BioSocial Health J. 2025;2(3):101-103
doi:10.34172/bshj.109
https://biosocialhealthjournal.com

BioSocial
Health Journal

Perspective

Colorectal Cancer Screening Program in Iraq: Challenges and Recommendations from a Country with Limited Resources

Laween Hashim Dawoud[1], Ahmed A. Mosa[1*], Yousif Hameed Ramadhan[1], Rojeen Chalabi Khalid[1], Nawfal R Hussein[2], Ameen M. Mohammad[3]

[1]Department of Clinical Sciences, College of Medicine, University of Zakho, Kurdistan Region of Iraq
[2]Department of Biomedical Sciences, College of Medicine, University of Zakho, Kurdistan Region of Iraq
[3]Department of Internal Medicine, College of Medicine, University of Duhok, Kurdistan Region of Iraq

*__Corresponding Author:__ Ahmed A. Mosa, Email: ehmad.a.mosa@gmail.com

Abstract

Colorectal cancer (CRC) remains a major public health issue. The global incidence of CRC is increasing, with the highest incidence rates observed in developed countries. An effective screening program enhances early detection, reducing morbidity and mortality. Although many countries have implemented national CRC screening (CRCS) programs, nations with limited resources, such as Iraq, encounter considerable barriers and obstacles in establishing such initiatives. This paper discusses the barriers to implementing a national CRCS program in resource-constrained nations, drawing insights from the experiences of countries neighboring Iraq, and providing practical recommendations for improving diagnoses and outcomes. Key obstacles in establishing the CRCS program in resource-constrained nations are categorized into population and health system impediments. Such nations should prioritize establishing a pilot screening program as a preliminary step, with the ultimate goal of developing a nationwide program. International support, global research initiatives, and collaboration among regional health authorities are essential to address these challenges.

Keywords: Colorectal cancer, Screening program, Public health, Resource-limited nations

Received: August 3, 2025, **Revised**: August 26, 2025, **Accepted**: August 27, 2025, **ePublished**: October 20, 2025

Introduction

Colorectal cancer (CRC) represents a major global health issue. It is the third most prevalent cancer and the second leading cause of cancer-related mortality. In 2020, over 1.9 million new cases of colorectal cancer (CRC) were diagnosed, resulting in approximately 930,000 deaths globally. It is forecasted to reach 3.2 million cases in 2040. The highest incidence rates were in developed countries like China, Japan, and the United States.[1] However, in Iraq, the incidence is still low compared to developed and industrialized countries, but the overall incidence proportion has increased from 2.28 per 100,000 population in 2000 to 6.18 per 100,000 population in 2019. This indicates that the incidence has increased by over 170% in just two decades.[2]

An effective screening program facilitates early diagnosis, which is proven to reduce morbidity and mortality associated with CRC. Despite these global achievements in screening initiatives, some resource-constrained nations continue to face substantial barriers and challenges in planning and implementing a screening program. These challenges are categorized into population and health system barriers; among the mentioned categories, at least one is commonly observed across all nations. However, in Iraq, both categories of obstacles are encountered.[3] In this paper, we aim to explore the foundation of CRC screening programs in Middle Eastern countries and to glean insights from their experiences. Additionally, we also strive to delineate key barriers to program implementation in countries with limited resources, as in the case of Iraq. We conclude our paper with actionable insights and strategies for enhancing early detection and improving outcomes.

Methods of screening

There are various colorectal cancer screening (CRCS) guidelines recommended by verified bodies, including the American Cancer Society (ACS), the Multi-Society Task Force (MSTF), and the American College of Physicians (ACP). The ACP advises screening for average-risk individuals aged 50 to 75 years. In contrast, both the ACS and MSTF have updated their guidelines to recommend initiating screening at the age of 45 years, in response to growing incidence rates among younger demographics.

CRCS options can be categorized into either stool-based tests, structural examinations, or a combination of both. Stool-based tests comprise the fecal immunochemical test (FIT), high-sensitivity guaiac-based fecal occult blood test (gFOBT), and multi-target stool DNA test. Structural screening methods encompass flexible sigmoidoscopy, CT colonography, and colonoscopy. The recommended screening intervals for each modality vary according to the different clinical guidelines and recommendations.[4–6]

Advantages and disadvantages of screening

CRCS programs offer substantial public health advantages. The primary benefit is the early detection of precancerous polyps or cancers, which enhances prognosis and reduces mortality rates. Colonoscopy not only identifies but also excises polyps. Therefore, it prevents cancer development. Moreover, systemic screening increases public awareness and proves to be cost-effective over time by diminishing the need for expensive treatment of advanced disease.[7] Despite these benefits, screening systems also have pitfalls. The potential for overdiagnosis results in unnecessary psychosocial anxiety and needless financial burden, as well as invasive procedures, like colonoscopy, that carry a small risk of complications, such as bleeding and perforation.[8] However, for average-risk individuals, the benefits of these procedures surpass the associated risks.

Regional experiences

Most Middle Eastern countries have commenced the implementation of their CRCS programs. Nevertheless, the Iraqi government currently lacks the capacity to initiate such an important program. Despite the availability of a national screening program in neighbouring countries, to date, none has achieved widespread implementation. This section will address the challenges and obstacles encountered in obtaining widespread adoption in countries neighbouring Iraq.

The national CRCS program in the United Arab Emirates (UAE) was established in 2013, focusing on individuals aged 40 years and above. However, a recent study in the UAE indicated that only 9.1% of the eligible population participated in screening. Regrettably, despite an active program, the level of practice remains low. The study identified several barriers to practice screening among the eligible population, including insufficient physician recommendations, anxiety about test results, discomfort with the screening procedure, and a general lack of awareness.[9] The Qatari program stands out as the first National Cancer Control Program established within the Gulf Cooperation Council in 2011. Despite 14 years of experience, challenges are still circulating, including low public awareness, late-stage diagnoses, and an inadequate screening uptake rate. The screening rate for colorectal cancer in Qatar between 2016-2021 was approximately 23%.[10] Iran, as a neighboring nation, has launched a pilot screening initiative in Tehran to evaluate the feasibility of colorectal cancer screening with fecal immunochemical testing (FIT). The study findings indicated that FIT is a safe and viable approach for CRCS within the average-risk Iranian population.[11] The challenges encountered in above mentioned countries in achieving widespread implementation are primarily population-related rather than health system-related challenges.

Iraq does not stand alone in the area without a nationwide CRCS program. Jordan has likewise not yet initiated its national CRCS program.[12] Given that the region's population shares the same background and culture, the obstacles and challenges are typically analogous irrespective of whether a national program exists or not. Deriving insights from these regional experiences and lessons, the following sections aim to explore Iraq-specific challenges and to provide applicable and actionable recommendations.

Challenges in implementing a national program

The emergence of COVID-19 exposed new fragilities in the Iraqi health system, which has been devitalized by decades of internal conflicts, sectarian tensions, and sanctions. During this period, many healthcare workers have fled the country, further straining the health system.[13,14] Implementation of screening programs requires an extensive multisectoral collaboration, robust health infrastructure, and adequate financial support. In Iraq, data on CRC are almost absent, and unfortunately, there are currently no national databases or guidelines for CRC. Consequently, the majority of patients exhibit the disease at its advanced stages. In low-resource settings, as in the case of Iraq, several impediments, categorized into population and health system factors, hinder the adaptation of the national CRCS program. Population-sided barriers include cultural stigma, limited public awareness, and population hesitancy toward invasive screening procedures. Moreover, health system obstacles such as a lack of primary health centers equipped with these services, a shortage of trained staff and equipment, and weak follow-up systems further complicate this initiative.[15,16]

Recommendations

Identification and discussion of health gaps and challenges are necessary to offer practical solutions to health inequalities. The current infrastructure of the Iraqi health system does not appear to be feasible for the establishment of a nationwide CRCS program. Nevertheless, drawing from the experiences and statistics of the neighbouring nations, many achievable measures can be undertaken in Iraq. Health institutions and medical colleges should collaborate to promote evidence-based, tailored public health initiatives, including the use of digital platforms, to increase population awareness

and mitigate misconceptions, thereby enhancing the screening acceptance rate whenever feasible. This encompasses, but is not limited to, the promotion of screening techniques, including non-invasive options like FIT, which may improve acceptance rates. Additionally, it involves increasing population awareness about factors contributing to the development of CRC, with an emphasis on the importance of early disease detection, as it facilitates less invasive treatment and improves prognosis. Additionally, Iraq should prioritize the establishment of a digital health database across all governorates to facilitate collaboration between centers and to develop national screening recommendations tailored according to local needs. The Ministry of Health in Iraq should not underestimate the overwhelming need to initiate a pilot CRCS program in major cities, particularly focusing on individuals with a positive family history or inflammatory bowel disease, as a preliminary step with the vision of a nationwide program.

Conclusion

The continuous rise of CRC worldwide, including in Iraq, necessitates the establishment of an effective national CRCS program. However, the feasibility of implementing such an essential screening program at the national level in Iraq is an area of debate. Key barriers in establishing the CRCS program in Iraq encompass inadequate health infrastructure, poor public awareness, a shortage of qualified personnel, limited access to diagnostic tools, and sociocultural resistance. In areas including Iraq, where program development is not applicable, prioritization of public health campaigns is essential, and initiatives of pilot screening programs should be implemented, particularly focusing on high-risk individuals. An urgent international support, global research initiatives, and collaboration between regional health authorities are mandatory to mitigate and address these challenges.

Authors' Contribution

Conceptualization: Laween Hashim Dawoud, Ahmed A. Mosa, Nawfal R Hussein, and Ameen M. Mohammad.
Writing-original draft: Laween Hashim Dawoud, Yousif Hameed Ramadhan, Rojeen Chalabi Khalid.
Writing-review & editing: Ahmed A. Mosa, Nawfal R Hussein, and Ameen M. Mohammad.

Competing Interests

The authors have no conflict of interest to declare.

Data Availability Statement

This study did not involve the use of any new data

Ethical Approval

Ethics approval was not required for this perspective paper.

Funding

No financial support to be declared.

Informed Consent

Informed consent was not required for this perspective paper.

References

1. Xi Y, Xu P. Global colorectal cancer burden in 2020 and projections to 2040. Transl Oncol. 2021;14(10):101174. doi: 10.1016/j.tranon.2021.101174.
2. Ibrahem S, Ahmed H, Zangana S. Trends in colorectal cancer in Iraq over two decades: incidence, mortality, topography and morphology. Ann Saudi Med. 2022;42(4):252-61. doi: 10.5144/0256-4947.2022.252.
3. Li J, Li ZP, Ruan WJ, Wang W. Colorectal cancer screening: the value of early detection and modern challenges. World J Gastroenterol. 2024;30(20):2726-30. doi: 10.3748/wjg.v30.i20.2726.
4. Qaseem A, Harrod CS, Crandall CJ, Wilt TJ, Balk EM, Cooney TG, et al. Screening for colorectal cancer in asymptomatic average-risk adults: a guidance statement from the American College of Physicians (version 2). Ann Intern Med. 2023;176(8):1092-100. doi: 10.7326/m23-0779.
5. Wolf AM, Fontham ET, Church TR, Flowers CR, Guerra CE, LaMonte SJ, et al. Colorectal cancer screening for average-risk adults: 2018 guideline update from the American Cancer Society. CA Cancer J Clin. 2018;68(4):250-81. doi: 10.3322/caac.21457.
6. Patel SG, May FP, Anderson JC, Burke CA, Dominitz JA, Gross SA, et al. Updates on age to start and stop colorectal cancer screening: recommendations from the US Multi-Society Task Force on Colorectal Cancer. Gastroenterology. 2022;162(1):285-99. doi: 10.1053/j.gastro.2021.10.007.
7. Ran T, Cheng CY, Misselwitz B, Brenner H, Ubels J, Schlander M. Cost-effectiveness of colorectal cancer screening strategies-a systematic review. Clin Gastroenterol Hepatol. 2019;17(10):1969-81.e15. doi: 10.1016/j.cgh.2019.01.014.
8. Ladabaum U, Dominitz JA, Kahi C, Schoen RE. Strategies for colorectal cancer screening. Gastroenterology. 2020;158(2):418-32. doi: 10.1053/j.gastro.2019.06.043.
9. Alsaad LN, Sreedharan J. Practice of colorectal cancer screening in the United Arab Emirates and factors associated - a cross-sectional study. BMC Public Health. 2023;23(1):2015. doi: 10.1186/s12889-023-16951-7.
10. Al-Thani MB, Subramanian M, Halabi N, Bujassoum Al Bader S, Shan J, Al-Rumaihi KR, et al. Qatar national cancer care and research: pioneering strategies for global health excellence. Lancet Oncol. 2025;26(7):e369-80. doi: 10.1016/s1470-2045(25)00132-9.
11. Salimzadeh H, Sauvaget C, Delavari A, Sadeghi A, Amani M, Salimzadeh S, et al. Colorectal cancer screening pilot project in Tehran-Iran, a feasibility study. Arch Iran Med. 2023;26(3):138-46. doi: 10.34172/aim.2023.22.
12. Abdulelah ZA, Abdulelah AA, Alqaisieh M, Khanfar AN, Hammad NH, Al Masoud EB, et al. National survey of barriers to colorectal cancer screening in Jordan. East Mediterr Health J. 2024;30(2):125-35. doi: 10.26719/emhj.24.028.
13. Mosa AA, Hussein NR. Impact of three outbreaks on Mpox prevention program in Iraq: lessons and recommendations. J Pure Appl Microbiol. 2022;16(Suppl 1):3185-8. doi: 10.22207/JPAM.16.SPL1.12.
14. Ibrahim S, Al-Dahir S, Al Mulla T, Lami F, Hossain SM, Baqui A, et al. Resilience of health systems in conflict affected governorates of Iraq, 2014-2018. Confl Health. 2021;15(1):76. doi: 10.1186/s13031-021-00412-2.
15. Abdulrazaq ST, Sheikha AK. Assessment of colon cancer screening programs in Sulaimaniyah province, Iraq. Sulaimani J Pure Appl Sci. 2023;25(2):407-13.
16. Alrubaiy L, Al-Rubaye A, Alrudainy W, Al-Hawaz MH, Mahmoud RA, Saunders BP. Colonoscopy colorectal cancer screening programme in southern Iraq: challenges, knowledge gaps and future potential. J Pers Med. 2023;13(2):173. doi: 10.3390/jpm13020173.