

BMJ Open Medical overuse in the Iranian healthcare system: a systematic review protocol

Morteza Arab-Zozani,¹ Mohammad Zakaria Pezeshki,² Rahim Khodayari-Zarnaq,³ Ali Janati⁴

To cite: Arab-Zozani M, Pezeshki MZ, Khodayari-Zarnaq R, *et al.* Medical overuse in the Iranian healthcare system: a systematic review protocol. *BMJ Open* 2018;**8**:e020355. doi:10.1136/bmjopen-2017-020355

► Prepublication history for this paper is available online. To view these files, please visit the journal online (<http://dx.doi.org/10.1136/bmjopen-2017-020355>).

Received 29 October 2017

Revised 10 March 2018

Accepted 13 March 2018



¹Iranian Center of Excellence in Health Management, Department of Health Services Management, School of Management and Medical Informatics, Tabriz University of Medical Sciences, Tabriz, Iran

²Social Determinants of Health Research Center, Department of Community and Family Medicine, Tabriz Medical School, Tabriz University of Medical Sciences, Tabriz, Iran

³Tabriz Health Services Management Research Center, Health Management and Safety Promotion Research Institute, Tabriz University of Medical Sciences, Tabriz, Iran

⁴Iranian Center of Excellence in Health Management, Department of Health Services Management, School of Management and Medical Informatics, Tabriz University of Medical Sciences, Tabriz, Iran

Correspondence to

Dr Ali Janati;
janatali82@gmail.com

ABSTRACT

Introduction Lack of resources is one of the main problems of all healthcare systems. Recent studies have shown that reducing the overuse of medical services plays an important role in reducing healthcare system costs. Overuse of medical services is a major problem in the healthcare system, and it threatens the quality of the services, can harm patients and create excess costs for patients. So far, few studies have been conducted in this regard in Iran. The main objective of this systematic review is to perform an inclusive search for studies that report overuse of medical services in the Iranian healthcare system.

Method and analysis An extensive search of the literature will be conducted in six databases including PubMed, Embase, Scopus, Web of Science, Cochrane and Scientific Information Database using a comprehensive search strategy to identify studies on overuse of medical care. The search will be done without time limit until the end of 2017, completed by reference tracking, author tracking and expert consultation. The search will be conducted on 1 February 2018. Any study that reports an overuse in a service based on a specific standard will be included in the study. Two reviewers will screen the articles based on the title, abstract and full text, and extract data about type of service, clinical area and overuse rate. Quality appraisal will be assessed using the Joanna Briggs Institute checklist. Potential discrepancies will be resolved by consulting a third author.

Ethics and dissemination Recommendations will be made to the Iranian MOHME (Ministry of Health and Medical Education) in order to make better evidence-based decisions about medical services in the future.

PROSPERO registration number CRD42017075481

INTRODUCTION

Medical overuse is often defined as the services that are more harmful than beneficial, does not seem to increase the quality and quantity of life, imposes excessive costs on the patient and the healthcare system, has low quality and if the patient has enough information, he or she will not ask for it.¹⁻³

Based on the WHO Health Systems Framework,⁴ overuse can delay access to four main goals of health systems—improved health, responsiveness, financial risk protection and

Strengths and limitations of this study

- To our knowledge, the study will provide the first systematic review focused on overuse of medical services in the Iranian healthcare system.
- This study could inform decision-makers and physicians to distinguish the area of overuse in medical services and plan to reduce it.
- All stages of the study (screening, quality appraisal, data extraction) will be done by two researchers independently.
- The dispersion of studies in the field of overuse and the difficulty of classifying final studies is one of the possible constraints.

efficiency—by increasing disadvantages and costs of medical services.⁵ In a health system where overuse of medical services is prevalent,⁶⁻⁸ it probably does not have a high-quality health service⁹ because, according to this framework, a good health service is a service that is delivered effectively and safe with high quality and without waste of resources.¹⁰ Also, in such a system, the workforce does not function effectively because of the fear of legal follow-up.⁴

Over the past few years, there has been a lot of effort in identifying the overuse of medical services in the world.¹¹⁻¹³ Some of these initiatives include ‘Choosing Wisely’, an initiative of the ABIM foundation, ‘Less Is More’ series by *JAMA Internal Medicine*, and ‘Too Much Medicine’ and ‘Overdiagnosis’ series by *BMJ*.^{14 15}

As with other countries in Iran, there is little information about the amount and drivers of medical overuse in the healthcare system.¹⁶ Also, there is no study that thoroughly examines overuse of medical services. So, the identification of overuse in medical services helps patients, practitioners, researchers, administrators and decision-makers of the healthcare system to manage costs, disadvantages and benefits of services and ultimately balance the use of services.

The objectives are to (1) systematically review and identify literature on the overuse of medical services, (2) identify the areas in which the overuse of medical services will take place and (3) determine the rate of overuse of medical services in the Iranian healthcare system.

METHODS

Study method

We will conduct a systematic review in accordance with the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA).¹⁷ We used the PRISMA because its use would reduce the risk of flawed reporting and increase the transparency and clarity of the systematic review reports.¹⁷

The review protocol was registered in PROSPERO (registration no. CRD42017075481; http://www.crd.york.ac.uk/PROSPERO/display_record.php?ID=CRD42017075481).

Eligibility criteria

All published studies that investigated the overuse of medical services will be included in the study. The included studies will not be limited based on study type. Our definition of overuse will be based on Saini *et al* in the recent Right Care Lancet series ('Provision of a service that is unlikely to increase the quality or quantity of life, that poses more harm than benefit, or that patients who were fully informed of its potential benefits and harms would not have wanted').^{13 12} Only studies will be included that have addressed overuse in the Iranian healthcare system. Studies will be limited in English and Farsi languages. Articles will be excluded if the researchers do not have access to the full text.

Search strategy and data sources

An extensive search of the literature will be conducted in six databases including PubMed, Embase, Scopus, Web of Science, Cochrane and Scientific Information Database (SID) using a comprehensive search strategy to identify studies on overuse of medical services without time limit until the end of 2017, completed by reference tracking, author tracking and expert consultation. SID is a database that categorised Iranian research–scientific journals in scientific groups and initiated its mission in August 2004 (<http://www.sid.ir/En/Journal/>). We use a combination of Medical Subject Headings (MeSH) terms and free term to maximise the sensitivity of the search. The search will be done on 1 February 2018.

Proposed search strategy (PubMed);

1. Medical overuse_[MeSH Term]
2. Overuse ti,ab.
3. Overmedicalization ti,ab.
4. Overtreatment* ti,ab.
5. Overdiagnosis* ti,ab.
6. Inappropriate care ti,ab.
7. Unnecessary ti,ab.
8. Overutilization ti,ab.

9. Medicalization* ti,ab.
10. Overmedication ti,ab.
11. Misdiagnosis ti,ab.
12. 'Unwanted care' ti,ab.
13. Polypharmacy ti,ab.
14. 'Inappropriate medication' ti,ab.
15. Overprescription ti,ab.
16. Value-based care ti,ab.
17. Right care ti,ab.
18. Delivery of Healthcare_[MeSH Term]
19. Health services_[MeSH Term]
20. Medical services
21. Iran
22. 1 Or 2 Or 3 Or 4 Or 5 Or 6 Or 7 Or 8 Or 9 Or 10 Or 11 Or 12 Or 13 Or 14 Or 15 Or 16 OR 17
23. 18 OR 19 OR 20
24. 21 AND 22 AND 23

Study selection process and data extraction

After completing the search, the retrieved records will be imported into the EndNote software (V.X8), and then the duplicate records will be deleted. Two independent reviewers will screen the articles based on the title, abstract and full text, and extract data about authors, publication year, type of study, study population, type of service, clinical area, and overuse rate or range. All disagreements in each level of study will be noted and resolved by consensus with a third researcher.¹⁸

Quality appraisal

Poor-quality studies can distort and affect the quality of the results.¹⁹ Due to the possible wide range of included studies, we will use the Joanna Briggs Institute (JBI) checklists according to the type of included studies.²⁰ The JBI is an international institution aimed at enhancing evidence-based healthcare by providing access to health-related resources. The JBI critical appraisal checklists are developed and approved by JBI scientific committee. These tools are designed for various types of studies and are available online (<http://joannabriggs.org/research/critical-appraisal-tools.html>). Two researchers will independently appraise the quality of included studies. All potential discrepancies will be resolved through consultation with the third researcher. The risk of bias assessment will be performed based on the Cochrane Risk of Bias Tool. For this purpose, items such as the selection bias, performance bias, detection bias, attrition bias and reporting bias will be checked.²¹

Patient and public involvement

Given that the design of the study is systematic review, the patients and/or public are not involved in it.

Data synthesis

We will categorise the results of the included studies based on publication year, clinical area, type of service (diagnostic tests, therapeutic procedures and medications), and range or rate of overuse. If the studies are homogeneous, meta-analysis will be done using quantitative data

from individual studies. We will pool the data of overuse rate based on type of services. Otherwise, we use narrative method for reporting the results based on type of services and clinical areas (overuse of medication, therapeutic procedure and screening test). Also, we will report the services that have the largest number of overuse.

ETHICS AND DISSEMINATION

Like the rest of the world, there is little evidence about overuse of medical services in the Iranian healthcare system.²² Reducing the overuse of medical services require extensive studies at the national and regional levels. We are hopeful that this systematic review will provide useful results in identifying overuse of medical services in the Iranian healthcare system. We are hopeful that the result of this systematic review will make robust and valuable evidence for informed policy making. However, we note that we are still at the beginning of a long journey, and the need to conduct studies in this field is felt more than ever.

Contributors MA-Z and MZP initiated and conceived the study. AJ and RK-Z participated in study design. MA-Z drafted the research protocol. MZP, AJ and RK-Z critically revised the content of the written protocol. All authors approved the final version of this protocol.

Funding This study was approved by Tabriz University of Medical Sciences (confirmation no. 5/d/633456, 15 January 2018; IR.TBZMED.REC.1396.908). This work was supported by the Iranian Center of Excellence in Health Management (ICEHM), School of Management and Medical Informatics, Tabriz University of Medical Sciences, Tabriz, Iran.

Competing interests None declared.

Patient consent Not required.

Ethics approval This study was approved by Tabriz University of Medical Sciences (ethical confirmation number; IR.TBZMED.REC.1396.908).

Provenance and peer review Not commissioned; externally peer reviewed.

Author note This systematic review will form part of MA-Z's PhD dissertation, supervised by AJ, MZP and RK-Z.

Open Access This is an Open Access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited and the use is non-commercial. See: <http://creativecommons.org/licenses/by-nc/4.0/>

© Article author(s) (or their employer(s) unless otherwise stated in the text of the article) 2018. All rights reserved. No commercial use is permitted unless otherwise expressly granted.

REFERENCES

1. Elshaug AG, Rosenthal MB, Lavis JN, *et al.* Levers for addressing medical underuse and overuse: achieving high-value health care. *Lancet* 2017;390:191–202.
2. Morgan DJ, Leppin AL, Smith CD, *et al.* A practical framework for understanding and reducing medical overuse: conceptualizing overuse through the patient-clinician interaction. *J Hosp Med* 2017;12:346–51.
3. Brownlee S, Chalkidou K, Doust J, *et al.* Evidence for overuse of medical services around the world. *The Lancet* 2017;390:156–68.
4. World Health Organization. *Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies*: World Health Organization, 2010.
5. Korenstein D, Falk R, Howell EA, *et al.* Overuse of health care services in the United States: an understudied problem. *Arch Intern Med* 2012;172:171–8.
6. Brownlee S. *Over-treated: why too much medicine is making us sicker and poorer*: Bloomsbury Publishing USA, 2010.
7. Kale MS, Bishop TF, Federman AD, *et al.* Trends in the overuse of ambulatory health care services in the United States. *JAMA Intern Med* 2013;173:142–8.
8. Welch HG, Schwartz L, Woloshin S. *Overdiagnosed: making people sick in the pursuit of health*: Beacon Press, 2011.
9. Berwick DM. Avoiding overuse—the next quality frontier. *Lancet* 2017;390:102–4.
10. Lipitz-Snyderman A, Bach PB. Overuse: when less is more... more or less. *JAMA Intern Med* 2013;173:1277–8.
11. Powell AA, Bloomfield HE, Burgess DJ, *et al.* A conceptual framework for understanding and reducing overuse by primary care providers. *Med Care Res Rev* 2013;70:451–72.
12. Saini V, Brownlee S, Elshaug AG, *et al.* Addressing overuse and underuse around the world. *Lancet* 2017;390:105–7.
13. Morgan DJ, Brownlee S, Leppin AL, *et al.* Setting a research agenda for medical overuse. *BMJ* 2015;351:h4534.
14. Rosenberg A, Agiro A, Gottlieb M, *et al.* Early trends among seven recommendations from the choosing wisely campaign. *JAMA Intern Med* 2015;175:1913–20.
15. Rumball-Smith J, Shekelle PG, Bates DW. Using the electronic health record to understand and minimize overuse. *JAMA* 2017;317:257–8.
16. Keyhani S, Falk R, Bishop T, *et al.* The relationship between geographic variations and overuse of healthcare services: a systematic review. *Med Care* 2012;50:257–61.
17. Liberati A, Altman DG, Tetzlaff J, *et al.* The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions: explanation and elaboration. *PLoS Med* 2009;6:e1000100.
18. Reviews UoY Cf, Dissemination. *Systematic reviews: CRD's guidance for undertaking reviews in health care*: University of York, Centre for Reviews & Dissemination, 2009.
19. The Joanna Briggs Institute. Checklist for systematic reviews and research syntheses. 2017 <http://joannabriggs.org/research/critical-appraisal-tools.html>
20. Porritt K, Gomersall J, Lockwood C. JBI's systematic reviews: study selection and critical appraisal. *Am J Nurs* 2014;114:47–52.
21. Higgins JP, Altman DG, Gøtzsche PC, *et al.* The Cochrane collaboration's tool for assessing risk of bias in randomised trials. *BMJ* 2011;343:d5928.
22. Arab-Zozani M. *A policy package for preventing overuse and underuse in Iranian health system*, 2017. PhD dissertation.