

INTRODUCTION

- Colorectal Cancer (CRC) is the third most common cancer in the US.
- CRC cases and death rates have been declining in the past decade.
- This can be attributed to early detection due to screening tests and treatments.
- Various methods such as pamphlets and physician led display tables have been implemented to educate the general population regarding CRC and promote screening.
- The use of an inflatable colon (IC) with depictions of normal colonic tissue advancing to polyps and advanced carcinoma with a walk-through tour has recently become popular.
- We conducted a systematic review to assess the efficacy of the IC as a tool for educating patients about CRC.

METHODS

- We searched PubMed, Embase, and Scopus using the term “inflatable colon” from conception to February 2017 and included any study that assessed the IC and CRC education.
- Two reviewers independently screened the results.
- A third reviewer was utilized to aid in any disagreements between the two reviewers.

Figure 1. Systematic Search Process to Included Titles

110 results with search "inflatable colon" on PubMed, Embase, and Scopus

8 full text articles and 2 abstracts assessing inflatable colon and CRC education were identified

5 total studies

Giant Inflatable Colon



RESULTS

Table 1. Characteristics of the Studies Employing A Pre-Test/Post-Test Measurement Tool to Assess Knowledge and Behavior Before and After Walk Through Tour of Inflatable Colon

Study No.	Study	Notable Population Characteristics	Pre- & Post-Test (n)	Outcome- Improvement of Knowledge	Outcome- Intention to Screen	Outcome- Retention	Outcome- Social engagement likelihood
1	Redwood D, et al. (2013)	-Female (71%) -<35 years old (31%) -Caucasian (56%) -Alaska Native (AN)/American Indian (AI)/Aboriginal Canadian (37%) -Previous screening overall (35%), in >50 years old (64%)	880	+✓ All 4 questions had increase in knowledge (p< 0.05)	+✓ Increase in mean intention score from 4.3 to 4.5 (p< .001)		+✓ Increase in comfort with talking about screening from 3.8 to 3.9 (p<0.001)
2	Briant KJ, et al (11/2015)	-Female (76.2%) -40-49 years old (30.8%) -Hispanic (98.1%) -No Health Care (63.5%)	247	+✓* No improvement in knowledge between inflatable colon (IC) vs. standard: p= 0.09		+	
3	Shah R, et al. (2015)	-No demographic data	33	+✓* Increase in knowledge with IC: 1.06, p=0.019 Increase in knowledge with pamphlet: 0.52, p= 0.015 No improvement in knowledge between IC vs. Pamphlet: p= 0.286			
4	Gray II DM, et al. (2015)	->50 years old -Female -Had Private or Medicare insurance	177	+✓ All survey questions showed improvement in knowledge (p<0.01)	+✓		+✓ Increased likelihood of discussing CRC in both <50 year old and >50 year olds with IC (p<0.01)
5	Sanchez JI, et al. (2014) Sanchez JI, et al. (2015) Briant KJ, et al (06/2015) Molina Y, et al. (2017)	-Mixture of New Mexico (NM) University faculty/students and Washington (WA) state residents -Hispanic (67%) -Female (73%) -<50 year old (76%) -Insured (67%) -No prior screening (88%)	1432	+✓ NM males with greater gain in knowledge than females (p= 0.02) WA Hispanics (p= 0.007), younger (p= 0.02), less educated (p= <.0001 and uninsured (p= 0.04) greater gains in knowledge than counterparts	+✓ WA Hispanics (p= 0.01) and >50 year olds (p= <.0001) had greater intention to screen than counterparts		+✓ NM females increased likelihood to discuss screening than males (p= 0.002) WA <50 year old residents more likely than >50 year olds) to discuss screening (p= 0.002)

+ = this study included this outcome measure
 ✓ = this study had improvement in this outcome measure from pre-test to post-test in any adult subgroup of the population
 * = this study was a comparison between inflatable colon and pamphlet for teaching, both increased knowledge but no significant difference between the two interventions

CONCLUSION

- While varying in demographics and measurement tools, these studies overall illustrate that the IC was a useful tool in educating regarding CRC screening, increasing intention to screen, and social engagement in the immediate period.
- However, larger studies with a generalizable population, standardized assessment tool, follow up for long term retention, and assessment of fruition of screening intention need to be conducted in order to assess if this intervention is superior to other standard educational methods in the community setting.

DISCUSSION

- Multiple studies were performed in areas that incorporated at risk minority subgroups such as Hispanics or Alaska Natives/American Indians.
- Studies with reported demographic data had a female predominance.
- Study 5 involved a university campus which includes a significant population that is younger than the age for routine screening.
- Of the two studies that addressed comparison of this novel method to standard educational pamphlets, there proved to be no significant difference between the two interventions.
- Study 2 showed that whether the inflatable colon was used or the standard pamphlet method was used, there was nearly no retention of the important information a month later.
- Behavioral changes leading to true action would make this data much more valuable and is one of the biggest limitations expressed in all of the included studies.

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