

Evidence-Based Practice in Primary Health Care From The Managerial Point of View: – A National Survey

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Abstract

Background: The vast availability of and demand for evidence in modern primary health care forces clinical decisions to be made based on condensed evidence in the form of policies and guidelines. Primary health care managers play a key role in implementing these governing documents. Thus, the aim of this article was to investigate the use and availability of evidence-based practice resources from the perspective of first-line primary health care managers.

Methods: The study utilized a quantitative method based on a national survey of primary health care managers. The study population was recruited nationally from Sweden and consisted of 186 respondents. The data were analysed using empirically constructed themes and validated using factor analysis. To determine the statistical significance in making comparisons, the chi-square test was utilized. Associations between variables were calculated using Spearman's correlation. All tests were two-sided, and the significance level was set to 0.05.

Results: A majority (97%) of managers stated there was an impact of guidelines and policy documents on primary health care; 84% of managers could see a direct influence in daily practices. Most of the managers (70%) stated that some adaptation had to be made when new evidence was introduced. The managers emphasised the importance of keeping themselves updated and open to new information about work routines (96%).

Conclusions: Evidence-based practice has a fundamental impact on Swedish primary health care. The study illustrated a nearly unanimous response about evidence influencing daily practice. The emphasis on the importance of all staff members keeping their professional knowledge up to date can be seen as a direct result of this. An information-dense organization such as a primary health care organization would have much to gain from cooperation with regional information resources such as clinical libraries.

Trial registration: Not applicable.

Background

Primary health care is ordinarily the first line of care that citizens encounter when they are ill or inquisitive about health issues. As specialists in general practice, health professionals (HPs) working in primary health care centres (PHCs) have a dire task in keeping up with the latest research within their vast speciality. To stay updated, HPs have to rely upon research reviews, guidelines and policies [1, 2]. These kinds of documents are the ultimate results of the most accepted form of decision-making in medicine today: evidence-based medicine (EBM) and its practical application evidence-based practice (EBP) [1–5]. Fundamental for both concepts is the idea that decisions regarding a patient's health should be based upon the best available evidence (e.g., decision-making. study results, reviews, trials, etc.) paired with the specialist's knowhow and the patient's own preferences [6, 7]. This translates to a need for the HP to possess good communication skills, to have enough knowledge of how to identify good and reliable research and understand and assess its relevance to the individual patient's case [5, 8, 9].

The cumulative expectations of availability, information knowhow and communication skills in turn put high demands upon internal social contexts, communication and management within the health organization [10–13].

There has been no shortage of evidence-based implementation research in healthcare focusing on wider organizational perspectives, such as communication and implementation strategies [5, 8, 12, 14–19]. Although healthcare managers are frequently mentioned as having key roles in the implementation process [12, 13, 16, 20–24], there seems to be a lack of knowledge in regard to the macro level of the nature of their influence. There have been some recent developments in implementation research regarding the emergence and implementation of an evidence-based management model [23]. However, the model is heavily organization oriented and thus falls outside of the scope of this study of managers as individuals.

There are exceptions; for example, in 2003, a Scottish study investigated the attitudes of six professional groups within primary health care and their points of view on evidence-based medicine that included first-line managers [25]. There was also a systematic review of managers' influence concerning research use in nursing [16]. The impact of managers' personality and professional knowledge is a large factor in how they choose to lead and influence the rest of the staff, especially in regard to conveying attitudes and encouragement towards the individual HP ability to keep up to date and implement EBP [16, 21, 22, 25].

In the context of supplying quality information and the value of assistance in identifying relevant resources, access to hospital library resources and information specialists might help HPs by facilitating information exchange and more efficient information-seeking behaviour [13, 14, 26]. The information specialists employed by the library may also be of assistance in refining and developing research aims [13]. Information resources are considered vital for a knowledge organization such as a primary health care organization but might not always be connected to the library concept in the minds of the HPs, especially if there is a geographical distance between a library and its users [13].

There is, to our knowledge, little or no research done on the perspectives of first-line primary health care managers in regard to their habits of keeping up to date professionally and evaluating new information in their occupational role, habits that might have an influence on the facilitation of co-workers' mandatory role as up-to-date experts.

The aim of this study was to investigate the use and availability of evidence-based practice in Swedish primary health care from the perspective of first-line primary health care managers.

Methods

The study was designed as a quantitative national survey based on a questionnaire directed to HPs holding a managerial position at a public PHC. It focused upon their experience of evaluating evidence and implementing evidence-based practice. The resulting data were initially divided into four empirically deduced themes that described different aspects of experiences. A fifth theme, "library operations", was

developed due to its strong connection with library activities. Data from all themes were operationalized into two subgroups, “education” and “population”, which were subjected to statistical tests to determine their power value.

Recruitment and study population

The strategic recruitment of respondents was conducted during the first half of 2018. There were two inclusion criteria: being able to read and write Swedish and being an employee in a managerial position at a public PHC.

Questionnaire design and construction

Based on the purpose of the study a questionnaire consisting of 24 items was constructed. The questionnaire was influenced and created due to a literature review and the experience of the research team. It originated from the idea of five question clusters covering the background data (age, educational level and the size of the primary health care area), evidence-based practice, information retrieval, implementation of new information and knowledge of regional informational service suppliers (Supplement 1). These clusters were deconstructed during the analysis phase and resulted in the empirical themes of the study.

Empirical themes

Based on the research team’s preunderstanding of the research topic, the data were initially sorted into four empirical themes. A fifth theme, “library operations”, emerged during the analysis process due to its strong association with library activities (Figure 1).

Policy and guidelines

This theme encompassed items concerning the application of policy and guideline documents. The theme described the experienced impact of using such policy documents in the clinical setting and the influence of these documents on clinical decisions.

Capture

The common denominators for the items in this theme were the evaluation and adaptation of evidence intended for use in everyday clinical practice. Opinions about the process were investigated to procure and assign value to information presented to the managers in any form concerning their professional role.

Access

The attitude towards the importance of occupational information research and keeping up to date were the focus of this theme. The goal was to encompass the experience of finding information and keeping up to date.

Management

The focus of this theme was the manager's willingness to change her or his workplace. The questionnaire investigated the manager's attitude towards implementing change in her or his PHC.

Library operations

This theme included items concerning the manager's awareness of library services and the utilization of the same to increase information capture and strengthen the information skills needed to practice EBP.

Ethics

Participation was voluntary and confidentiality guaranteed. The participants were informed about the aim and structure of the study. The study conformed to the principles outlined in the Declaration of Helsinki[27].

The enquiry form was created as to be anonymous and only show the results from fully completed forms.

Data collection

Since there was no complete national record of PHCs and their staff, the research team had to compile such a record. A list of the official website of each region was acquired from the Swedish Association of Local Authorities and Regions. Guided by this list, the research team then visited each county's webpage about primary health care and manually extracted names and contact information of the managers for each individual PHC. These became the recipients of the study introduction letter and questionnaire.

One week after the first invitation letter was sent, a reminder letter was sent out to all recipients who had not filled out the survey or had started the survey but had not completed it. This process was then repeated two more times at one week intervals so that the respondents were reminded of the survey a total of four times. Each reminder targeted the non-complete or non-started respondents.

Statistics

The performance of the factor analysis follows the protocol of Williams et al. [28]. The model gives general guidelines that state a sample size minimum should be 100 samples or greater [28, 29]. This recommendation was met by our sample size, which consisted of 186 complete responses. The Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity (BTS) were used for the model relevance [28, 30, 31]. The data extraction method used was principal component analysis [28, 32, 33]. A single pure factor based on 5 items on different aspects of library activities was obtained, which was named "biolibrary activity" (Table 1).

To determine statistical significance when comparisons were made, the chi-square test was performed. The association between variables was calculated by Spearman's correlation. All tests were two-sided, and the significance level was set to 0.05.

Results

The final sample consisted of 186 respondents to the 564 requests sent, for a response rate of approximately 33%. The age of the participants was 30 to 65 years, with a median age of 53 years and a predominance of females (Table 2). The level of education was distributed almost equally, but a small majority had less education than their colleagues (first cycle of education or below). The majority of respondents managed a PHC in a region of less than or equal to 500,000 inhabitants (Table 2).

Policy and guidelines theme

Policy and guidelines had a fundamental impact upon the primary health care organization according to 97% of the respondents. This impact could also be seen in everyday practice according to 84% (Table 3A).

Concerning where to find alternate information about policies and guidelines, 70% of the responding managers stated that they knew where to find relevant alternative information. They estimated their co-workers had less knowledge of this sort, but 52% believed their co-workers possessed this knowledge (Table 3A). These answers were all independent of background variables such as primary health care area and level of education (Table 3B).

The exception was the item "Possibilities for co-workers to research information in order to keep up to date." The item describes a significant difference in view of EBP as being a burden in daily practice. The distribution of answers shows that respondents with shorter education tended to view the demands of EBP as more burdensome than colleagues with longer education (Table 3B).

Capture theme

A majority (70%) of the managers in this study answered that some time was needed to adapt new evidence to put it into practice. In spite of this, 68% stated that clinical practice was rarely inhibited by the demands of being evidence-based (Table 3A).

All items except one in this theme were independent of background variables such as the managers' primary health care area and educational level (Table 3B), except for the item that addressed managers' educational level. Managers with longer education found the demand for evidence in practice less of an obstruction than their colleagues with shorter education (Table 3B).

Access theme

Almost all (96%) of the managers thought it important for their staff to keep up to date on an individual level. In concurrence with this, the respondents generally stated that they dedicated up to three hours per week to keep up to date in their profession. In this fashion, we could see that there were some differences based on the primary health care area and the managers' allocated time for their own research. That is,

managers in larger areas put more time in personal occupational research (Table 3B). This said, there were no other differences based on the background variables.

Management theme

A total of 96% of the managers showed a positive attitude towards new ideas and thoughts about work routines, which is a clear indication of a welcoming attitude regarding change amongst managers. A majority of the respondents (70%) also thought that primary health care in general would benefit from a faster adaptation of new evidence (Table 3A). As in the previous theme, the results were independent from the two background variables (Table 3B).

Library operations theme

Focusing upon managers' knowledge of and/or cooperation with the regional clinical library, the items in this theme encompassed the presence of library resources in the managers' mind. This theme was most actualised in cases when managers stated the importance of EBP in combination with knowledge of clinical library resources. As a theme characterised by many coherent items, this was the only theme that could be validated by means of factor analysis (Table 1).

The factor of biolibrary activity

Factor analysis was used to verify the level of covariance in items concerning library operations displayed in Table 1. The results of the Kaiser-Meyer-Olkin test and Bartlett's test of sphericity were as follows: KMO = 0.78; BTS = 245.6; $p < 0.0001$. The result of factor analysis presented one pure factor, "biolibrary activity", with 62.15 degrees of cumulative variance. The Cronbach's alpha indicating the degree of internal consistency was within the recommended value range.

Association between the management's positive attitude and EBP

Management's positive attitude through adaptation of new evidence and new thoughts as well as aiding and stimulating routine in the primary health care context was correlated with some characteristic factors. These items were, for example, the degree of policy and guideline impacts in the organization that were positively correlated with co-workers' increased opportunities for obtaining up-to-date information within the organization. Consistently, the management's promotional attitude was positively and significantly correlated with all three themes: policy and guidelines, capture and access (Figure 2).

Discussion

The main result was that almost all survey respondents were impacted by policies and guidelines in clinical daily practice. Almost all respondents were positive about change and new ideas regarding the implementation of EBP. According to previous studies, this kind of positive thinking might not represent the majority of HPs within a changing organization. It is not uncommon for a certain level of reservation and scepticism to exist in the introduction of new guidelines [2, 34].

More than half of the managers indicated a perceived need to change guidelines or policies to better integrate them in daily practice. The prerequisite to be able to finish this task would be to possess sufficient information retrieval skills. According to the literature, information-seeking skills are one of the more common challenges for first line managers [14, 23, 35, 36]. However, the managers who answered our query generally responded that they spent a mean of 2–3 hours/week researching or keeping up to date within their profession. This fact could be indicative of a widespread habit of navigating information resources and a knowledge of evaluating research, thus not needing to spend excessive time in fetching information to keep oneself up to date.

Alternatively, and most likely, the time spent and stated knowledge level in information retrieval could be the result of restrictive factors such as organisational demands on time management and knowledge reviews [14, 23, 34, 37]. The literature states that some major barriers to HP information retrieval are related to resources such as time allocation towards research [8, 14, 23, 36].

There was some knowledge of the existence of the clinical library. However, library services were rarely used or marketed in such a way that the HPs could see a practical adaptation of the skillsets and resources offered by the librarians. The indication that primary health care managers in some cases neither knew about nor used the available library resources is troublesome. Problems related to information requisition and interpretation have been associated with knowledge gaps by earlier research [13, 14, 23, 26, 36].

Therefore, greater cooperation between PHCs and regional clinical libraries would be beneficial. In addition to helping the individual manager's information retrieval skills, thus saving both their time and effort in information-related topics, there are several uses for clinical library resources: increased efficiency in information dissemination, assistance by providing alternate examples concerning a research topic (diffusion of innovation), increased knowledge by staff in the form of more efficient information retrieval and, most obviously, the provision of trusted information resources. This would in the long run benefit the economy of the PHC, primary health care, personnel education and ultimately patient safety.

According to our results, respondents with longer education more often did seem to consider the absolute demand of evidence as less of an impediment in professional everyday life than colleagues with short education. This is interesting since our results thus describe a difference in perception of evidence and what EBP means in ways of efforts amongst respondents depending on educational background. This phenomenon is also supported by an earlier study that indicated that managers' attitudes towards research could be a result of their own educational level and appreciation of EBP [25].

This study's aim was to investigate managers' experiences of working according to EBP. Judging from the results, there seems to be a greatly positive managerial attitude towards evidence and implementing change. This is an important finding since managers' way of assigning priority and positive values could have a direct influence on the local work environment in either direction [16].

A final reflection upon the positive attitude towards guidelines and policies might be that primary health care is governed by laws that incorporate the principles of EBM. This should by implication mean that managers ought to be aware of the concept of evidence by default and should do anything in their power to encourage EBP in the workplace and encourage their individual co-workers to strive to keep updated. However, this is a topic that needs further research.

Limitations of the study

In the manual collection of contacts, there is always a probability of mistyping or receiving dated or even wrong contact information. The requests to participate being ignored by recipients was also prominent.

Since the maximum number of participants was 564, the total sample size could be considered good based on the general consensus in the literature [25]. However, the final sample size was set to 186, which could reduce the strength of the study.

The sample size could not have been increased since surveys were sent to the whole population and returned a total of 186 answers. Thus, a larger sample size could not have been obtained.

Conclusion

The main results of the survey indicate a strong managerial awareness of EBP and its importance to primary health care. The heavy emphasis upon evidence and its application often led to a need of adaptation of the same in order to fit everyday practice. Almost all managers underlined the importance of all HPs, including themselves, keeping up to date. The efficiency of this knowledge upkeep could be increased if staff would allocate more resources related to information retrieval and information behaviour, which are services that are offered by the local clinical libraries.

List Of Abbreviations

BTS – Bartlett's Test of Sphericity

EBM – Evidence-Based Medicine

EBP – Evidence-Based Practice

HP – Health Professional

KMO – Kaiser-Meyer-Olkin

PHC – Primary health care centre

Declarations

Ethics approval

The study was approved by the Research Ethics Committee of the University of Lund, Lund, Sweden, in 2017 (No. 2017/281).

Consent for participation

Although this study have been approved by above mentioned ethics committee, in Sweden, there has been no need for approval from an ethical board if consent is obtained from the participants and if the study does not involve a physical intervention or one that affects a person physically or psychologically [38]. Furthermore Participation was voluntary and confidentiality guaranteed. The participants were informed about the aim and structure of the study, after which they gave their informed consent.

Consent for publication

By submitting answers to our query, all participants consented to the publication of data at the group level.

Availability of data and materials

The data that support the findings of this study are available from Region Halland. Data were analysed by employees of Region Halland. Restrictions apply to the availability of these data, which were used under license for the current study and so are not publicly available. Data are, however, available from the authors upon reasonable request and with permission of the Region Halland.

Competing interests

The authors declare that they have no competing interests

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Authors' contributions

TA led the overall study. TA, HM, AK, SB, and AB designed the study. TA gathered the data, and TA, HM, AB statistically analysed the data and drafted the initial manuscript. All authors were involved in revising the manuscript. All authors read and approved the final manuscript.

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Tables

Table 1
The result of factor analysis on items belonging to biolibrary activity (n = 186).

	Impact (%)	Cumulative variance	Cronbach's alpha*
Q12: Current cooperation with clinical library.	38		
Q13: Own knowledge about clinical library services.	54		
Q14: Last contact with clinical library.	22		
Q15: Continuity of clinical library information.	28		
Q16: Flexibility in reaching clinical library.	54		
BIOLIBRARY ACTIVITY		62.15	0.78
KMO of Sampling Adequacy: 0.76			
Bartlett's test of Sphericity: $p < 0.0001$			
*Cronbach's alpha coefficient			

Table 2
 Descriptive statistics on the background variables of the population (n = 186).

	Observations (n)	Percent (%)
Age		
≤ 53 years	96	51.6
> 53 years	90	48.4
Sex		
Male	30	16.1
Female	156	83.9
Educational level		
Short	90	57.7
Long	66	42.3
Population Density		
≤ 500 000	96	57.8
> 500 000	70	42.2
Short education = first cycle education or below.		
Long education = second cycle education and higher.		

Table 3

A. Descriptive statistics for the items and teams included in the study (n = 186).

		Percent (%)	<i>p</i>
POLICY AND GUIDELINES			
Q1: Degree of impact of policy and guidelines in organization.	Large	97.0	
	Small	3.0	
			< 0.0001
Q2: Impact of policy and guidelines on everyday practice.	Impact	84.0	
	No impact	16.0	
			< 0.001
Q3: Own knowledge of where to find alternate decision support systems.	Yes	70.0	
	No	30.0	
			< 0.001
Q4: Co-workers' knowledge of where to find alternate decision support systems.	Yes	52.0	
	No	48.0	
			0.441
CAPTURE			
Q7: Time spent on reworking or creating policy documents in order to unify practice.	Little	36.0	
	Much	64.0	
			< 0.001
Q8: Demands on evidence-based practice that impede on clinical practice.	Rarely	68.0	
	Often	32.0	
			< 0.001
Q9: Evaluation of evidence when implementing new treatments.	Yes	75.0	
	No	25.0	
			< 0.001

		Percent (%)	<i>p</i>
ACCESS			
Q10: Co-workers' possibilities to research information in order to keep up to date.	Important	96.0	< 0.001
	Not important	4.0	
Q11: Time spent on information research about own occupational topics.	≤ 1 hour/week	15.0	
	2–3 hours/week	70.0	
	> 3 hours/week	15.0	
MANAGEMENT			
Q5: Primary health care would gain on faster adaptation to new evidence.	Yes	70.0	< 0.001
	No	30.0	
Q6: New thoughts and ideas about work routine is stimulating.	Yes	96.0	
	No	4.0	

Table 3

B. Descriptive statistics on the items and themes divided by education level and population size (n = 186).

		Education		Population	
		Short N = 90	Long N = 66	< 500 000 N = 80	≥ 500 000 N = 57
		Percent (%)	p	Percent (%)	p
POLICY AND GUIDELINES					
Q1: Degree of impact of policy and guidelines in organization	Large	96.0	99.0	96.0	99.0
			0.215		0.243
Q2: Impact of policies and guidelines on everyday practice	Evident impact	80.0	86.4	76.1	82.8
			0.580		0.305
Q3: Own knowledge of where to find alternate decision support systems	Yes	72.0	70	73.0	71.0
			0.786		0.777
Q4: Co-workers' knowledge of where to find alternate decision support systems	Yes	72.0	72.0	70.0	76.0
			0.999		0.394
CAPTURE					
Q7: Time spent on reworking or creating policy documents in order to unify practice.	Little	33.0	39.0	33.0	37.0
			0.441		0.594
Q8: Demands on evidence-based practice that impede on clinical practice.	Rarely	74.0	59.0	77.0	81.0
			0.049		0.536
Q9: Evaluation of evidence when implementing new treatments	Yes	74.0	80.0	76.0	67.0
			0.384		0.203
ACCESS					
Q10: Co-workers' possibilities to research information in order to keep up to date.	Important	94.0	95.0	94.0	97.0
			0.789		0.370
Q11: Time spent on information research	≤ 1 Hour/week	8.0	21.0	13.0	13.0

		Education		Population	
about own occupational topics.	2-3 Hours/Week	79.0	61.0	74.0	71.0
	>3 Hours/Week	13.0	18.0	13.0	16.0
				0.054	0.912
MANAGEMENT					
Q5: Primary health care would gain on faster	Yes	70.0	74.0	68.8	74.3
				0.585	0.618
adaptation to new evidence					
Q6: New thoughts and ideas about work routine is stimulating.	Yes	98.0	97.0	97.0	98.0

Figures

Policy and guidelines	Capture	Access	Management	Library operations
Q1: Degree of impact of policy and guidelines in organization.	Q7: Time spent on reworking or creating policy documents in order to unify practice.	Q10: Co-workers' possibilities to research information in order to keep up to date.	Q5: Primary health care would achieve faster adaptation of new evidence.	Q12: Current cooperation with clinical library.
Q2: Impact of policies and guidelines on everyday practice.	Q8: Demands on evidence-based practice that impede on clinical practice.	Q11: Time spent on information research about own occupational topics.	Q6: New thoughts and ideas about work routine is stimulating.	Q13: Own knowledge about clinical library services.
Q3: Own knowledge of where to find alternate decision support systems.	Q9: Evaluation of evidence when implementing new treatments.			Q14: Last contact with clinical library.
Q4: Co-workers' knowledge of where to find alternate decision support systems.				Q15: Continuity of clinical library information.
				Q16: Flexibility in reaching clinical library.

Figure 1

The empirical themes as well as the library operations and the relevant items.

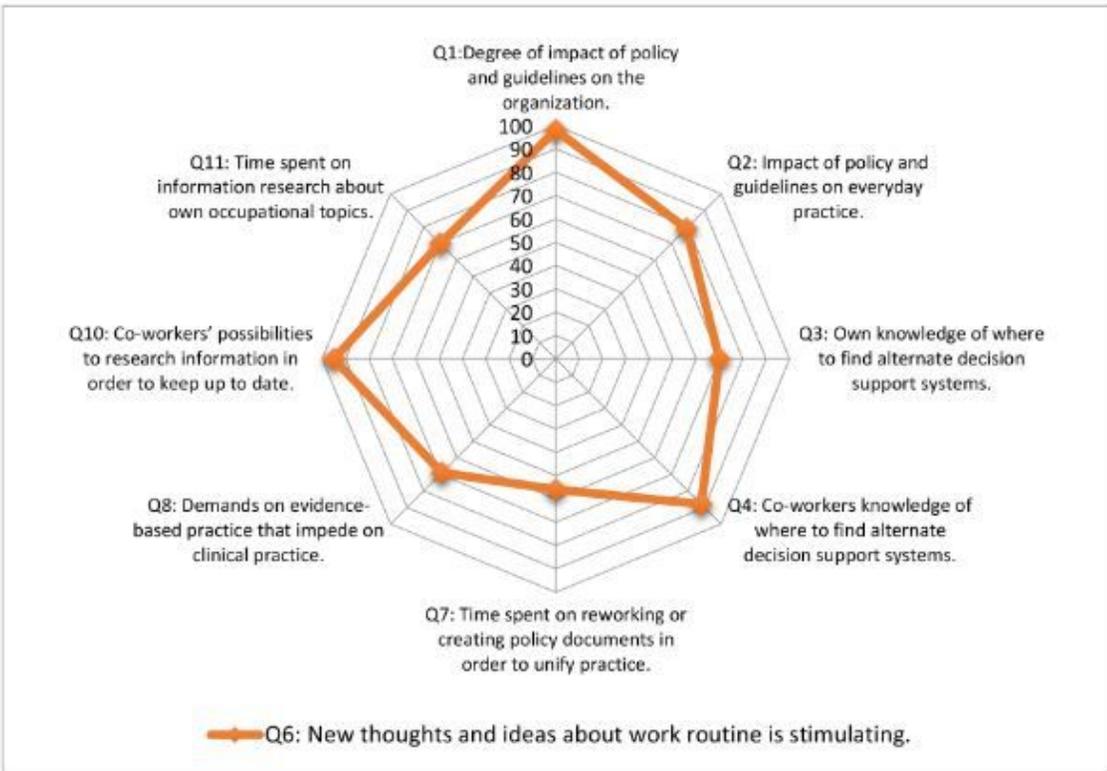
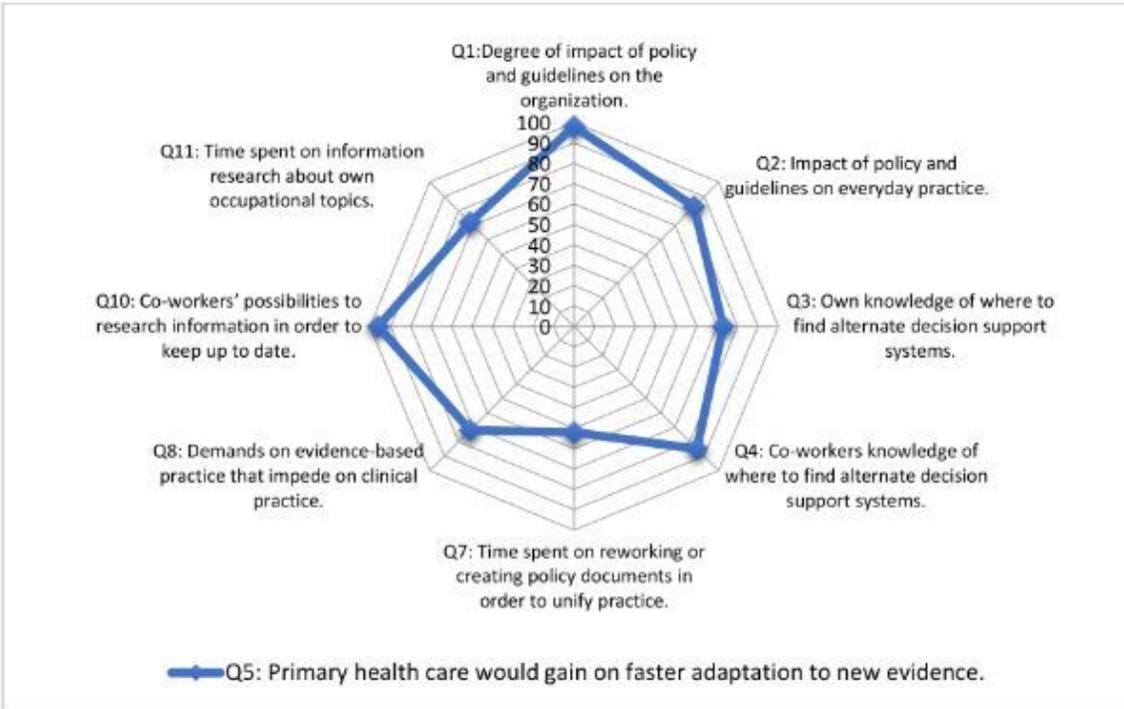


Figure 2

Management's positive attitudes to implementing evidence and new ways of thinking in primary health care.

Supplementary Files

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