

<b>Access this article online</b>
Quick Response Code:

Website: <a href="http://www.jehp.net">www.jehp.net</a>
DOI: 10.4103/jehp.jehp_1287_21

# Identification of the factors related to the clinical knowledge sharing: A protocol for systematic review

Elaheh Mazaheri, Rahele Samouei<sup>1</sup>, Mousa Alavi<sup>2</sup>, Roya Kelishadi<sup>3</sup>, Hasan Ashrafi-rizi<sup>4</sup>

*Health Information Technology Research Center, Student Research Committee, Isfahan University of Medical Sciences, Isfahan, Iran, <sup>1</sup>Social Determinants of Health Research Center, Isfahan University of Medical Sciences, Isfahan, Iran, <sup>2</sup>Department of Mental Health Nursing, School of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran, <sup>3</sup>Child Growth and Development Research Center, Primordial Prevention of Non-Communicable Diseases Research Institute, Isfahan University of Medical Sciences, Isfahan, Iran, <sup>4</sup>Health Information Technology Research Center, School of Management and Medical Information Sciences, Isfahan University of Medical Sciences, Isfahan, Iran*

**Address for correspondence:**

Prof. Hasan Ashrafi-Rizi,  
Health Information Technology Research Center, Isfahan University of Medical Sciences, Isfahan, Iran.  
E-mail: [hassanashrafi@mng.mui.ac.ir](mailto:hassanashrafi@mng.mui.ac.ir)

Received: 30-08-2021  
Accepted: 14-11-2021  
Published: 28-04-2022

## Abstract:

Today, the ability of the organizations to successfully knowledge management and sharing can help them in better performance. Effective knowledge sharing (KS) in the clinical context provides better clinical decisions and improves the quality of care services. This systematic review will be conducted to identify the factors related to the clinical KS (CKS). This systematic literature review will be conducted to search the published documents about the affecting factors on the (clinical) KS. To this end, PubMed, Scopus, Web of Science, ProQuest, Cochrane, Embase, SID, Magiran, IranDoc, and ISC will be thoroughly assessed with considered keywords and search strategy. No time limit will be considered and all relevant documents published will be evaluated until the start date of the search. To the best of our knowledge, no systematic review study has been conducted on the factors related to CKS and our research will try to comprehensively extract the effective factors in this topic. Identifying the factors affecting CKS will lead to transparency in the exchange and interpretation of clinical knowledge in clinical care delivery and making the best clinical decisions as well as improving the quality of clinical care. It will also provide a condition to facilitate the delivery of more effective clinical education for policymakers in the field of clinical education.

## Keywords:

Clinical education, clinical knowledge, clinical knowledge sharing, health personnel, physicians, systematic review

## Introduction

Today, knowledge is considered as a valuable asset and a strategic capital and resource in organizations, and providing quality and cost-effective services and products without using and managing this valuable resource is a difficult and in most cases impossible task.<sup>[1]</sup> In fact, KS in intra or inter organization level by the knowledge providers not only can increase their knowledge but also can correct some of their scientific shortcomings. It means that by sharing the knowledge, the existed knowledge of the organization will be increased without any missing and the new thoughts and ideas will be created, neither

the recipient nor the provider has previously been possessed.<sup>[2,3]</sup> In order to gain a competitive advantage, the need to share knowledge and transfer experience from professionals to novices and even peers must be considered.<sup>[4]</sup> One of the key factors in knowledge management is the ability of organizations to share knowledge.<sup>[5-8]</sup> Knowledge sharing (KS) leads to lower production costs, faster completion of new product development projects, better team performance, and innovative performance capabilities.<sup>[9,10]</sup>

Universities and educational centers, according to their traditional missions, are engaged in the transfer of knowledge through education. Therefore, in order to

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

For reprints contact: [WKHLRPMedknow\\_reprints@wolterskluwer.com](mailto:WKHLRPMedknow_reprints@wolterskluwer.com)

**How to cite this article:** Mazaheri E, Samouei R, Alavi M, Kelishadi R, Ashrafi-rizi H. Identification of the factors related to the clinical knowledge sharing: A protocol for systematic review. *J Edu Health Promot* 2022;11:142.

achieve rapid scientific progress in the country and the superior power of the region according to the 20-year vision of the Islamic Republic of Iran, synergy in education and academic research and reducing the scientific gap with developed countries will be resulted of the effective KS in universities. Universities of medical sciences, as one of the most important centers of knowledge production in the field of health, are trying to effectively transfer knowledge in order to achieve the missions of the Ministry of Health and Medical Education.<sup>[11]</sup> Therefore, to achieve this goal, faculty members should share the knowledge of educational, research, and clinical activities to meet the health information needs of the community of professionals and nonprofessionals. The use of correct methods in sharing and transferring knowledge by medical professionals during clinical training to learners in this field are important factors that have influenced the empowerment processes of clinical graduates at all levels, especially in making the right clinical decisions.<sup>[12]</sup>

Lack of KS can have negative effects on the performance of the individual and the organization, such as lack of trust, commitment as well as awareness of the usefulness of KS, poor leadership, loss of competitive advantage, and also the imposition of additional costs on the organization.<sup>[1,13,14]</sup> On the one hand, insufficient knowledge of the physicians about KS and its significant impact on the clinical decision making<sup>[15]</sup>, lack of a right pattern and structure that can effectively lead to appropriate KS performance and participatory learning; additionally to some cultural and psychological factors like the individuals' fear of putting their jobs at risk and threatening professional reputation have caused most policymakers in the educational institutions<sup>[16]</sup> to consider KS as a particular concern in the organization. Therefore, determining the effective factors in the successful KS in the clinical context is felt to achieve an efficient performance in hospitals and educational and treatment centers involved in clinical processes in order to make the best clinical decisions, reduce costs for the organization, develop the services, reduce time in delivering services and developing new productions, as well as achieve all valuable kinds of knowledge intra-organization.

Some studies have carried out with the issue of KS in the medical context among which we can mention the studies by Lin *et al.*,<sup>[17]</sup> Zhou and Nunes,<sup>[18]</sup> and Permawonguswa *et al.*,<sup>[19]</sup> but they did not discussed the related factors<sup>[19]</sup> that affect clinical KS (CKS) of the specialist physicians. In our country, most studies only address the issue of KS and the factors affecting it in nonclinical contexts, and the issue of "clinical knowledge sharing" of specialist physicians is a new topic that will be discussed in our study. Hence, the present study, with a systematic review

of published articles on KS, will extract and identify the factors that facilitate and inhibit CKS of specialist physicians to be an effective step toward transparency in the exchange and interpretation of clinical knowledge to make the best decisions and improve the quality of clinical care. It will also provide a condition to facilitate the delivery of more effective clinical education for policymakers in the field of clinical education.

This research will try to answer two following questions:

1. What are the factors that facilitate KS in clinical context?
2. What are the factors hindering the sharing of knowledge in clinical context?

## Methodology

### Inclusion and exclusion criteria

Given to preserve all valuable data, no time limit will be considered and all relevant documents published will be evaluated until the start date of the search. All initial and secondary researches will be studied for review if they have the thematic relationship with the research topic, published in the English and Persian languages. All articles types (original, review, short communication, letter to editor, editorial, etc.), conference papers, and dissertations that refer to factors related to the effective sharing of knowledge in clinical or nonclinical context will be included in the study. In order to achieve the most comprehensive search, a hand search will be carried out to find other possible studies. All retrieved documents that are irrelevant to the research query, have no open access to the full text and being in a language other than Persian and English will be excluded from the study. Of course, the researchers plan to contact the corresponding authors of some articles that do not have open access and are directly relevant to the subject via E-mail and ResearchGate profiles.

### Information sources and the search strategy

The "Preferred Reporting Items for Systematic Review and Meta-Analysis (PRISMA)" guidelines will be applied for conducting this research,<sup>[20]</sup> and a search strategy will be designed to access the relevant documents. The researchers will search the international databases including Scopus, Web of Science, PubMed, Cochrane, Embase, and ProQuest and national databases involving SID, Magiran, IranDoc, and ISC. Databases will be searched by the syntax in Supplement 1. In order to determine the relevant factors in sharing knowledge in the clinical context, Persian and English keywords in the field of subject in addition to synonyms for barriers and facilitator concepts will be used. It should be mentioned that as the present study is an interdisciplinary research, some words that are in the field of health and are covered by the MeSH thesaurus, will be searched according to

all accepted and entry terms. In the case of not given any accepted term in other fields by another thesaurus, it was try to find more equivalent for the major terms in both English and Persian dictionaries such as Merriam Webster and Dekhoda to have the best term coverage for the search. The keywords are as follow:

- “Knowledge Sharing,” “Knowledge exchange,” “Knowledge transfer,” “Knowledge giving,” “Knowledge mobilization,” “Knowledge communication,” “Knowledge interaction,” “Clinical Knowledge,” “Medical Knowledge,” “Clinical knowledge sharing,” “Medical knowledge sharing,” “Clinical knowledge exchange,” “Medical knowledge exchange,” “Clinical knowledge transfer,” “Medical knowledge transfer,” “Clinical knowledge giving,” “Medical knowledge giving,” “Clinical knowledge mobilization,” “Medical knowledge mobilization,” “Clinical knowledge communication,” “Medical knowledge communication,” “Clinical knowledge interaction,” and “Medical knowledge interaction”
- Facilitators, opportunities, moderator, coordinator, Obstacles, Barriers, Difficulties, Challenges, Obstruction, Restriction, Limits, Effective factors, Effective elements, Effective parts, Effective components, Characteristics, and Features
- HealthCare, Health Care, Medical Health Care, and Medical care.

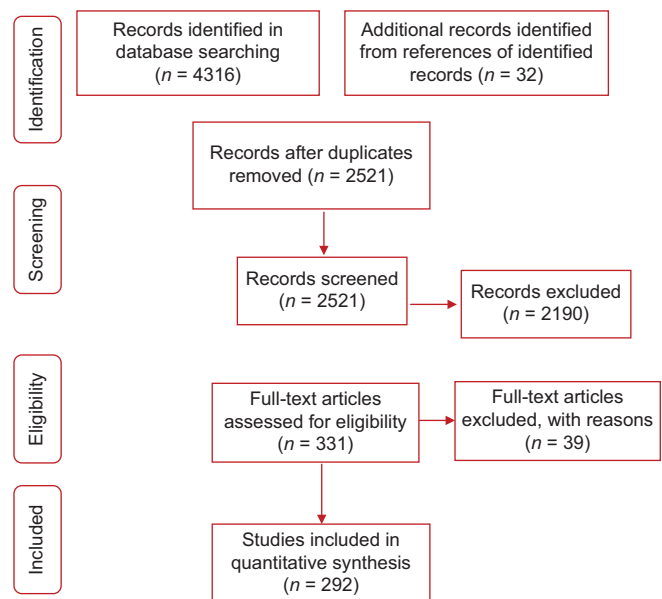
### Study registration

#### Selection process

After entering the search strategies in each of the selected databases, the search will be performed simultaneously by two researchers separately (EM/HAR). The retrieved documents will be entered into Mendeley software, version 1.11.3 (Elsevier, London, UK), and after removing duplicates, in the first step (EM), the two researchers will examine the title and abstracts for relevancy to the research topic (EM/RS). Then, the full text of the documents that are found to be relevant will be extracted, and in order to reduce the bias in the selection of studies, their full text will be reviewed again by two researchers separately and the completely related documents will be identified and discarded. According to PRISMA, all stages of the research method such as search selection of studies, qualitative evaluation, and data extraction will be done by two researchers separately. The occurrence of disagreement in the results by the third researcher will be evaluated, and if approved by the third person (HAR), as the team supervisor will enter the study [Figure 1].<sup>[20]</sup>

### Data collection process

After completing the search, data will be extracted from full text. The tools at this stage will be forms that specify what data are from the total data contained in the documents and should be extracted [Form 1].



**Figure 1:** Flow diagram showing selection of articles reviewed in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Guidelines

**Note:** This is a protocol study and the given numbers may be changed after completing the final processes.

### Risk of bias in the individual studies

Regarding the lack of limitations on the type and methodologies of initial chosen studies, there are no specific tools for quality assessment in this phase. Therefore, to assess the methodological quality of the initial studies, the quality assessment tools presented in STROBE will be applied tailored to the type of study. In this phase, the comprised studies will be evaluated by two independent reviewers according with its appropriate assessment tool for identifying the eligibility of the papers for inclusion. In this phase, the involved studies will be assessed by two independent reviewers in according to their proper evaluation tool. Any disagreements will be decided by of a third reviewer.

### Data analysis

According to the objectives of the present systematic review, in order to identify the relevant factors in the sharing of knowledge in the clinical context of the documents included in the study, the following work will be done in three steps to extract data from the text of the documents:

#### First stage

(1) The text of the articles will be studied by the first researcher (EM). (2) Based on the purpose of the research, which at this stage will be to extract the relevant factors in KS, the researcher will analyze each document more accurately and identify important and keywords and concepts in the context and after extracting them in each text will be tagged as a note. (3) After collecting the factors, they will be entered and aggregated in the data

**Form 1: Extracting effective factors in (clinical) knowledge sharing**

Author/Title/Year	Country	Publication type	Methods	Population	Identified factors	
					Barriers	Facilitators

extraction form. (4) Completed form will be sent to the second researcher for review and re-evaluation.

*Second stage*

(1) The second researcher will study the articles in detail and then evaluate the factors extracted by the first researcher, which are labeled in the text. (2) After a thorough understanding of the texts and tags, by referring to the aggregated word file in the first step, by activating the track change option, if the factors in the first step were not identified by the first researcher, it will be added to the file; if something needs to be corrected, the appropriate corrections will be made. (3) The revised form will be sent to the third researcher for final evaluation.

*Third stage*

At this stage, the third researcher will study the articles and review and re-assess the documents and then will finalize the processes performed by the first and second researchers. The corrections made by this researcher will be considered the criterion for the final judgment. At the end of this stage, we will have a completed form of extracting factors and the information of all the documents included in the study according to the inclusion and exclusion criteria based on the research topic.

Then, the data extracted by the team will be analyzed in the form of narrative by the supervisor of the team as an expert.

**Discussion**

It is expected that by identifying the factors affecting KS with emphasis on clinical context will lead to transparency in the exchange and interpretation of clinical knowledge (implicit and explicit) before, after, and during clinical care delivery, making the best clinical decisions and improving the quality of clinical care. It will also provide a condition to facilitate the delivery of more effective clinical education for policymakers in the field of clinical education.

**Ethical consideration**

Researchers will consider all ethical considerations, such as loyalty to the scientific content of the papers will included in this study.

**Acknowledgment**

All authors thank all of the researchers who provide

the access to the full text of their papers that are directly relevant to the subject and do not have open access.

**Financial support and sponsorship**

This research with Grant No. IR.MUI.RESEARCH.REC.1399.323 has been approved by Vice Chancellor for Research and Technology of Isfahan University of Medical Sciences, Iran.

**Conflicts of interest**

There are no conflicts of interest.

**References**

1. Kazemi M, Vahidi-motlagh T, Vahidi-Motlagh S A review on effective of effector factors to knowledge share in the Iranian virtual social. *Public Manage Res* 2014;7:107-28.
2. Delkir K. *Knowledge Management in Theory and Practice*. Massachusetts: Butterworth-Heinemann; 2005. p. 44.
3. Davenport TH, Prusak L. *Working Knowledge: How Organizations Manage What They Know*. Brighton, Massachusetts: Harvard Business School Press; 2000. p. 56.
4. Hinds PJ, Patterson M, Pfeffer J. Bothered by abstraction: The effect of expertise on knowledge transfer and subsequent novice performance. *J Appl Psychol* 2001;86:1232-43.
5. Zhang J, Faerman SR. The nature of knowledge and its influence on knowledge sharing practice: Experiences from building the MACROS system. In: *Proceedings of the 37<sup>th</sup> Annual Hawaii International Conference on System Sciences*. New York: Institute of Electrical and Electronics Engineers;2004. Available from: <https://ieeexplore.ieee.org/document/1265576>. [Last accessed on 2021 Dec 25].
6. Sundaresan S, Zhang Z. Facilitating knowledge transfer in organizations through incentive alignment and IT investment. In: *37<sup>th</sup> Hawaii International Conference on System Sciences*. New York: Institute of Electrical and Electronics Engineers; 2004.
7. Kim S, Lee H. Employee knowledge sharing capabilities in public & private organizations: Does organizational context matter? In: *Proceedings of the 38<sup>th</sup> Annual Hawaii International Conference on System Sciences*. New York: Institute of Electrical and Electronics Engineers;2005.
8. Chaudhry AS. Knowledge sharing practices in Asian institutions: A multi-cultural perspective from Singapore. In: *Proceedings of World Library and Information Congress: 71<sup>st</sup> IFLA General Conference and Council; "Libraries - A voyage of discovery"*. Oslo: International Federation of Library Associations and Institutions;2005. Available from: <http://www.ifla.org/IV/ifla71/papers/066e-Chaudhry.pdf>. [Last accessed on 2021 Dec 25].
9. Arthur JB, Huntley CL. Ramping up the organizational learning curve: Assessing the impact of deliberate learning on organizational performance under gain sharing. *Acad Manag J* 2005;48:1159-70.
10. Lin HF. Knowledge sharing and firm innovation capability: An empirical study. *Int J Manpow* 2007;28:315-32.
11. Nemati-Anaraki L. Inter-organizational knowledge sharing: A comprehensive model. *J Mod Med Inf Sci* 2015;1:10-24.
12. Hossein Gholi Zadeh R, Mir Kamali S. Key affecting factors on

- knowledge sharing; Case study- Ferdowsi University (Faculty of Educational Sciences and Psychology). *J Iran High Educ* 2010;3:63.
13. Keikha F. Interpersonal trust factors affecting members' knowledge sharing behavior in virtual communities. *Iran J Inform Process Manage* 2018;34:275-300.
  14. Taghipour M, Mahboobi M, Gharagozlou H. The impact of ICT on knowledge sharing obstacles in knowledge management process (Including Case-Study). *Iran J Inform Process Manage* 2016;31:1049-74.
  15. Sahebalzamani M, Adhami moghadam F, Ahmadi SH, Zare M, Hamzepour H. The relationship between learning styles with evidence-based function in clinical assistants of Kermanshah university of medical sciences hospitals. *J Jundishapur Educ Dev* 2019;10:12-20.
  16. Taghizadeh H, Ziaei Hajipirloo M. Presenting a model of relationships between knowledge sharing components in educational institutions with an interpretive structural modeling approach (case study). *J Exec Manage* 2014;5:3.
  17. Lin TC, Lai MC, Yang SW. Factors influencing physicians' knowledge sharing on web medical forums. *Health Informatics J* 2016;22:594-607.
  18. Zhou L, Nunes MB. Barriers to knowledge sharing in Chinese healthcare referral services: An emergent theoretical model. *Glob Health Action* 2016;9:29964.
  19. Permwonguswa S, Khuntia J, Yim D, Gregg D, Kathuria A. Knowledge sharing in a health infomediary: Role of self-concept, emotional empowerment, and self-esteem. *Heal Syst* 2018;7:181-94.
  20. Moher D, Liberati A, Tetzlaff J, Altman DG; PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement. *J Clin Epidemiol* 2009;62:1006-12.



### Supplement 1: Contd...

Database	Strategy
ProQuest	distribution”)[Title/Abstract] AND (facilitator*[Title/Abstract] OR opportunit*[Title/Abstract] OR moderator*[Title/Abstract] OR coordinator*[Title/Abstract] OR obstacle*[Title/Abstract] OR barrier*[Title/Abstract] OR difficult*[Title/Abstract] OR challenge*[Title/Abstract] OR obstruction*[Title/Abstract] OR restriction*[Title/Abstract] OR limit*[Title/Abstract] AND (effective[Title/Abstract] AND factor*[Title/Abstract] OR effective[Title/Abstract] AND element*[Title/Abstract] OR effective[Title/Abstract] AND part*[Title/Abstract] OR effective[Title/Abstract] AND component*[Title/Abstract] OR characteristic*[Title/Abstract] OR feature*)[Title/Abstract] AND (healthcare[Title/Abstract] OR health care[Title/Abstract] OR medical health care[Title/Abstract] OR clinical care))[Title/Abstract]) AND (English[Language]) OR (Persian[Language]) noft(“Knowledge Sharing” OR “information Sharing” OR “Knowledge exchange” OR “information exchange” OR “Knowledge transfer” OR “information transfer” OR “Knowledge giving” OR “information giving” OR “Knowledge mobilization” OR “information mobilization” OR “Knowledge communication” OR “information communication” OR “Knowledge interaction” OR “information interaction” OR “knowledge dissemination” OR “information dissemination” OR “knowledge distribution” OR “information distribution” OR “Clinical Knowledge” OR “Clinical information” OR “Medical Knowledge” OR “Medical information” OR “Clinical knowledge sharing” OR “clinical information sharing” OR “Medical knowledge sharing” OR “Medical information sharing” OR “Clinical knowledge exchange” OR “information knowledge exchange” OR “Medical knowledge exchange” OR “information knowledge exchange” OR “Clinical knowledge transfer” OR “clinical information transfer” OR “Medical knowledge giving” OR “medical information giving” OR “Clinical knowledge mobilization” OR “clinical information mobilization” OR “Medical knowledge mobilization” OR “medical information mobilization” OR “Clinical knowledge communication” OR “clinical information communication” OR “Medical knowledge communication” OR “information knowledge communication” OR “Clinical knowledge interaction” OR “medical information interaction” OR “Medical knowledge interaction” OR “medical information interaction” OR “clinical knowledge dissemination” OR “clinical information dissemination” OR “medical knowledge dissemination” OR “medical information dissemination” OR “clinical knowledge distribution” OR “clinical information distribution” OR “medical knowledge distribution” OR “medical information distribution”) AND (facilitator* OR opportunit* OR moderator* OR coordinator* OR obstacle* OR barrier* OR difficult* OR challenge* OR obstruction* OR restriction* OR limit*) AND (effective AND factor* OR effective AND element* OR effective AND part* OR effective AND component* OR characteristic* OR feature*) AND (healthcare OR health care OR medical health care OR clinical care)) Additional limits Language: English, Persian Full text
Embase	(‘knowledge sharing’:ti, ab, kw OR ‘information sharing’:ti, ab, kw OR ‘knowledge exchange’:ti, ab, kw OR ‘information exchange’:ti, ab, kw OR ‘knowledge transfer’:ti, ab, kw OR ‘information transfer’:ti, ab, kw OR ‘knowledge giving’:ti, ab, kw OR ‘information giving’:ti, ab, kw OR ‘knowledge mobilization’:ti, ab, kw OR ‘information mobilization’:ti, ab, kw OR ‘knowledge communication’:ti, ab, kw OR ‘information communication’:ti, ab, kw OR ‘knowledge interaction’:ti, ab, kw OR ‘information interaction’:ti, ab, kw OR ‘knowledge dissemination’:ti, ab, kw OR ‘information dissemination’:ti, ab, kw OR ‘clinical information’:ti, ab, kw OR ‘medical knowledge’:ti, ab, kw OR ‘medical information’:ti, ab, kw OR ‘clinical knowledge sharing’:ti, ab, kw OR ‘clinical information sharing’:ti, ab, kw OR ‘medical knowledge sharing’:ti, ab, kw OR ‘medical information sharing’:ti, ab, kw OR ‘clinical knowledge exchange’:ti, ab, kw OR ‘medical knowledge exchange’:ti, ab, kw OR ‘information knowledge exchange’:ti, ab, kw OR ‘clinical knowledge transfer’:ti, ab, kw OR ‘clinical information transfer’:ti, ab, kw OR ‘medical knowledge giving’:ti, ab, kw OR ‘medical information giving’:ti, ab, kw OR ‘clinical knowledge mobilization’:ti, ab, kw OR ‘clinical information mobilization’:ti, ab, kw OR ‘medical knowledge mobilization’:ti, ab, kw OR ‘medical information mobilization’:ti, ab, kw OR ‘clinical knowledge communication’:ti, ab, kw OR ‘clinical information communication’:ti, ab, kw OR ‘medical knowledge communication’:ti, ab, kw OR ‘information knowledge communication’:ti, ab, kw OR ‘clinical knowledge interaction’:ti, ab, kw OR ‘medical knowledge interaction’:ti, ab, kw OR ‘medical information interaction’:ti, ab, kw OR ‘clinical knowledge dissemination’:ti, ab, kw OR ‘clinical information dissemination’:ti, ab, kw OR ‘medical knowledge dissemination’:ti, ab, kw OR ‘medical information dissemination’:ti, ab, kw OR ‘clinical knowledge distribution’:ti, ab, kw OR ‘clinical information distribution’:ti, ab, kw OR ‘medical knowledge distribution’:ti, ab, kw OR ‘medical information distribution’:ti, ab, kw) AND (facilitator*:ti, ab, kw OR opportunit*:ti, ab, kw OR moderator*:ti, ab, kw OR coordinator*:ti, ab, kw OR obstacle*:ti, ab, kw OR barrier*:ti, ab, kw OR difficult*:ti, ab, kw OR challenge*:ti, ab, kw OR obstruction*:ti, ab, kw OR restriction*:ti, ab, kw OR limit*:ti, ab, kw) AND (((effective: ti, ab, kw AND factor*:ti, ab, kw OR effective: ti, ab, kw) AND element*:ti, ab, kw OR effective: ti, ab, kw) AND part*:ti, ab, kw OR effective: ti, ab, kw) AND component*:ti, ab, kw OR characteristic*:ti, ab, kw OR feature*:ti, ab, kw) AND (healthcare: ti, ab, kw OR ‘health care’:ti, ab, kw OR ‘medical health care’:ti, ab, kw OR ‘clinical care’:ti, ab, kw) AND ([english]/lim OR [persian]/lim)
Cochrane	(“Knowledge Sharing” OR “information Sharing” OR “Knowledge exchange” OR “information exchange” OR “Knowledge transfer” OR “information transfer” OR “Knowledge giving” OR “information giving” OR “Knowledge mobilization” OR “information mobilization” OR “Knowledge communication” OR “information communication” OR “Knowledge interaction” OR “information interaction” OR “knowledge dissemination” OR “information dissemination” OR “knowledge distribution” OR “information distribution” OR “Clinical Knowledge” OR “Clinical information” OR “Medical Knowledge” OR “Medical information” OR “Clinical knowledge sharing” OR “clinical information sharing” OR “Medical knowledge sharing” OR “Medical information sharing” OR “Clinical knowledge exchange” OR “information knowledge exchange” OR “Medical knowledge exchange” OR “information knowledge exchange” OR “Clinical knowledge transfer” OR “clinical information transfer” OR “Medical knowledge giving” OR “medical information giving” OR “Clinical knowledge mobilization” OR “clinical information mobilization” OR “Medical knowledge mobilization” OR “medical information mobilization” OR “Medical knowledge communication” OR “clinical information communication” OR “Medical knowledge communication” OR “information knowledge communication” OR “Clinical knowledge interaction” OR “medical information interaction” OR “Medical knowledge interaction” OR “medical information interaction” OR “clinical knowledge dissemination” OR “clinical information dissemination” OR “medical knowledge dissemination” OR “medical information dissemination” OR “clinical knowledge distribution” OR “clinical information distribution” OR “medical knowledge distribution” OR “medical information distribution”) AND (facilitator* OR opportunit* OR moderator* OR coordinator* OR obstacle* OR barrier* OR difficult* OR challenge* OR obstruction* OR restriction* OR limit*) AND (effective AND factor* OR effective AND element* OR effective AND part* OR effective AND component* OR characteristic* OR feature*) AND (healthcare OR health care OR medical health care OR clinical care))

Contd...

### Supplement 1: Contd...

Database	Strategy
	"Clinical knowledge communication" OR "clinical information communication" OR "Medical knowledge communication" OR "information knowledge communication" OR "Clinical knowledge interaction" OR "medical information interaction" OR "Medical knowledge interaction" OR "medical information interaction" OR "clinical knowledge dissemination" OR "clinical information dissemination" OR "medical knowledge dissemination" OR "medical information dissemination" OR "clinical knowledge distribution" OR "clinical information distribution" OR "medical knowledge distribution" OR "medical information distribution") AND (facilitator* OR opportunit* OR moderator* OR coordinator* OR obstacle* OR barrier* OR difficult* OR challenge* OR obstruction* OR restriction* OR limit*) AND (effective AND factor* OR effective AND element* OR effective AND part* OR effective AND component* OR characteristic* OR feature*) AND (healthcare OR health care OR medical health care OR clinical care)