innovative issue of this study. The results may be applicable to any country whose health services system provides primary health care. Our findings are the beginning of the development of an improvement plan for health care professionals in order to overcome the barriers to good dyslipidemia control and to reduce the uncertainty that produces therapeutic non-compliance and clinical inertia in clinical practice. A goal for the future is the analysis of patient's opinion.

Conclusion

This study found different perceptions, attitudes and knowledge between three health professional groups. Our results suggest that targeted actions to improve the control of dyslipidemia should take into account patient-related factors such as the information provided to the patient, the patient motivation and the shared decision

making. And also physician related factors such as the use of cardiovascular risk calculation, the use of the quality indicators of dyslipidemia, the treatment by objectives and the physician motivation.

Supplementary material

Supplementary material is available at *Family Practice* online.

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Declarations

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Conflict of interest: none.

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APPENDIX 1

Results of the first round

Items	Nursing										Clinical management										
	Mean	SD	1st quartile	2nd quartile	3rd quartile	Concordance index	Include in 2nd round	Mean	SD	1st quartile	2nd quartile	3rd quartile	Concordance index	Include in 2nd round	Mean	SD	1st quartile	2nd quartile	3rd quartile	Concordance index	Include in 2nd round
1	3.9	2.2	2	3	6	72.88	Yes	3.4	2.4	1	3	6	82.35	Yes	3.83	2.6	2	3	7	100	No
2	6.64	1.6	6.5	7	7.5	83.05	Yes	5.2	2.3	4	5	7	52.94	Yes	5.75	2.5	5	6.5	7	66.67	Yes
3	6.08	2	5	7	7	81.36	Yes	4.7	2.4	3	4	7	76.47	Yes	5.67	2.8	3.75	7	7	83.33	Yes
4	4.4	2.1	3	4	6	70.18	Yes	3.9	2.4	1.75	4	6.25	75	Yes	3.58	2.2	2	3	5.25	83.33	Yes
5	7.95	0.8	8	8	8	94.92	No	8.2	1.1	8	9	8.25	94.12	No	7.83	1.5	7.75	8	9	83.33	Yes
6	6.75	1.8	6	7	8	76.27	Yes	7.6	1.5	7	8	8	93.75	No	7.08	1.4	6.5	7.5	8	75	Yes
7	7.48	1.4	7	8	8	96.55	No	8	1.1	7	8	9	94.12	No	7.83	0.8	7.75	8	8	91.67	No
8	7.71	1.4	7	8	9	96.61	No	8.1	1.1	8	8	9	88.24	Yes	7.75	0.9	7	8	8	91.67	No
9	7.67	1.5	7	8	9	91.38	No	8.5	0.7	8	9	9	100	No	7.5	1.6	7	8	8	100	No
10	7.49	1.4	7	8	9	89.83	Yes	7.9	1	7	8	9	88.24	Yes	7.92	0.9	7.75	8	8.25	91.67	No
11	8.15	1	8	8	9	100	No	8.8	0.4	9	9	9	100	No	8.33	0.8	8	8.5	9	100	No
12	7.97	1.2	8	8	9	96.61	No	8.7	0.5	8	9	9	100	No	8.33	0.8	8	8.5	9	100	No
13	3.68	1.8	2	3	5	64.41	Yes	3.6	1.9	3	3	5	64.71	Yes	3.5	1.8	2.5	3.5	5	50	Yes
14	7.17	1.5	7	7	8	89.83	Yes	7.2	1.3	7	7	8	94.12	No	7.08	1.2	7	7	8	83.33	Yes
15	7.93	0.9	8	8	8	96.61	No	7.9	1.5	7	8	9	100	No	6.5	1.7	5.75	7	7.25	75	Yes
16	7.41	1.6	7	8	8	93.22	No	7	0.9	6	7	7	70.59	Yes	6.75	1.7	6	7	8	66.67	Yes
17	6.56	1.8	6	7	8	69.49	Yes	6.5	1.3	6	7	7	64.71	Yes	4.5	2.5	2.75	4	7	83.33	Yes
18	6.54	1.8	5	7	8	75.44	Yes	5.9	2	4.75	6.5	7	62.5	Yes	5	2	4	5	6.25	41.67	Yes
19	7	1.7	7	7	8	84.75	Yes	7.5	1.5	7	8	9	94.12	No	6.33	1.9	6	7	7.25	66.67	Yes
20	2.93	1.4	2	3	4	76.27	Yes	2.9	2.1	1	3	3	82.35	Yes	3	1.6	2	3	3.25	83.33	Yes
21	7.08	1.3	7	7	8	79.66	Yes	7	1.4	7	7	8	76.47	Yes	6.5	2.2	5	7	8.25	66.67	Yes
22	6.75	1.3	7	7	7	80.7	Yes	6.7	1.9	6	7	8	76.47	Yes	5.42	1.9	3.75	6	6	41.67	Yes
23	3.74	1.9	2.25	3	5	65.52	Yes	2.6	1.5	1	2	3	82.35	Yes	4.5	2.2	2.75	5.5	6	58.33	Yes
24	7.73	1.2	7	8	8	94.92	No	7.5	1	7	7	8	82.35	Yes	6.92	2	7	7.5	8	91.67	No
25	6.66	1.8	6	7	8	79.66	Yes	8	0.9	7	8	9	94.12	No	6.92	2.1	7	7.5	8	91.67	No
26	7.47	0.9	7	7	8	88.14	Yes	7.8	0.8	7	8	8	94.12	No	6.58	1.3	5.75	7	7.25	66.67	Yes
27	6.76	1.8	7	7	8	87.93	Yes	6.5	1.9	6	7	7	64.71	Yes	5.08	2	3.75	6	7	58.33	Yes
28	7.03	1.4	6	7	8	72.88	Yes	7	1.2	6	7	7.25	62.5	Yes	5.58	2.6	3.5	6.5	8	75	Yes
29	6.45	1.7	6	7	7	74.14	Yes	6.4	1.2	5	7	7	58.82	Yes	5.25	2	3	6	7	66.67	Yes
30	7.19	1.4	7	8	8	91.53	No	7.6	0.8	7	7	8	100	No	5.73	2	5	6	7	54.55	Yes
31	5.02	2.1	3	5	7	69.49	Yes	4.7	2	3	5	6	64.71	Yes	5.5	2	3.75	6.5	7	75	Yes
32	7.34	1.2	7	8	8	77.97	Yes	8.5	0.6	8	9	9	100	No	7.58	1.3	7	8	8	91.67	No
33	6.08	2.3	4.5	7	8	74.58	Yes	6.3	2	5	7	7	76.47	Yes	6.33	1.7	5	6.5	7.25	58.33	Yes
34	8.88	1.2	7	7	7	79.31	Yes	9.1	2.3	4	7	8	70.59	Yes	5.08	2	3	6	6.25	58.33	Yes
35	6.36	2	6	7	8	83.05	Yes	6.3	2	6	7	8	70.59	Yes	6.42	2.3	5.75	7	8	83.33	Yes
36	7.58	0.8	7	8	8	93.22	No	6.5	1.9	6	7	8	82.35	Yes	5.83	2.2	4.5	6.5	8	75	Yes
37	7.2	1.3	7	7	8	81.36	Yes	8.3	1	7.75	9	9	93.75	No	7.25	1.9	7	7.5	8.25	91.67	No
38	7.34	1.2	7	7	8	91.53	No	7.5	1.4	7	8	8	100	No	7.17	1.9	7	7.5	8	91.67	No
39	7.25	1.6	7	8	8	88.14	Yes	7.4	1.3	6	7.5	8.25	68.75	Yes	6.75	1.7	5.75	7.5	8	75	Yes
40	5.2	1.9	4	6	7	54.24	Yes	5.8	2	5	6	7	58.82	Yes	6.33	2.1	5.75	7	8	75	Yes
41	4.92	2	3	5	6	54.24	Yes	5.6	1.4	5	6	6.25	37.5	Yes	5.64	2.2	4	6	7.5	63.64	Yes
42	5.71	2	5	6	7	61.02	Yes	6.2	1.6	5	7	7	60	Yes	4.75	1.7	3.75	5	6	33.33	Yes

APPENDIX 2

Results of the second round

Medicine																													
Clinical management																													
Items	Mean	SD	1st quartile	2nd quartile	3rd quartile	RQ	DQ	Concordance index	Change to consensus	ITEMS	Mean	SD	1st quartile	2nd quartile	3rd quartile	RQ	DQ	Concordance index	Change to consensus										
1	3.11	1.7	2	3	3	1	0.5	89.47	No	1	1.8	1.1	1	2	2	1	0.5	93.33	Yes	2	6.17	1.53	5	7	7	2	1	75	No
2	6.73	1.4	7	7	7.25	0.3	0.1	9.07	Yes	2	5.25	1.7	5	5	6	1	0.5	25	No	3	5.64	2.25	5	7	7	2	1	72.73	No
3	6.45	1.7	6.5	7	7	0.5	0.3	83.64	No	3	6.44	1.8	7	7	7	0	0	93.75	Yes	4	4	1.79	3	3	5	2	1	72.73	No
4	3.13	1.7	2	3	3	1	0.5	92.59	Yes	4	3.5	2.7	1	3	5.25	4.3	2.1	81.25	No	5	7.91	0.83	7	8	8.5	1.5	1	100	Yes
6	7.07	1.3	7	7	8	1	0.5	91.07	Yes	8	8.67	0.7	8.75	9	9	0.3	0.1	100	Yes	6	7.75	0.62	7	8	8	1	1	100	Yes
10	7.82	0.8	7	8	8.5	1.5	0.8	98.18	Yes	10	7.73	1.7	7	8	9	2	1	93.33	Yes	13	4.25	1.66	3	5	5	2	1	41.67	No
13	3.44	1.5	3	3	4	1	0.5	71.93	No	13	3.81	1.6	3	3	4.25	1.3	0.6	75	No	14	7	1.65	7	7	8	1	1	100	Yes
14	7.38	1.1	7	7	8	1	0.5	96.43	Yes	16	7.08	0.8	7	7	7	0	0	84.62	No	15	7	0.74	7	7	7	0	0	91.67	Yes
17	6.78	1.4	6.5	7	8	1.5	0.8	80	No	17	6.81	0.4	7	7	7	0	0	81.25	No	16	6.58	2.11	6	7	8	2	1	83.33	No
18	6.7	1.4	7	7	7	0	0	82.46	No	18	6.73	1.5	7	7	7	0	0	93.33	Yes	17	4.67	2.1	3	4	4	2	2	83.33	No
19	7.53	0.8	7	8	8	1	0.5	90.91	Yes	20	1.69	1	1	1	3	2	1	100	Yes	18	5.67	1.07	5	5	7	2	1	33.33	No
20	2.54	1.2	2	2	3	1	0.5	89.47	No	21	7.14	0.9	7	7	7	0	0	92.86	Yes	19	7	0.74	7	7	7	0	0	83.33	No
21	7.13	1.2	7	7	8	1	0.5	91.07	Yes	22	7.19	0.8	7	7	7.25	0.3	0.1	93.75	Yes	20	3.5	1.17	3	3	5	2	1	66.67	No
22	7.05	0.9	7	7	7	0	0	92.73	Yes	23	2.75	2	1	2.5	3.5	2.5	1.3	81.25	No	21	7.67	0.98	7	7.5	8.25	1.3	1	91.67	Yes
23	2.91	1.3	2	3	3	1	0.5	85.71	No	24	7.67	0.8	7	7.5	8	1	0.5	100	Yes	22	5.75	0.97	5	6	6	1	1	8.33	No
25	7.04	1.4	7	8	8	1	0.5	87.27	No	27	6.73	1.4	7	7	7	0	0	93.33	Yes	23	4.75	1.54	3.75	5	6	2.3	1	33.33	No
26	7.32	0.6	7	7	8	1	0.5	96.49	Yes	28	7.4	0.9	7	7	8	1	0.5	86.67	No	26	7.25	0.87	7	7	8	1	1	83.33	No
27	6.89	1.2	7	7	7	0	0	89.29	No	29	6.69	0.6	6.75	7	7	0.3	0.1	75	No	27	6.42	1.68	6.5	7	7	0.5	0	83.33	No
28	7.02	0.9	7	7	7	0	0	89.47	No	31	3.81	1.9	3	3	4	1	0.5	100	Yes	28	7.33	1.78	8	8	8	0	0	91.67	Yes
29	6.78	1.2	7	7	7	0	0	83.33	No	33	6.75	1.2	7	7	7	0	0	93.75	Yes	29	4.67	2.06	3	4.5	4	2	2	75	No
31	4.21	2	3	3	3	1.5	0.8	82.46	No	34	7.13	0.6	7	7	7	0	0	93.75	Yes	30	6	1.35	4.75	7	7	2.3	1	58.33	No
32	7.27	1.3	7	8	8	1	0.5	87.5	No	35	6.69	1	6	7	7	1	0.5	68.75	No	31	6.58	1.62	7	7	7	0	0	91.67	Yes
33	7.11	1.1	7	7	7	0	0	87.5	No	36	7	0.7	7	7	7	0	0	91.67	Yes	33	5.25	1.86	3.75	5.5	7	3.3	2	66.67	No
34	7.11	0.6	7	7	7	0	0	92.73	Yes	39	8	0.9	7.75	8	9	1.3	0.6	93.75	Yes	34	6.33	1.37	6	6.5	7	1	1	58.33	No
35	3.36	1.5	6	7	7	1	0.5	85.71	No	40	6.31	1.9	5	6	8	3	1.5	50	No	35	6.92	1.78	6.75	7	8	1.3	1	83.33	No
37	7	1.3	7	7	8	1	0.5	84.21	No	41	5.56	1.5	5	6	6	1.3	0.6	37.5	No	36	6.17	1.99	5.25	7	7.25	2	1	91.67	Yes
39	7.29	1	7	7	8	1	0.5	92.86	Yes	42	6	1.1	5	5.5	7	2	1	43.75	No	39	7.5	0.8	7	7.5	8	1	1	91.67	Yes
40	5.16	1.7	3	5	7	4	2	57.89	No	Change to consensus										40	7.33	0.89	7	7	8	1	1	83.33	No
41	4.61	1.6	3	5	5	2	1	49.12	No	Change to consensus										41	6.58	1.51	5.75	7	8	2.3	1	66.67	No
42	5.71	1.7	5	5.5	7	2	1	58.93	No	Change to consensus										42	5.25	1.06	5	5	6	1	1	16.67	No
										Change to consensus										36.67%					30.00%				

APPENDIX 3

Global results after second round

Items	Mean	SD	1st quartile	2nd quartile median	3rd quartile	RQ	DQ	Concordance index	Confidence limits of concordance degree
1	3.52	2.25	2	3	5	3	1.5	80.23	71.81
2	6.32	1.66	5	7	7	2	1	71.26	6.75
3	6.09	1.99	5	7	7	2	1	82.56	74.54
4	4.18	2.15	3	3	6	3	1.5	72.62	73.08
5	7.99	0.86	8	8	9	1	0.5	95.4	91
6	7.03	1.71	7	7	8	1	0.5	82.76	74.82
7	7.63	1.27	7	8	8	1	0.5	95.4	91
8	7.86	1.29	7	8	9	2	1	96.39	92.38
9	7.8	1.39	7	8	9	2	1	94.25	89.36
10	7.59	1.41	7	8	9	2	1	90.7	84.56
11	8.3	0.89	8	8	9	1	0.5	100	100
12	8.15	1.01	8	8	9	1	0.5	97.73	94.72
13	3.78	1.73	3	3	5	2	1	63.22	53.09
14	7.15	1.5	7	7	8	1	0.5	92.02	86.4
15	7.8	1.04	7	8	8	1	0.5	96.59	92.8
16	7.24	1.58	7	8	8	1	0.5	90.48	84.2
17	6.34	1.77	6	7	7	1	0.5	73.56	64.29
18	6.45	1.65	5	7	7.25	2.3	1.13	72.62	63.08
19	7.1	1.54	7	7	8	1	0.5	86.36	79.19
20	2.68	1.41	2	3	3	1	0.5	79.31	70.8
21	7.18	1.19	7	7	8	1	0.5	83.53	75.64
22	6.69	1.24	6	7	7	1	0.5	72.94	63.5
23	3.7	1.96	2	3	5	3	1.5	63.95	53.8
24	7.6	1.28	7	8	8	1	0.5	95.18	90.57
25	6.95	1.75	7	7	8	1	0.5	84.09	76.45
26	7.5	0.88	7	7.5	8	1	0.5	88.64	82.01
27	6.71	1.72	7	7	8	1	0.5	88.24	81.39
28	7.14	1.36	6.25	7	8	1.8	0.88	77.91	69.14
29	6.24	1.69	6	7	7	1	0.5	74.42	65.2
30	7.1	1.4	7	7	8	1	0.5	88.64	82.01
31	5.01	2.14	3	5	7	4	2	78.16	69.48
32	7.6	1.23	7	8	8	1	0.5	84.09	76.45
33	6.09	2.08	5	7	7	2	1	77.01	68.17
34	5.89	1.16	7	7	7	0	0	79.07	70.47
35	6.49	1.85	6	7	8	2	1	80.46	72.13
36	7.29	1.06	7	7	8	1	0.5	92.77	87.2
37	7.4	1.38	7	8	8	1	0.5	85.06	77.57
38	7.34	1.3	7	8	8	1	0.5	93.1	88.77
39	7.43	1.42	7	8	8	1	0.5	89.66	83.26
40	7.5	1.96	4	6	7	3	1.5	57.47	47.08
41	5.26	1.91	4	5	7	3	1.5	52.87	42.38
42	5.7	1.78	5	6	7	2	1	51.72	41.22