



دانشگاه علوم پزشکی و خدمات بهداشتی درمانی کرمان

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## عنوان:

طراحی و ارائه مدل اعمال پیشگیری سطح چهارم برای خدمات پزشکان خانواده روستایی ایران

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### چکیده

#### مقدمه و اهداف:

ارائه خدمات بیش از حد پزشکی، هزینه بر و آسیب رسان است. به منظور کاهش استفاده از خدمات غیرضروری، مفهوم جدیدی از پیشگیری تحت عنوان پیشگیری سطح چهارم در علم پزشکی مطرح شد. پیشگیری سطح چهارم با رویکردی اخلاقی در عین حفاظت از بیمار و حفظ منافع وی میتواند موجب افزایش کیفیت ارائه خدمات و کاهش اتلاف منابع و هزینه ها شود. این مطالعه با هدف بررسی شواهد در ارتباط با استقرار پیشگیری سطح چهارم در خدمات یزشکان خانواده و ارائه مدل انجام شد.

## روش ها:

مطالعه حاضر یک پژوهش ترکیبی است که در ٤ گام انجام خواهد شد. ابتدا با انجام یک مطالعه مرور نظام مند شواهد موجود در ارتباط با اعمال پیشگیری سطح چهارم در خدمات پزشکان خانواده / عمومی شناسایی شد. سپس در قسمت کیفی مطالعه با استفاده از مصاحبه نیمه ساختاریافته وضعیت موجود، چالشها و راهکارهای اعمال پیشگیری سطح چهارم در نظام سلامت برای خدمات پزشکان خانواده روستایی ایران بررسی شد. در مرحله بعد با استفاده از نشست خبرگان و مدلسازی ساختاری-تفسیری مدل اعمال پیشگیری سطح چهارم در نظام سلامت برای خدمات پزشکان خانواده روستایی ایران ارائه شد. در نهایت چشم انداز اعمال پیشگیری سطح چهارم در نظام سلامت برای خدمات پزشکان خانواده روستایی ایران با استفاده از مدل آمس ارائه گردید.

#### يافتهها:

طبق نتایج مرور نظام مند ۲۸ مطالعه یافت شد که در نهایت ۷ مقاله وارد فراترکیب شدند که به بررسی محرکهای ارائه خدمات بیش از حد پزشکی در بین پزشکان خانواده پرداخت و عوامل مرتبط با بیمار، پزشک، نظام سلامت و فناوری را شناسایی نمود. همچنین طبق نتایج مطالعه کیفی دلایل عدم ارائه خدمات ضروری در سطح پزشک

خانواده در ۵ دسته شرایط علی( پزشک، بیمار، نظام سلامت)، پدیده اصلی(اعتلای پیشگیری سطح چهارم)، شرایط مداخله گر و زمینهای( فناورانه، اجتماعی، اقتصادی، سیاسی، فرهنگی)، راهبردها(همکاری دورن بخشی و رهبری برون بخشی) و پیامدها(کارایی و ایمنی جامعه) طبقه بندی شدند. در مرحله مدلسازی ساختاری-تفسیری عوامل ۲۰ گانه در پنج سطح طبقه بندی گردید. نتایج نشان داد منافع بیمار و گروه های آسیب پذیر بیشترین اثرگذاری و تعهد مسئولین و سیاستگذاران به حمایت جدی از پزشک خانواده، بیشترین تأثیرپذیری را دارند. بر اساس تحلیل MICMAC عوامل در دو خوشه پیوندی و وابسته قرار گرفتند. در نهایت مدل پیشنهادی این پژوهش با تمرکز بر مدل آمس ارائه شد.

## بحث و نتیجه گیری:

عوامل اصلی استفاده بیش از حد، علت ها و راه حل ها عمدتا خارج از مسئولیت و توانایی پزشکان خانواده به تنهایی است. همکاری پزشکان خانواده در مدیریت استفاده بیش از حد پزشکی، نادیده گرفته میشود. همچنین ارائه مراقبت بیش از حد در سطوح بالاتر (سطح دوم و سوم) نشان دهنده نقش حداقلی دروازهبانی پزشکان خانواده در کنترل این امر میباشد. نقص در ساختار سازمانی ارائه مراقبت های اولیه و عدم پیادهسازی مناسب سیستم مراقبت های اولیه یکی از دلایل استفاده بیش از حد در سیستم های سلامت میباشد. تهیه راهنماهایی که صراحتا موارد ضروری و غیرضروری را بیان کنند و صریحاً به عدم انجام برخی خدمات درمانی یا تشخیصی اشاره نماید، الزامی است. سیستم سلامت باید تلاش زیادی برای تقویت مسئولیت شخصی و تعهد پزشکان خانواده داشته باشد. الگوی ارائه شده با در نظر گرفتن تمام جوانب و با ارائه تمامی ارکان، دید جامعی را در این زمینه به سیاست گذاران در حوزه تصمیم گیری کلان و مدیران در حوزه اجرای فرایند پیشگیری سطح چهارم در سطح پزشک خانواده ارائه کرده که امید است گامی موثر در کاهش خدمات غیرضروری و ارتقای اثربخش ارائه خدمات ضروری باشد.

**کلمات کلیدی:** پیشگیری سطح چهارم، پزشک خانواده، کیفی، مدلسازی ساختاری تفسیری، چشم انداز.

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- 1. McKenna C, Burch J, Suekarran S, Walker S, Bakhai A, Witte K, et al. A systematic review and economic evaluation of the clinical effectiveness and cost-effectiveness of aldosterone antagonists for postmyocardial infarction heart failure. Health Technol Assess. 2010;14(24):1-162.
- 2. Davari M. Economic challenges of iran's health system. HIM. 2012;8(7):915-17.
- 3. khosravi S. Education about quaternary prevention: A necessity. SDME. 2016;13(4):432-3.
- 4. Ebadi M, Montazeri A, Azin S.A, Shahidzadeh A, Harirchi A.M, Baradaran Moghadam H.R, et al. Job satisfaction among general practitioners in private clinics intehran, iran Health Monitor. Payesh. 2005;4(3):189-95.
- 5. Sadoughi F, Ahmadi M, Moghaddasi H, Sheikhtaheri A. Patient safety information system: Purpose, structure and functions. J Mazandaran Univ Med Sci. 2011;21(85):174-88.
- 6. asefzade S, mehrabian F, nikpey A, kianmehr S. Assessment of patient safety based on standards of patient safety friendly hospitals in education and treatment centers of rasht city in 2013. RME. 2013;5(1):36-44.
- 7. Cuba Fuentes MS, Zegarra Zamalloa CO, Reichert S, Gill D. Attitudes, perceptions and awareness concerning quaternary prevention among family doctors working in the social security system, peru:

  A cross-sectional descriptive study. Medwave. 2016;16(3):e6433.
- 8. Martins C, Azevedo LF, Ribeiro O, Sá L, Santos P, Couto L, et al. A population-based nationwide cross-sectional study on preventive health services utilization in portugal—what services (and frequencies) are deemed necessary by patients? PLoS One. 2013;8(11):e81256.

- 9. Cardoso RV. Quaternary prevention: A gaze on medicalization in the practice of family doctors. Rev Bras Med Fam Comunidade. 2015;10(35).
- 10. Pandve H. Changing concept of disease prevention: From primordial to quaternary. AMHS. 2014;2(2):254-6.
- 11. Pezeshki MZ, Pezeshki S. Educating quaternary prevention (p4) in iran for decreasing the harms and costs of unnecessary services in clinical medicine and public health Health Monitor. Payesh. 2013;12(4):329-33.
- 12. Jamoulle M. Quaternary prevention: First, do not harm. Rev Bras Med Fam Comunidade. 2015;10(35):1-3.
- 13. Jamoulle M. Quaternary prevention, an answer of family doctors to overmedicalization. Int J Health Policy Manag. 2015;4(2):61-4.
- 14. Martins C, Godycki-Cwirko M, Heleno B, Brodersen J. Quaternary prevention: Reviewing the concept. Eur J Gen Pract. 2018;24(1):106-11.
- 15. Kuehlein T, Sghedoni D, Visentin G, Gérvas J, Jamoulle M. Quaternary prevention: A task of the general practitioner. Primary Care. 2010;18.
- 16. Leavell H, Clark EG. Medicina preventiva. São pau lo. McGraw Hill. 1977;19:76.
- 17. Morgan DJ, Dhruva SS, Coon ER, Wright SM, Korenstein DJJim. 2018 update on medical overuse. JAMA Intern Med. 2019;179(2):240-6.
- 18. Morgan DJ, Wright SM, Dhruva S. Update on medical overuse. JAMA Intern Med. 2015;175(1):120-4.

- 19. Jørgensen JT, Andersen JS, Tjønneland A, Andersen ZJ. Determinants of frequent attendance in danish general practice: A cohort-based cross-sectional study. BMC Fam Pract. 2016;17(1):9.
- 20. Glasziou P, Moynihan R, Richards T, Godlee F. Too much medicine; too little care. BMJ. 2013;347:f4247.
- 21. Grady D, Redberg RF. Advancing medical professionalism and the choosing wisely campaign—reply. JAMA Intern Med. 2015;175(3):465-.
- 22. Santa JS, editor Communicating information about "what not to do" to consumers. BMC Med Inform Decis Mak; 2013: BioMed Central.
- 23. Rosenberg A, Agiro A, Gottlieb M, Barron J, Brady P, Liu Y, et al. Early trends among seven recommendations from the choosing wisely campaign. JAMA Intern Med. 2015;175(12):1913-20.
- 24. Jamoulle M, Roland M, Bae J-M, Heleno B, Visentin G, Gusso GDF, et al. Ethical, pedagogical, socio-political and anthropological implications of quaternary prevention. Rev Bras Med Fam Comunidade. 2018;13(40):1-14.
- 25. Balint M. The doctor, his patient, and the illness. Lancet. 1955;265(6866):683-8.
- 26. Illich I. Medical nemesis: The expropriation of health: KKIEN Publ. Int.; 2020.
- 27. Engel GL. The need for a new medical model: A challenge for biomedicine. Science. 1977;196(4286):129-36.
- 28. Hazard A, Debin M, Hervé C, Guerrisi C, Bonnet C, François M. Implementation of a top five list to identify medical overuse in general practice according to patients' viewpoint in 2019 in france. BMC Fam Pract. 2021;22(1):134.

- 29. Moynihan R, Nickel B, Hersch J, Beller E, Doust J, Compton S, et al. Public opinions about overdiagnosis: A national community survey. PLoS One. 2015;10(5):e0125165.
- 30. Moynihan R, Doust J, Henry D. Preventing overdiagnosis: How to stop harming the healthy. BMJ. 2012;344:e3502.
- 31. Berwick DM, Hackbarth AD. Eliminating waste in us health care. JAMA. 2012;307(14):1513-6.
- 32. Fisher ES, Bynum JP, Skinner JS. Slowing the growth of health care costs--lessons from regional variation. N Engl J Med. 2009;360(9):849-52.
- 33. Frakes M, Gruber J. Defensive medicine: Evidence from military immunity. Am Econ J Econ Policy. 2019;11(3):197-231.
- 34. Emanuel EJ, Fuchs VR. The perfect storm of overutilization. JAMA. 2008;299(23):2789-91.
- 35. Brownlee S, Chalkidou K, Doust J, Elshaug AG, Glasziou P, Heath I, et al. Evidence for overuse of medical services around the world. Lancet. 2017;390(10090):156-68.
- 36. Schoen C, Osborn R, Squires D, Doty M, Rasmussen P, Pierson R, et al. A survey of primary care doctors in ten countries shows progress in use of health information technology, less in other areas. Health Aff (Millwood). 2012;31(12):2805-16.
- 37. Panella M, Leigheb F, Rinaldi C, Donnarumma C, Tozzi Q, Di Stanislao F. Defensive medicine: Defensive medicine: Overview of the literature. Ig Sanita Pubbl. 2015;71(3):335-51.
- 38. Selby K, Cornuz J, Cohidon C, Gaspoz J-M, Senn N. How do swiss general practitioners agree with and report adhering to a top-five list of unnecessary tests and treatments? Results of a cross-sectional survey. Eur J Gen Pract. 2018;24(1):32-8.

- 39. Horvath K, Siebenhofer A. The choosing wisely initiative: A critical analysis with a special focus on primary care. ZEFQG. 2017;129:31-6.
- 40. Garrow JS. How much of orthodox medicine is evidence based? BMJ. 2007;335(7627):951-.
- 41. Sirovich BE, Woloshin S, Schwartz LM. Too little? Too much? Primary care physicians' views on us health care: A brief report. Arch Intern Med. 2011;171(17):1582-5.
- 42. Saini V, Brownlee S, Elshaug AG, Glasziou P, Heath I. Addressing overuse and underuse around the world. Lancet. 2017;390(10090):105-7.
- 43. Saini V, Garcia-Armesto S, Klemperer D, Paris V, Elshaug AG, Brownlee S, et al. Drivers of poor medical care. Lancet. 2017;390(10090):178-90.
- 44. Kleinert S, Horton R. From universal health coverage to right care for health. Lancet. 2017;390(10090):101-2.
- 45. Porter ME. What is value in health care. N Engl J Med. 2010;363(26):2477-81.
- 46. MacKinney AC, Mueller KJ, Vaughn T, Zhu X. From health care volume to health care value—success strategies for rural health care providers. J Rural Health. 2014;30(2):221-5.
- 47. Grady D, Redberg RF. Less is more: How less health care can result in better health. Arch Intern Med. 2010;170(9):749-50.
- 48. Berwick DM. Avoiding overuse—the next quality frontier. Lancet. 2017;390(10090):102-4.
- 49. Hosseini S R, Abbasi B, E. A. Legal system governing organizations providing health insurance services. Iran J Health Insur. 2021;4(1):14-29.

- 50. Mosa FE, Khooban H, Dahrazama B, Arefi VR, Saadati F. Determining the causes of discontinuation of family physicians working in mashhad university of medical sciences. HIM. 2015;12(1):117-24.
- 51. Jannati A. Investigation the strengths and weaknesses of family doctor plan, science and health research, course4, number 4. Shahroud.
- 52. Abolhasan A, Abolghasem P, Fardin M. Family physician performance from the perspective of gilani customers. Hospital. 2013;12(1).
- 53. Ahmadi S, Ghaffari R, Kabiri N, Amini A, Salek F. Health care systems in selected countries and iran: A descriptive-comparative study. Biosci., Biotech. Res. Asia. 2015;12:753-66.
- 54. Gutkin C, Director E. Opportunities in the specialty of family medicine. Can Fam Physician. 2008;54(2):320.
- 55. Pandve J. General practitioners must know about quaternary prevention. Gen Practice. 2016;4:3.
- 56. Cuba Fuentes MS, Zegarra Zamalloa CO, Reichert S, Gill D. Attitudes, perceptions and awareness concerning quaternary prevention among family doctors working in the social security system, peru: A cross-sectional descriptive study. Medwave. 2016;16(03).
- 57. Khadivi R, Yarahmadi A. The drug prescription patterns and utilization after family physician program implementation in rural health centers of isfahan district, iran. JIMS. 2014;31(271).
- 58. Kazemian M, Telouri FK. Assessment of referral system in rural family medicine program based on the comprehensive care criterion. Hakim Health Systems research journal. 2017;20(1):16-9.

- 59. Mehtarpour M, Tajvar M. Policy analysis of family physician plan and referral system in iran using policy analysis triangle framework. Health-Based Research. 2018;4(1):31-49.
- 60. Asante AD, Zwi AB. Factors influencing resource allocation decisions and equity in the health system of ghana. Public Health. 2009;123(5):371-7.
- 61. Delavari A, Damari B, Vosough MA, Majdzadeh R. Health policy making system in islamic republic of iran: Review an experience. Iranian J Publ Health. 2009;38:1-3.
- 62. Morgan DJ, Brownlee S, Leppin AL, Kressin N, Dhruva SS, Levin L, et al. Setting a research agenda for medical overuse. BMJ. 2015;351.
- 63. Jafarzadeh S, Mobasheri F, Bahramali E. Caregivers awareness about the rules of family physician program in fasa in the year 2014. JABS. 2016;6(3):326-33.
- 64. Vilhelmsson A. Value-based health care delivery, preventive medicine and the medicalization of public health. Cureus. 2017;9(3):e1063-e.
- 65. S. Q. International encyclopedia of public health. Academic Press. 2016.
- 66. Etzel RA. Children's environmental health—the role of primordial prevention. Curr Probl Pediatr Adolesc Health Care. 2016;46(6):202-4.
- 67. Gillman MW. Primordial prevention of cardiovascular disease. Circulation. 2015;131(7):599-601.
- 68. Stewart J, Manmathan G, Wilkinson P. Primary prevention of cardiovascular disease: A review of contemporary guidance and literature. JRSM cardiovasc dis. 2017;6:2048004016687211.

- 69. Kones R. Primary prevention of coronary heart disease: Integration of new data, evolving views, revised goals, and role of rosuvastatin in management. A comprehensive survey. Drug Des Devel Ther. 2011; 5: 325-380.
- 70. Khanji MY, van Waardhuizen CN, Bicalho VV, Ferket BS, Hunink MM, Petersen SE. Lifestyle advice and interventions for cardiovascular risk reduction: A systematic review of guidelines. Int J Cardiol. 2018;263:142–51.
- 71. Murchie P, Campbell NC, Ritchie LD, Simpson JA, Thain J. Secondary prevention clinics for coronary heart disease: Four year follow up of a randomised controlled trial in primary care. BMJ. 2003;326(7380):84.
- 72. Bae J-M. Implementation of quaternary prevention in the korean healthcare system: Lessons from the 2015 middle east respiratory syndrome coronavirus outbreak in the republic of korea. J Prev Med Public Health. 2015;48(6):271.
- 73. Tesser CD. Why is quaternary prevention important in prevention? Rev Saude Publica. 2017;51.
- 74. Jamoulle M, Roland M. Quaternary prevention. Hong-Kong Wonca Classification Committee 1995.
- 75. Jamoulle M, Tsoi G, Heath I, Mangin D, Pezeshki M, Pizzanelli Báez M, editors. Quaternary prevention, addressing the limits of medical practice. Wonca world conference Prague; 2013.
- 76. Norman AH, Tesser CD. quaternary prevention in primary care: A necessity for the brazilian unified national health system. Cad Saude Publica. 2009;25(9):2012–20.

- 77. Silva ALd, Mangin D, Pizzanelli M, Jamoulle M, Wagner HL, Silva DHS, et al. Manifesto de curitiba: Pela prevenção quaternária e por uma medicina sem conflitos de interesse. Rev bras med fam comunidade. 2014;9(33):371-4.
- 78. Tsoi G. Quaternary prevention. Hong Kong Pract. 2014;36:49-50.
- 79. Pezeshki MZ, Pezeshki S. Educating quaternary prevention (p4) in iran for decreasing the harms and costs of unnecessary services in clinical medicine and public health. Payesh. 2013;12(4):329-33.
- 80. Bae J-M, Jamoulle M. Primary care physicians' action plans for responding to results of screening tests based on the concept of quaternary prevention. J Prev Med Public Health. 2016;49(6):343.
- 81. Jamoulle M. The four duties of family doctors. Quaternary prevention: First, do no harm. Hong Kong Pract. 2014;36:46-9.
- 82. Widmer D. Care and do not harm: Possible misunderstandings with quaternary prevention (p4): Comment on" quaternary prevention, an answer of family doctors to over medicalization". Int J Health Policy Manag. 2015;4(8):561.
- 83. Tran THV, Vo TL. Impact of quaternary prevention as a brief intervention in medical students' clinical decisions: Experience from vietnam. Rev bras med fam comunidade. 2015;10(35):1-8.
- 84. Cardoso RV. Quaternary prevention: A gaze on medicalization in the practice of family doctors.

  Rev bras med fam comunidade. 2015:1-10.

- 85. Visentin G. The difficult choice of 'not doing': Comment on quaternary prevention, an answer of family doctors to overmedicalization. Int J Health policy Manag. 2015;4(8):559.
- 86. Alber K, Kuehlein T, Schedlbauer A, Schaffer S. Medical overuse and quaternary prevention in primary care-a qualitative study with general practitioners. BMC Fam Pract. 2017;18(1):1-13.
- 87. Jamoulle M, Gavilán E, Cardoso RV, Mariño MA, Pizzanelli M, Grosjean J, et al. The words of prevention, part ii: Ten terms in the realm of quaternary prevention. Rev bras med fam comunidade. 2015;10(35):1-11.
- 88. Koeller E, Barclay C, Velasquez TL, Harris R, Partin MR, Danan ER, et al. Healthcare overuse: A literature review and taxonomy proposal. Journal of Health Science. 2016;4:83-92.
- 89. Gomes LF, Gusso G, Jamoulle M. Teaching and learning quaternary prevention. Rev bras med fam comunidade. 2015;10(35):1-14.
- 90. Walshe K, Rundall TG. Evidence-based management: From theory to practice in health care. Milbank Q. 2001;79(3):429-57.
- 91. Orszag PR. The overuse, underuse, and misuse of health care: US Congressional Budget Office; 2008.
- 92. Mafi JN, Russell K, Bortz BA, Dachary M, Hazel Jr WA, Fendrick AM. Low-cost, high-volume health services contribute the most to unnecessary health spending. Health Aff (Millwood). 2017;36(10):1701-4.
- 93. Safari L. A comparative study on the legal challenges of prescribing unnecessary medical treatments: Institute for Management and Planning Studies; 2017.
- 94. Leape LL. Unnecessary surgery. Annu Rev Public Health. 1992;13(1):363-83.

- 95. Pauly MV. What is unnecessary surgery? Milbank Mem Fund Q Health Society. 1979;57(1):95-117.
- 96. Lenzer J. Unnecessary care: Are doctors in denial and is profit driven healthcare to blame? BMJ. 2012;345.
- 97. Liu X, Mills A. Evaluating payment mechanisms: How can we measure unnecessary care? Health Policy Plan. 1999;14(4):409-13.
- 98. Westert GP, Groenewoud S, Wennberg JE, Gerard C, DaSilva P, Atsma F, et al. Medical practice variation: Public reporting a first necessary step to spark change. Int J Qual Health Care. 2018;30(9):731-5.
- 99. Saadat S, Ghodsi SM, Firouznia K, Etminan M, Goudarzi K, Naieni KH. Overuse or underuse of mri scanners in private radiology centers in tehran. Int J Technol Assess Health Care. 2008;24(3):277-81.
- 100. Edersheim JG, Stern TA. Liability associated with prescribing medications. Prim Care Companion J Clin Psychiatry. 2009;11(3):115.
- 101. Amani F, Shaker A, Soltan Mohaammadzadeh MS, Alaaf Akbari N, Sarrafe Smaeili S. Drug use pattern between urban families in ardabil city, iran. Payavard Salamat. 2012;5(5):36-45.
- 102. Chaw P, Höpner J, Mikolajczyk R. The knowledge, attitude and practice of health practitioners towards antibiotic prescribing and resistance in developing countries—a systematic review. J clin pharm Ther. 2018;43(5):606-13.

- 103. Thomas RE, Vaska M, Naugler C, Chowdhury TT. Interventions to educate family physicians to change test ordering: Systematic review of randomized controlled trials. Acad Pathol. 2016;3:2374289516633476.
- 104. Morgan DJ, Dhruva SS, Coon ER, Wright SM, Korenstein D. 2019 update on medical overuse: A review. JAMA internal Med. 2019;179(11):1568-74.
- 105. Fadlon I, Van Parys J. Primary care physician practice styles and patient care: Evidence from physician exits in medicare. J Health Econ. 2020;71:102304.
- 106. van Hoof SJ, Quanjel TC, Kroese ME, Spreeuwenberg MD, Ruwaard D. Substitution of outpatient hospital care with specialist care in the primary care setting: A systematic review on quality of care, health and costs. PLoS One. 2019;14(8):e0219957.
- 107. Gérvas J, Oliver LL, Pérez-Fernandez M. Family and community medicine and its role in preventing health overuse (preventive, diagnostic, therapeutic and rehabilitative). Cien Saude Colet. 2020;25(4):1233-40.
- 108. Sage WM, Kersh R. Medical malpractice and the us health care system: Cambridge University Press; 2006.
- 109. Avraham R, Schanzenbach M. The impact of tort reform on intensity of treatment: Evidence from the heart patients. J Health Econ. 2015; 39:273-88.
- 110. Karimi S, Khorasani E, Keyvanara M, Afshari S. Factors affecting physicians' behaviors in induced demand for health services. IJEP. 2015;1(1):43.
- 111. Rodwin MA, Okamoto A. Physicians' conflicts of interest in japan and the united states: Lessons for the united states. J Health Politic PolicyLaw. 2000;25(2):343-76.

- 112. Thompson DF. Understanding financial conflicts of interest. Research ethics: Routledge; 2017. p. 505-8.
- 113. Milanifar A, Akhondi MM, Paykarzadeh P, Larijani B. Assessing conflict of interest in iran's health legal system. IJME. 2011;5(1):1-16.
- 114. HR S. Civil liability in treatment precedure. Tehran: Mizan; 1394. 384 p.
- 115. Ansari R, Daneshnari H. Physician's responsibility in iranian and islamic law. Opción, Ano. 2019;35(20):1201-25.
- 116. Davila F. The infinite costs of futile care-the ultimate physician executive challenge. Physician Exec. 2006;32(1):60.
- 117. McCabe MS, Storm C. When doctors and patients disagree about medical futility. J Oncol Pract. 2008;4(4):207.
- 118. Sibbald R, Downar J, Hawryluck L. Perceptions of "futile care" among caregivers in intensive care units. CMAJ. 2007;177(10):1201-8.
- 119. Brody BA, Halevy A. Is futility a futile concept? J Med Philos. 1995;20(2):123-44.
- 120. Palda VA, Bowman KW, McLean RF, Chapman MG. "Futile" care: Do we provide it? Why? A semistructured, canada-wide survey of intensive care unit doctors and nurses. J Crit Care. 2005;20(3):207-13.
- 121. Kopelman LM. Conceptual and moral disputes about futile and useful treatments. J Med philos. 1995;20(2):109-21.

- 122. Griener GG. The physician's authority to withhold futile treatment. J Med Philos. 1995;20(2):207-24.
- 123. Tomlinson T, Michalski AJ, Pentz RD, Kuuppelomäki M. Futile care in oncology: When to stop trying. Lancet oncol. 2001;2(12):759-64.
- 124. Walker LO, Avant KC. Strategies for theory construction in nursing: Pearson/Prentice Hall Upper Saddle River, NJ; 2005.
- 125. Bahramnezhad F, Asgari P, Sanaie N, Fathi A. Futilecare: A conceptanalysis with walkerandavant's approach. I. J. C.A. 2020;1(1):48-54.
- 126. Ferrell BR, editor Understanding the moral distress of nurses witnessing medically futile care.

  Oncol Nurs Forum; 2006: Citeseer.
- 127. Mobley MJ, Rady MY, Verheijde JL, Patel B, Larson JS. The relationship between moral distress and perception of futile care in the critical care unit. Intensive Crit care nurs. 2007;23(5):256-63.
- 128. Aghabarari M, Dehghan Nayeri N. Futile care: Challenges of applying futility concept in caring domain. HAYAT. 2015;21(1):1-5.
- 129. Franklin GA, Cannon RW, Smith JW, Harbrecht BG, Miller FB, Richardson JD. Impact of withdrawal of care and futile care on trauma mortality. Surgery. 2011;150(4):854-60.
- 130. Glasziou P, Straus S, Brownlee S, Trevena L, Dans L, Guyatt G, et al. Evidence for underuse of effective medical services around the world. Lancet. 2017;390(10090):169-77.
- 131. Korenstein D, Falk R, Howell EA, Bishop T, Keyhani S. Overuse of health care services in the united states: An understudied problem. Arch Intern Med. 2012;172(2):171-8.

2019;14(3):e0213896.

- 132. Jonghe MD. Quaternary prevention as a guideline for the editorial team of an evidence-based medicine journal. Rev bras med fam comunidade. 2015:1-7.
- 133. Wang TJ, Mort EA, Nordberg P, Chang Y, Cadigan ME, Mylott L, et al. A utilization management intervention to reduce unnecessary testing in the coronary care unit. Arch Intern Med. 2002;162(16):1885-90.
- 134. Mangin D, Heath I. Multimorbidity and quaternary prevention (p4). Rev bras med fam comunidade. 2015;10(35):1-5.
- 135. Hsu JC, Chan PS, Tang F, Maddox TM, Marcus GM. Oral anticoagulant prescription in patients with atrial fibrillation and a low risk of thromboembolism: Insights from the ncdr pinnacle registry.

  JAMA intern med. 2015;175(6):1062-5.
- 136. Pandve HT. Quaternary prevention: Need of the hour. J Family Med Prim Care. 2014;3(4):309-10.
- 137. Capucho HC. Quaternary prevention and patient safety in brazil. Rev Bras Farm Hosp Serv Saúde São Paulo. 2012; 2:4-5.
- 138. Takian A, Doshmangir L, Rashidian A. Implementing family physician programme in rural iran: Exploring the role of an existing primary health care network. Fam Pract. 2013;30(5):551-9.

  139. Woldemichael A, Takian A, Akbari Sari A, Olyaeemanesh A. Availability and inequality in accessibility of health centre-based primary healthcare in ethiopia. PLoS One.
- 140. Arab-Zozani M, Pezeshki MZ, Khodayari-Zarnaq R, Janati A. Balancing overuse and underuse in the iranian healthcare system: A force field theory analysis. Ethiop J Health Sci. 2019;29(2).

- 141. Arab-Zozani M, Janati A, Pezeshki MZ, Khodayari-Zarnaq R. Policy package for preventing overuse and underuse of health care services in the iranian health care system: A study protocol. Med J Islam Repub Iran. 2019;33:86.
- 142. Takian A, Rashidian A, Kabir MJ. Expediency and coincidence in re-engineering a health system: An interpretive approach to formation of family medicine in iran. Health policy plan. 2011;26(2):163-73.
- 143. Takian A. Implementing family medicine in iran identification of facilitators and obstacles.

  London: London School of Hygiene & Tropical Medicine; 2009.
- 144. Roshanfekr Payam. Oral history of health network: Reviewing the memoirs of dr. Hossein malek afzali: daricheyeno; 2013.
- 145. Bagheri Lankarani Kamran , Hamid Izadbakhsh, Saeid Najba, Mohammad Azadi, Saffari M. Handbook of health and humanities: Imam Sadegh University; 2020.
- 146. Amini F, Jaksic Z, Khosrowshahi A. An approach to health services development research. Iran J Public Health. 1973;2(4):219-36.
- 147. Asadi-Lari M, Farshad A, Assaei S, Mahdavi MV, Akbari M, Ameri A, et al. Applying a basic development needs approach for sustainable and integrated community development in less-developed areas: Report of ongoing iranian experience. Public Health. 2005;119(6):474-82.
- 148. Bagheri Lankarani K, Hafezi R, Alavian SM, Motavalian SA, Ramazan PoorKhaki H, Fayazbakhsh MA, et al. To health: Essays from the treasure of the health care network of the islamic republic of iran, 2012.

- 149. Kazemian M, Telouri FK. Assessment of referral system in rural family medicine program based on the comprehensive care criterion. Hakim Health Systems research journal. 2017;20(1):9-16.
- 150. Roya Hassanzadeh. Developing a practical model of urban family physician program n iran. Tabriz: Tabriz University of Medical Sciences; 2018.
- 151. Rahmani K, Rezayatmand R, Sadeghpour N, Nikaeen M, Arabi S, Molavi Taleghani Y. Policymaking for rationing in the healthcare system: A review to provide suggestions for iran. Manage Strat Health Syst. 2018;3(3):249-62.
- 152. Jolayi H, Zarei N, Keshtkar V, Keshavarzian A, Keshani P, ZahliNezhad ME, et al. A review of general health policies announced by the supreme leader of iran. IJHP. 2018;2(1):32–53.
- 153. Singer PA, Viens AM. The cambridge textbook of bioethics: Cambridge University Press; 2008.
- 154. Seyed Mortaz SS, Garshasbi A. Basics and philosophy of medical ethics. Daneshvar Medicine. 2010;18(5):71-80.
- 155. Rangraz JF, Moravveji A, Fatemeh A. Attitude of physicians toward applying evidence based medicine and its related barriers. JKH. 2014;8(4):163-70.
- 156. Afshar A, Rashidi A, Mirzatolouei F. Information seeking behavior of iranian orthopaedic surgeons in acquiring updated orthopaedic knowledge. IJOS. 2009;28(3):121-5.
- 157. Newton W. Rationalism and empiricism in modern medicine. Law Contemp Probl. 2001;64(4):299-316.

- 158. Feinstein AR. Iii. The architecture of clinical research. Clin Pharmaco Ther. 1970;11(3):432-41.
- 159. Yoosefee S, Sharifimoghaddam S, Lotfi M, Sadeghi H-S, Eraghi P, Hemmati-Moghaddam A-R. Philosophical contemplation on evidence-based medicine. Qom Univ Med Sci J. 2020;14(4):22-30.
- 160. Al-Baghlie N, Al-Almaie SM. Physician attitudes towards evidence-based medicine in eastern saudi arabia. Ann Saudi Med. 2004;24(6):425-8.
- 161. Ingersoll GL. Evidence-based nursing: What it is and what it isn't. Nurs Outlook. 2000;48(4):151-2.
- 162. Soltani A. Elites medical exclusive report: Talks with doctor soltani, head of tehran university of medical sciences research center of evidence-based medicine. Tehran; 2015.
- 163. Sackett D. Evidence-based medicine: Seminars in perinatology. Elsevier; 1997.
- 164. ArabZozani M. A policy package for preventing overuse and underuse of healthcare services in the iranian healthcare system. Tabriz: Tabriz University of Medical Sciences 2019.
- 165. Aghabarary M, Dehghan Nayeri N, Varvani Farahani A. Perception of futile care: A qualitative study. HAYAT. 2019;24(4):381-404.
- 166. Madani M. Ethical considerations of futile care. IJME. 2013;6(2):31-42.
- 167. Aramesh K, Mohebbi M, Jessri M, Sanagou M. Measuring professionalism in residency training programs in iran. Med Teach. 2009;31(8):e356-e61.

- 168. Shamseer L, Moher D, Clarke M, Ghersi D, Liberati A, Petticrew M, et al. Preferred reporting items for systematic review and meta-analysis protocols (prisma-p) 2015: Elaboration and explanation. BMJ. 2015; 350:g7647.
- 169. Moher D, Shamseer L, Clarke M, Ghersi D, Liberati A, Petticrew M, et al. Preferred reporting items for systematic review and meta-analysis protocols (prisma-p) 2015 statement. Syst Rev. 2015;4(1):1-9.
- 170. Danaeefard Hassan. Strategies of theory building. 4 ed. Tehran: Samt; 2017.
- 171. Strauss A, Corbin J. Basics of qualitative research techniques: Citeseer; 1998.
- 172. Abbaspour a. Identification of employability capabilities graduates of universities based on grounded theory. Journal of Innovation and Value Creation. 2019;7(4):33-48.
- 173. Ghasemi Hamid, et.al. A comprehensive guide to research: andisheara; 1400.
- 174. Mayan MJ. An introduction to qualitative methods: A training module for students and professionals: International Institute for Methodology; 2001.
- 175. Tavallaei Ruhollah, MohammadzadehAlamdary M. Techniques and tools of research method in management: ACECR Publication, Amirkabir University of Technology Branch; 2017.
- 176. Warfield JN. Developing interconnection matrices in structural modeling. IEEE Trans Syst Man Cybern B Cybern. 1974; 4(1):81-7.
- 177. Attri R, Dev N, Sharma V. Interpretive structural modelling (ISM) approach: An overview. Res. J. Management Sci. 2013;2(2):3-8.
- 178. Walsh D, Downe S. Meta-synthesis method for qualitative research: A literature review. J Adv Nurs. 2005;50(2):204-11.

- 179. Lincoln YS, Guba EG. Naturalistic inquiry. Beverly Hills, CA: Sage Publications.; 1985.
- 180. Zamani AF, Niknami S, Mohammadi I, Montazeri A, Ahmadi FE, Ghofranipour F, et al. High risk behaviors among iranian motorcyclists: A qualitative study. Payesh.2010;9(3):269-78.
- 181. Zarei Z. Master's thesis on human resource management, public interest: The appropriate method for vision foresight in iran: alame tabatabaei; 2011.
- 182. Toofigh F. Economic planning in iran and its future perspective: The Institute for Management and Planning Studies (IMPS); 1392.
- 183. Mohsen RM. A vision for iran's future, 1385.
- 184. Rezaei Mirghaed Mohsen, Ali MD. Future iran in the horizon of vision, 2005.
- 185. Morgan DJ, Dhruva SS, Coon ER, Wright SM, Korenstein D. 2018 update on medical overuse. JAMA Intern Med. 2019;179(2):240-6.
- 186. Sunde M, Nygaard MM, Høye S. General practitioners' attitudes toward municipal initiatives to improve antibiotic prescribing—a mixed-methods study. Antibiotics. 2019;8(3):120.
- 187. Kotwani A, Wattal C, Katewa S, Joshi P, Holloway K. Factors influencing primary care physicians to prescribe antibiotics in delhi india. Fam Pract. 2010;27(6):684-90.
- 188. Watson J, de Salis I, Banks J, Salisbury C. What do tests do for doctors? A qualitative study of blood testing in uk primary care. Fam Pract. 2017;34(6):735-9.
- 189. Opdal PØ, Meland E, Hjörleifsson S. Dilemmas of medical overuse in general practice-a focus group study. Scand J Prim Health Care. 2019;37(1):135-40.

- 190. Pausch M, Schedlbauer A, Weiss M, Kuehlein T, Hueber S. Is it really always only the others who are to blame? Gp's view on medical overuse. A questionnaire study. PLoS One. 2020;15(1):e0227457.
- 191. Zhu E, Fors U, Smedberg Å. Understanding how to improve physicians' paradigms for prescribing antibiotics by using a conceptual design framework: A qualitative study. BMC Health Serv Res. 2018;18(1):1–16.
- 192. Yousif BME, Supakankunti S. General practitioners' prescribing patterns at primary healthcare centers in national health insurance, gezira, sudan. Drugs real world outcomes. 2016;3(3):327–32. 193. Mira JJ, Carrillo I, Silvestre C, Pé rez-Pé rez P, Nebot C, Olivera G, et al. Drivers and strategies for avoiding overuse. A cross-sectional study to explore the experience of spanish primary care providers handling uncertainty and patients' requests. BMJ open. 2018;8(6):e021339.
- 194. Lipitz-Snyderman A, Korenstein D. Reducing overuse—is patient safety the answer? JAMA. 2017;317(8):810-1.
- 195. Manson HM, Satin D, Nelson V, Vadiveloo T. Ethics education in family medicine training in the united states. Fam Med. 2013;46(1):28-35.
- 196. Manson H. The need for medical ethics education in family medicine training. Fam Med. 2008;40(9):658-64.
- 197. Bernstein J, La Valle R. Because of science you also die...: Comment on" quaternary prevention, an answer of family doctors to over medicalization". Int J Health Policy Manag. 2015;4(9):615.

- 198. Wolinsky H. Disease mongering and drug marketing: Does the pharmaceutical industry manufacture diseases as well as drugs? EMBO rep. 2005;6(7):612-4.
- 199. Singh H, Dickinson JA, Thé riault G, Grad R, Groulx S, Wilson BJ, et al. Overdiagnosis: Causes and consequences in primary health care. Can Fam Physician. 2018;64(9):654-9.
- 200. Powell AA, Bloomfield HE, Burgess DJ, Wilt TJ, Partin MR. A conceptual framework for understanding and reducing overuse by primary care providers. Med Care Res Rev. 2013;70(5):451-72.
- 201. Hersch J, Jansen J, Barratt A, Irwig L, Houssami N, Howard K, et al. Women's views on overdiagnosis in breast cancer screening: A qualitative study. BMJ. 2013;346.
- 202. Heidarian Naeini A R, Mahmoodi Alemi G, J. YC. Required structures for family physician program forachieving service quality dimensions in primary health care: A systematic review. J. Med. Counc. Islam Repub. Iran. 2021;38(3):161-74.
- 203. Kabir MJ, Haydari A, Honarvar MR, Khatirnameni Z, Badakhshan A, Rafiei N, et al. Executive challenges of electronic referral system in the health centers and hospitals in golestan province, iran: A qualitative study.SJSPH. 2021;19(2):157-72.
- 204. Perera GR, Dowell AC, Morris CJ. Constructing a framework for quality activity in primary care. Aust Health Rev. 2012;37(1):98-103.
- 205. Seims LRK, Alegre JC, Murei L, Bragar J, Thatte N, Kibunga P, et al. Strengthening management and leadership practices to increase health-service delivery in kenya: An evidence-based approach. Hum resour Health. 2012;10(1):1-7.

- 206. Street RL, Haidet P. How well do doctors know their patients? Factors affecting physician understanding of patients' health beliefs. J Gen Intern Med. 2011;26(1):21-7.
- 207. Rabinowitz HK, Babbott D, Bastacky S, Pascoe JM, Patel KK, Pye KL, et al. Innovative approaches to educating medical students for practice in a changing health care environment: The national ume-21 project. Acad Med. 2001;76(6):587-97.
- 208. Der Lee N, Fokkema JP, Scheele F. Generic competencies in postgraduate medical training: Their importance illustrated by a doctor's narrative on competency-based practice. Zdr varst. 2012;51(4):280.
- 209. Baradaran HR, Kuhpayehzadeh J, Ramezani-Givi S, Dehnavieh R, Noori Hekmat S. Managerial skills requirement of medical students from the perspective of students and physicians: A case study of iran university of medical sciences. RME. 2013;5(1):1-12.
- 210. Sockalingam S, Stergiopoulos V, Maggi J. Physicians as managers: Psychiatry residents' perceived gaps in knowledge and skills in administrative psychiatry. Acad Psychiatry. 2007;31(4):304-7.
- 211. Stergiopoulos V, Maggi J, Sockalingam S. Teaching and learning the physician manager role: Psychiatry residents' perspectives. Med Teach. 2010;32(7):e308-e14.
- 212. Nekoei Moghadam M, Amiresmaili M, Sadeghi V, Zeinalzadeh AH, Tupchi M, Parva S. A qualitative study on human resources for primary health care in iran. Int J health plann manage. 2018;33(1):e38-e48.

- 213. Mehrolhassani MH, Jafari Sirizi M, Poorhoseini SS, Yazdi Feyzabadi V. The challenges of implementing family physician and rural insurance policies in kerman province, iran: A qualitative study. JHAD. 2012;1(3):193-206.
- 214. Amini AH, Meskarpour AM. Financial accessibility of iranian households to health care services during 1983-2008. Hakim Health System Research Journal. 2013;16:1-18.
- 215. Kohpeima Jahromi V, Dehnavieh R, Mehrolhasani M. Evaluation of urban family physician program in iran using primary care evaluation tool. IRJE. 2018;13:134-44.
- 216. Rosero-Bixby L. Spatial access to health care in costa rica and its equity: A gis-based study. Soc Sci Med. 2004;58(7):1271-84.
- 217. Jones A, Bentham G. Health service accessibility and deaths from asthma in 401 local authority districts in england and wales, 1988–92. Thorax. 1997;52(3):218–22.
- 218. Uba L. Cultural barriers to health care for southeast asian refugees. Public Health Rep. 1992;107(5):544.
- 219. Barr DA, Wanat SF. Listening to patients: Cultural and linguistic barriers to health care access. Fam Med. 2005;37(3):199-204.
- 220. Tabasinejad N, Khanjani N, Balali-Meybodi F, Nazari F, Mohseni M. Assessment of the educational requirements of rural family physicians in kerman university of medical sciences Iran. SDME. 2016;12(4):618-25.
- 221. Shiri M, Asgari H, Talebi M, Karamalian H, Rohani M, Narimani S. Educational needs assessment of family (general) physicians working in rural health centers of esfahan districts in five domains. IJME. 2011; 10(5):726-34.

- 222. Khayyati F, Motlagh ME, Kabir M, Kazemeini H, Jafari N. The role of family physician in case
- finding, referral, and insurance coverage in the rural areas. Iran J Public Health. 2011;40(3):136.
- 223. Kazemian M, Telouri FK, Mirdarvatan S. Assessment unnecessary costs in family physicians
- with comprehensive approach to care (cuts in family physician program. JHMR. 2016;7(3):47-55.
- 224. Rouhani S, Momeni Rahkola G, Nasrollapour-Shirvani SD. Translation, adaptation and
- validation of referral systems assessment and monitoring toolkit for the family physicians program
- in iran. J Mazandaran Univ Med Sci. 2019;29(179):145-52.
- 225. Berwick DM, Nolan TW, Whittington J. The triple aim: Care, health, and cost. Health Aff
- (Millwood). 2008;27(3):759-69.
- 226. Kabir MJ, Malekafzali H, Mohagheghi MA, Heidari A, Jafari N, Tabrizchi N, et al. Effective
- implementation of family medicine program in iran: Requirements and implementation of strategies
- IJHP. 2021;5(3):353-60.
- 227. Abbasi A. The study of professional ethics of physicians and factors influencing it from the
- perspective of the medical community in tehran: Aalzahra Uneversity; 2012.
- 228. Freidson E. Client control and medical practice. Am J Sociol. 1960;65(4):374-82.
- 229. Freidson E. The changing nature of professional control. Annu Rev Sociol. 1984:1-20.
- 230. Organization WH. Hospitals and health for all: Report of a who expert committee on the role
- of hospitals at the first referral level meeting held in geneva from 9 to 17 december 1985]: World
- Health Organization; 1987.

- 231. Nasr ESS, Raeisi P, Motlagh M, Kabir M, Ashrafian AH. Evaluation of the performance of referral system in family physician program in iran university of medical sciences: 2009. Hakim. 2010;13(1).
- 232. Farzadfar F, Jafari S, Rahmani K, Valiee S, Bidarpour F, Molasheikhi M, et al. Views of managers, health care providers, and clients about problems in implementation of urban family physician program in iran: A qualitative study. SJKU. 2017;22(5):66-83.
- 233. Mosa Farkhany E, Khooban H, Dahrazama B, Arefi VR, Saadat F. Determining the causes of discontinuation of family physicians working in mashhad university of medical sciences. Health Inf Manag. 2015;12(1):117-24.
- 234. Khosravi S. Futures studies of primary health care management in iran: A scenario planning approach: Kerman University of Medical Sciences; 2018.
- 235. Ayati N, Afzali M, Hasanzad M, Kebriaeezadeh A, Rajabzadeh Ghatari A, Nikfar S. A conceptual model on the pharmacogenomics implementation complications: An applied qualitative research based on national drug policy components. Koomesh. 2022;24(2):245-54.
- 236. Habicht J, Kunst AE. Social inequalities in health care services utilisation after eight years of health care reforms: A cross-sectional study of estonia, 1999. Soc Sci Med. 2005;60(4):777-87.
- 237. Shadpour K. Health sector reform in islamic republic of iran. Journal of Inflammatory Diseases. 2006;10(3):7-20.
- 238. Organization WH. Referral systems-a summary of key processes to guide health services managers. Geneva, Switzerland: Author; 2013.

- 239. Nariman Moradi. Proposing model of quaternary prevention in care of coronary heart disease in iran. Tehran: Iran University of Medical Sciences 2020.
- 240. Gill JM. Use of hospital emergency departments for nonurgent care: A persistent problem with no easy solutions. Am J Manag Care. 1999;5(12):1565-8.
- 241. Glied S. Managed care. Inhandbook of health economics, ed. Aj culyer and jp newhouse, 707-53. Amsterdam: North-Holland; 2000.
- 242. Tang KC, Ståhl T, Bettcher D, De Leeuw E. The eighth global conference on health promotion: Health in all policies: From rhetoric to action. Health Promot Int. 2014;29(suppl\_1):i1-i8.
- 243. Organization WH. The world health report: Health systems financing: The path to universal coverage: World Health Organization; 2010.
- 244. Smith PC, Chalkidou K. Should countries set an explicit health benefits package? The case of the english national health service. Value Health. 2017;20(1):60-6.
- 245. Carrin G, Evans D, Xu K. Designing health financing policy towards universal coverage. Bull World Health Organ. 2007;85(9):652.
- 246. Giedion U, Bitrán R, Tristao I. Health benefit plans in latin america. Spanish: planes de beneficios en salud de América Latina. 2014.
- 247. Nakhimovsky S, Peterson L, Holtz J, Connor C, Mehtsun S, Folsom A. Using evidence to design health benefit plans for stronger health systems: Lessons from 25 countries. United States Agency for International Development. 2015.

- 248. Wammes JJG, Jeurissen PPT, Verhoef LM, Assendelft WJJ, Westert GP, Faber MJ. Is the role as gatekeeper still feasible? A survey among dutch general practitioners. Fam Pract. 2014;31(5):538-44.
- 249. Seppänen K, Kauppila T, Pitkälä K, Kautiainen H, Puustinen R, Iivanainen A, et al. Altering a computerized laboratory test order form rationalizes ordering of laboratory tests in primary care physicians. Int J Med Inform. 2016;86:49–53.
- 250. Misak CJ, White DB, Truog RD. Medically inappropriate or futile treatment: Deliberation and justification. J Med Philos. 2016; 41(1):90-114.
- 251. Ahmed SM, Islam QS. Availability and rational use of drugs in primary healthcare facilities following the national drug policy of 1982: Is bangladesh on right track? J Health Popul Nutr. 2012;30(1):99-108.
- 252. Buist DSM, Chang E, Handley M, Pardee R, Gundersen G, Cheadle A, et al. Primary care clinicians' perspectives on reducing low-value care in an integrated delivery system. Perm J. 2016;20(1):41-6.
- 253. Smith SM, Wallace E, Clyne B, Boland F, Fortin M. Interventions for improving outcomes in patients with multimorbidity in primary care and community setting: A systematic review. Syst Rev. 2021;10(1):1-23.
- 254. Pomey M-P, Martin E, Forest P-G. Quebec's family medicine groups: Innovation and compromise in the reform of front-line care. CPSR. 2009;3(4):31-46.
- 255. Team DL-tCN. The national service framework for long-term conditions. In: Health Do, editor. London2005.

- 256. Alber K, Kuehlein T, Schedlbauer A, Schaffer S. Medical overuse and quaternary prevention in primary care a qualitative study with general practitioners. BMC Fam Pract. 2017;18(1):99.
- 257. Allan DP. Catchments of general practice in different countries-a literature review. Int J Health Geogr. 2014;13(1):1-15.
- 258. Smith SM, Wallace E, O'Dowd T, Fortin M. Interventions for improving outcomes in patients with multimorbidity in primary care and community settings. Cochrane Database Syst Rev .2016; 3(3):CD006560.
- 259. Norman AH, Tesser CD. Quaternary prevention: A balanced approach to demedicalisation. Br J Gen Pract. 2019;69(678):28-29.
- 260. Rolfe A, Cash-Gibson L, Car J, Sheikh A, McKinstry BJCDoSR. Interventions for improving patients' trust in doctors and groups of doctors. Cochrane Database Syst Rev.2014(3):CD004134.

  261. Willeboordse F, Hugtenburg JG, Schellevis FG, Elders PJ. Patient participation in medication reviews is desirable but not evidence-based: A systematic literature review. Br J Clin Pharmacol. 2014;78(6):1201-16.
- 262. Thio SL, Nam J, van Driel ML, Dirven T, Blom J. Effects of discontinuation of chronic medication in primary care: A systematic review of deprescribing trials. BJGP.2018;68(675):e663-e72.
- 263. Steel N, Abdelhamid A, Stokes T, Edwards H, Fleetcroft R, Howe A, et al. A review of clinical practice guidelines found that they were often based on evidence of uncertain relevance to primary care patients. JCE. 2014;67(11):1251-7.

- 264. Kazemian M, Telouri FK. Assessment of referral system in rural family medicine program based on the comprehensive care criterion. Hakim. 2017;20(1).
- 265. Widmer D. Philosophical roots of quaternary prevention. RBMFC. 2015;10(35):1-8.
- 266. Park JE. Text book preventive and social medicine. 1989.
- 267. pilehroudi S. Health and treatment network of town. 1, editor. Tehran: Razavieh; 2006.
- 268. Mahdavi J, Simbar M, Amir Aliakbari S, Alavi Majd H. Correlation between quality of care and clients' satisfaction in family planning units of healthcare centers affiliated with shahid beheshti university of medical sciences and health services. Adv. nurs. midwifery. 2010;19(69):31–9.
- 269. Organization WH. Primary health care: Report of the international conference on primary health care, alma-ata, ussr, 6-12 september 1978: World Health Organization; 1978.
- 270. Zwarenstein M, Barron P, Tollman S, Crisp N, Frankish J, Toms I, et al. Primary health care depends on the district health system. 1993. p. 558.
- 271. Martins C, Godycki-Cwirko M, Heleno B, Brodersen J. Quaternary prevention: An evidence-based concept aiming to protect patients from medical harm. Br J Gen Pract. 2019;69(689):614-615.
- 272. Baygi MZ, Seyedin H. Imbalance between goals and organizational structure in primary health care in iran-a systematic review. Iran J Public Health. 2013;42(7):665-672.
- 273. Lankarani KB, Alavian SM, Peymani PJMjotIRoI. Health in the islamic republic of iran, challenges and progresses. Med J Islam Repub Iran. 2013;27(1):42-49.
- 274. Kumar RJIjocmopoIAoP, Medicine S. Revitalize primary health care for confronting current public health challenges. Indian J Community Med. 2008;33(1):1.

- 275. TorabiArdakani A, Hosseini S, Oroomiehei N, Mirzaei S. Study perception, knowledge and expectations from population and physicians points of view about implementation of family physician program: A case study in shiraz. J. Med. Counc. Islam Repub. Iran.2015;33(2):147-55.

  276. Kabir MJ, Ashrafian Amiri H, Hassanzadeh-Rostami Z, Momtahen R, Zafarmand R, Nasrollahpour Shirvani SD. Achievements and challenges in implementing urban family physician program in iran: Viewpoint of managers and executives .Manage Strat Health Syst. 2019;4(2):148-59.
- 277. Wilson AD, Childs S, Gonçalves-Bradley DC, Irving GJJCDoSR. Interventions to increase or decrease the length of primary care physicians' consultation. Cochrane Database Syst Rev. 2016(8). Art. No.: CD003540. DOI: 10.1002/14651858.CD003540.pub3.
- 278. Martins C, Godycki-Cwirko M, Heleno B, Brodersen J. Quaternary prevention: Reviewing the concept. Eur J Gen Pract. 2018;24(1):106-11.
- 279. Rashidian A, Yousefi NR, Azemikhah A, Heydarzadeh M, Changizi N, MAHTA BF, et al. Perinatal care regionalization and geographical distribution model in the islamic republic of iran. HAKIM Research Journal. 2008; 11 (2): 1-11.
- 280. Rashidian A, Omidvari A, Vali Y, Mortaz S, Yousefi-Nooraie R, Jafari M, et al. The effectiveness of regionalization of perinatal care services-a systematic review. Public Health. 2014;128(10):872-85.
- 281. Organization WH. The world health report 2000: Health systems: Improving performance: World Health Organization; 2000.

- 282. Organization WH. Toolkit on monitoring health systems strengthening. WHO 2008b WHO2009.p. 17-3.
- 283. Roberts MJ, Hsiao W, Berman P, Reich MR. Getting health reform right: A guide to improving performance and equity. New York. 2008.
- 284. World Health Organization. Everybody's business—strengthening health systems to improve health outcomes: Who's framework for action. 2007.
- 285. Khodamoradi A, Fayazbakhsh A, K. G. A review of world experiences in the field of financial management of family medicine program and referral system. IJHP. 2022;6(1):19–27.
- 286. Birtwhistle R, Bell NR, Thombs BD, Grad R, Dickinson JA. Periodic preventive health visits: A more appropriate approach to delivering preventive services: From the canadian task force on preventive health care. Can Fam Physician. 2017;63(11):824-6.
- 287. Committee FoFMPL. The future of family medicine: A collaborative project of the family medicine community. Annals Family Med. 2004;2(suppl 1):S3-S32.
- 288. Hopman P, De Bruin SR, Forjaz MJ, Rodriguez-Blazquez C, Tonnara G, Lemmens LC, et al. Effectiveness of comprehensive care programs for patients with multiple chronic conditions or frailty: A systematic literature review. Health policy. 2016;120(7):818-32.
- 289. Jha N, Premarajan K, Nagesh S, Khanal S, Thapa L. Five-star doctors for the 21st century a bpkihs endeavour for nepal. JHM. 2005;7(2):237-47.
- 290. Mirjani Aghdam A, Khorshidi A, Barzegar N, Moradi S, Ahmady S. Accountable education pattern for rehabilitation sciences curriculum. RME. 2022;14(1):13–23.

- 291. Sedghi S, Aryankhesal A, Hojatizadeh Y, Asadzandi S, Habibi S. Barriers to implementation of evidence-based medicine and use of evidence: A systematic review. JHA. 2018;21(72).
- 292. Afshar A, Rashidi A, Mirzatolouei F. Information seeking behavior of iranian orthopaedic surgeons in acquiring updated orthopaedic knowledge. IJOS. 2009;28(3):121-5.
- 293. Sackett DL, editor Evidence-based medicine. Semin Perinatol; 1997: Elsevier.
- 294. Vaskouei Eshkevarei K, Hajinab K, Riahi L, Maleki M. Patient sheared decision-making models: A comparative study. IJNR. 2019;13(6):83-93.
- 295. Rafii F, Soleimani M, Seyed-Fatemi N. Concept analysis of participation of patient with chronic disease: Use of hybrid model. IJN. 2010;23(67):35-48.
- 296. Roland M, Guthrie B, Thomé DC. Primary medical care in the united kingdom. JABFM. 2012;25(Suppl 1):S6-S11.
- 297. Chevreul K, Brigham B, Durand-Zaleski I, Hernández-Quevedo C. France: Health system review. Health syst transit. 2015(17/3).
- 298. Keskimäki I, Tynkkynen L-K, Reissell E, Koivusalo M, Syrjä V, Vuorenkoski L, et al. Finland: Health system review. Health syst Transit. 2019;21(2):1-166.
- 299. Kroneman M, Boerma W, van den Berg M, Groenewegen P, de Jong J, van Ginneken E, et al. Netherlands: Health system review. Health Syst Transit. 2016;18:1-240.
- 300. Jommi C, Cantù E, Anessi-Pessina E. New funding arrangements in the italian national health service. Int J Health Plann Manage. 2001;16(4):347-68.
- 301. Takemura Y. Family medicine: What does it mean in japan? Asia Pac Fam Med. 2003;2(4):188-92.

302. Busse R, Blü mel M, Organization WH. Germany: Health system review. Health Syst Transit. 2014;16:1-296.

303. Schafer W, Kroneman M, Boerma W, van den Berg M, Westert G, Deville W, et al. The netherlands: Health system review. Health Syst Transit. 2010;12(1):1-228.

Designing and modeling for quaternary prevention for rural family physician services in Iran

Abstract

Introduction:

Delivery of medical overuse is costly and harmful. The concept of Quaternary prevention was developed to reduce unnecessary health care. Quaternary prevention with an ethical approach while protecting the patient and his benefits can increase the quality of service delivery and reduce the waste of resources and costs. This study was conducted to examine the evidence related to the establishment of quaternary prevention in the services of family doctors and present a model.

Method:

This study was conducted in four steps using a mixed method. Firstly, a systematic review was conducted to identify the available evidence on quaternary prevention practices in family and general practice. Then, in the qualitative part of the study, using a semi-structured interview, the existing situation, challenges, and solutions to implementing the quaternary prevention in the health system for the services of rural family physicians in Iran were investigated. In the next step, using the panel of experts and structural-interpretive modeling, the quaternary preventive practice model in the health system was presented for the services of family doctors in rural Iran. As a final point, the Ames model was used to present the model of implementing quaternary prevention in the Iranian health system for the services of family physicians in rural areas.

Results:

As a result of the systematic review, 28 studies were identified, and finally, seven articles were included in the meta-synthesis, which examined why family doctors provide excessive medical services and identified factors related to patients, doctors, the health system, and technology. As a result of the qualitative study, the causal conditions (physician, patient, health system), primary phenomena (exaltation of quaternary prevention), intervening and background conditions (political, social, thecnological, cultural, economical), strategies (Internal governance and external leadership), and consequences (Community safety and efficiency) of not providing essential services at the family doctor level were classified into five categories. In the interpretive structural modeling stage, 20 factors were classified into five levels. According to the results, patient and vulnerable group interests are most effective, and officials and policymakers should seriously support family physicians. In MICMAC analysis, factors were grouped into two related and dependent clusters. Finally, the Ames model was presented as the proposed model for this research.

## Conclusion:

The main drivers of medical overuse, causes, and solutions are generally outside the responsibility and ability of family physicians alone. The collaboration of family physicians in the management of medical overuse is neglected. Also, the provision of excessive care at higher levels (second and third levels) shows the minimal role of gatekeeping of family doctors in controlling this. Defects in the organizational structure of providing primary care and lack of proper implementation of the primary care system are one of the reasons for overuse in health systems. It is mandatory to prepare guidelines that clearly state the necessary and unnecessary items and explicitly indicate the non-performance of some therapeutic or diagnostic services. The health system needs to make a great effort to strengthen the commitment and personal responsibility of family doctors. This model, which

considers all aspects and presents all elements, has provided policymakers and managers with a comprehensive overview of this field in macro decision-making as well as managers in the field of implementing the quaternary prevention process at the family doctor level, which should result in a reduction in unnecessary services and an improvement in the effectiveness of the essential services provided.

Keywords: quaternary prevention, family physician, qualitative, interpretive structural modeling, vision.



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