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Interventions for increasing colorectal cancer screening uptake among African-American men: a systematic review and meta-analysis

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Review question

We will employ systematic review of the literature, along with a quantitative meta-analysis with three goals: 1) synthesize the evidence from published studies evaluating interventions to increase CRC screening uptake among African-American men; 2) assess the methodological quality of this evidence; and 3) quantitatively assess the evidence from these published studies through meta-analysis in order to determine the most effective screening uptake interventions for African-American men.

Searches

The following databases were searched from 11/2/18 to 12/14/18: MEDLINE (Ovid), CINAHL (EBSCO) , Embase (Ovid), Cochrane Central Register of Controlled Trials (CENTRAL) (Wiley). The concepts were colorectal cancer, screening, African American, and men. Both thesaurus terms and keywords were searched for each concept. After 1998

Types of study to be included

Studies which are empirical and use primary data analysis and collection are included in the meta-analysis and systematic review. Furthermore, these studies must highlight the intervention performed and an analysis of the intervention's effectiveness. Literature reviews, meta-analysis, or studies which use data from a secondary source will not be included in the meta-analysis and systematic review.

Condition or domain being studied

Colorectal cancer (CRC) is the third most commonly diagnosed cancer in the U.S. and the second leading cause of cancer related deaths. African-American men are disproportionately impacted by CRC, experiencing the lowest five-year survival rate of any other demographic group and are 27% more likely of having CRC as compared to white men. It is well documented that CRC screening is a highly effective preventive measure against the disease, yet screening uptake remains low among African-American men.

Participants/population

The population of interest for this meta-analysis and systematic review is African-American men in the U.S. The study population is not limited by educational attainment level, socioeconomic status, or other criteria. Interventions which only target women, race/ethnicity not including African Americans, or are conducted in countries outside of the United States, were excluded.

Intervention(s), exposure(s)

Interventions aimed at increasing CRC screening vary greatly, and many of which will be discovered through the systematic review process. Potential interventions include: providing patients with printed educational materials, providing patient care navigation services, conducting phone calls to encourage and remind patients about screening, accessing common community events/happenings (church, fairs, barbershops, etc.) and promoting CRC screening, mailing appointment reminders and or educational materials, promoting CRC screening education via primary care physicians, or hosting group educational meetings.

Comparator(s)/control

Examined studies may compare two interventions against one another or compare an intervention against no intervention. Control or comparison groups, where used, are samples taken from the same or similar

populations.

Context
Exclusion criteria includes: (1) study focus (about CRCscreening uptake/completion), (2) a primary, empirical study, (3) published in 1998 or beyond; (4) conducted in the U.S., (5) language of the article/study (English), (6) study sample includes African-American men; (7) whether an intervention/trial was described, and (8) whether an intervention/trial was evaluated.

Main outcome(s)
The primary outcomes of this meta-analysis and systematic review is to determine the effectiveness of CRC uptake interventions. Studies will be defined effective if they provide statistically significant evidence that an intervention has increased the number of African-American men who have received CRC screening (CRCS) when compared to average CRCS uptake among the same population. Studies which lack evidence of statistically significant improved CRCS rates will also be useful in determining the best method for increasing CRCS among African-American men. Consequently, studies that will be included in this meta-analysis and systematic review must provide details of the intervention used and whether it was evaluated.

Timing and effect measures

Additional outcome(s)
None

Timing and effect measures

Data extraction (selection and coding)
Studies are screened by using the Rayyan software, with a total of 966 articles were identified for initial screening. Exclusion criteria includes: study focus (about colorectal cancer screening), study design, date published (>1997), study location (performed in the U.S.), language of the article/study (English), race/ethnicity of study population (African American), whether an intervention was performed, and whether an evaluation of the intervention was performed. After initial screening is complete, a full text selection will be completed.

Risk of bias (quality) assessment

To establish the reliability of the methodological quality scoring (MQS) processes and data abstraction, 25% of the studies will be randomly selected and assigned to two reviewers. The risk of bias tool will stem from a modification of previous MQS tool published by the first author. Percent agreement will be calculated; reviewers will discuss their disagreements, and consensus will be achieved prior to assigning the final MQS.

Strategy for data synthesis
After the full text screening data will be extracted according to study characteristics, sample population characteristics, findings, and limitations. Where applicable, effect sizes will be calculated for each included study. Effect sizes will be grouped by intervention type in an effort to determine the impact of different types of interventions on the outcome under observation. A synthesized effect size will then be calculated for each intervention group. The synthesized effect sizes will allow for comparison between intervention type.

Analysis of subgroups or subsets
Based on current trends, CRC incidence rates among those ages 20-34 are predicted to increase 90%-124% by 2030, and 28%-46% among Americans ages 35-49. Further, the American Cancer Society updated their guidelines for recommended CRC screening from age 50 to age 45 on May 30, 2018, in direct response to the increase in incidence of early age onset CRC. Accordingly, the research team will see which interventions included African-American men younger than age 50.

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Conflicts of interest

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Details of any existing review of the same topic by the same authors

Stage of review at time of this submission

Stage	Started	Completed
Preliminary searches	Yes	No
Piloting of the study selection process	Yes	No
Formal screening of search results against eligibility criteria	Yes	No
Data extraction	No	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

Versions

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