



Juli Palatty, BSN, RN

DNP Chair: Darcel Reyes, Ph.D., ANP-BC; DNP Team Member: Dennis Yeboah Kordie, DNP, APN, NP-C, FNP-C

Introduction

- Colorectal cancer (CRC) is preventable with routine screening, detection, and removal of adenomas that could potentially develop into cancer over 5 to 15 years (Bevan & Rutter, 2018).
- CRC is the **2nd** most commonly diagnosed cancer and the **4th** leading cause of cancer related mortality world-wide (ACS, 2017).
- According to the World Cancer Research Fund Inc. (2019), in 2018, there were **1.8 million new cases** of CRC worldwide.

Background and Significance

- The American Cancer Society (ACS) estimates that in the U.S. there will be 104,610 new cases of colon cancer, 43,340 new cases of rectal cancer and 53,200 deaths linked to CRC in 2020 (Siegel et al., 2020).
- According to the CDC (2018), in the U.S., 21.7 million adults between the ages of 50 to 75 were still not up to date with recommended CRC screening.

Clinical Question

Among primary care providers (PCP) and staff members at an urban health clinic (P), how will education about screening guidelines along with the implementation of a pre-visit checklist (I), compared to usual practice (C), affect provider and staff attitudes about CRC screening and the number of patients who receive CRC referrals (O), over one month (T)?

Aims and Objectives

Aim: increase CRC screening referral rates by educating staff in addition to implementing the use of a pre-visit checklist.

Objectives: Conduct an education session for PCPs and all staff about current CRC screening guidelines and methods. Measure the frequency of use of the checklist by the medical assistants (MAs). Measure how many CRC qualified patients received a referral, as documented in the EHR. Measure the number of referrals before and after the educational intervention and use of the pre-visit checklist.

Methodology

- Retrospective and Prospective approach with a pre and post questionnaire.

Setting: Urban health clinic in Paterson, NJ.

Sample: 18 participants. Comprised of PCPs, MAs, and secretaries.

Data collection tools:

- The questionnaire was used to measure changes in staff and PCPs' attitudes toward CRC screening and to measure the outcome of the educational intervention.
- The pre-visit checklist was used by the MA to identify patients that qualified for a CRC screening referral.

Outcomes to be measured:

- Change in attitudes was defined as staff and PCPs recognizing the value of giving a CRC referral.
- Change in the referral rate was defined as the difference in the number of referrals before and after the implementation of the pre-visit checklist and educational intervention.

Results

Mann Whitney U test: Pre-visit checklist data

Test Statistics^a

	Referral
Mann-Whitney U	375.000
Wilcoxon W	840.000
Z	-1.654
Asymp. Sig. (2-tailed)	.098

a. Grouping Variable: Period

Referrals and Pre-visit checklist:

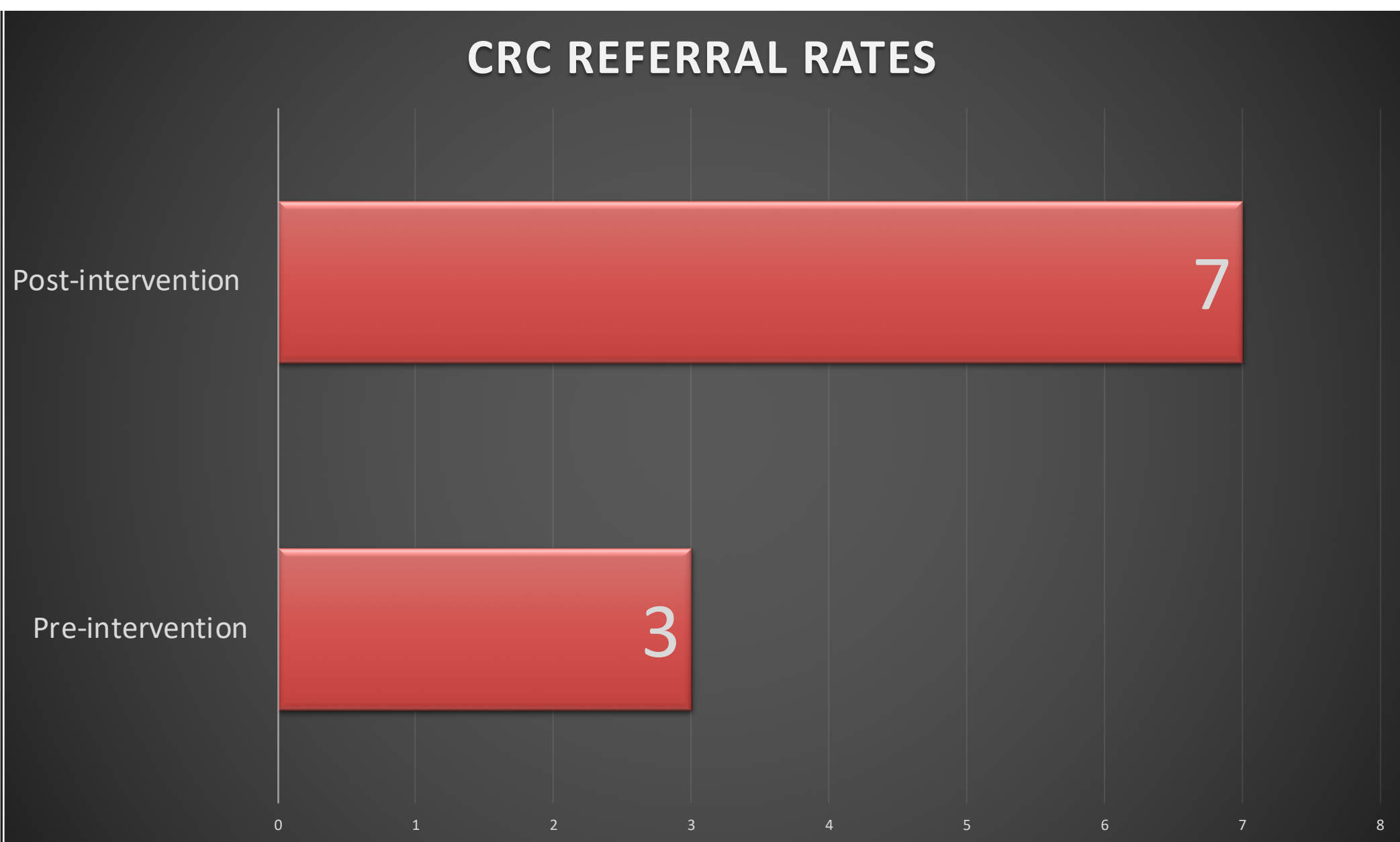
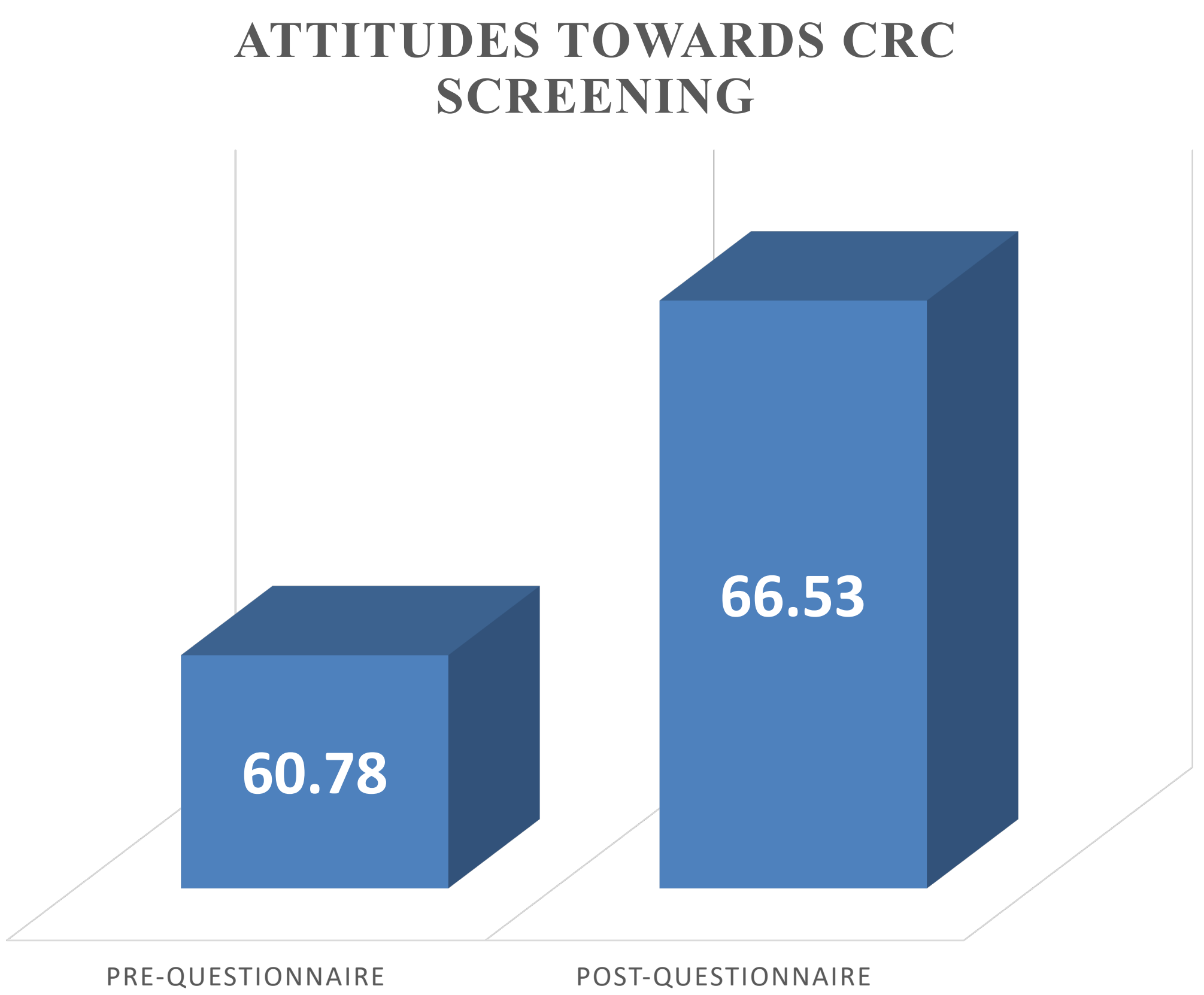
- Out of 30 eligible patients 3 referrals were given the month prior to the intervention that represents 10% receiving a referral. The month post intervention out of 30 eligible patients 7 referrals were given that represents 23% receiving a referral.
- There was a 13% increase in referrals after the implementation of the QI project.
- The PI collected a total of 30 completed checklists, of which 5 CRC referrals were prompted and resulted in five patients receiving a referral (p=0.098).
- There was no significant difference before and after the intervention.

Pre and post Questionnaire was analyzed using the Paired-Samples T-test

		Paired Samples Test						
		Paired Differences						
		Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference		t	df
					Lower	Upper		
Pair 1	Pretest - Posttest	-10.833	3.823	.901	-12.735	-8.932	-12.022	17

Pre/post Questionnaire:

- The pre-questionnaire mean score was 60.78, and the post-questionnaire mean score was 66.53, representing a **9% increase in scores** post intervention.
- When the data collected from the pre and post questionnaire was analyzed using the Paired-Samples T-test, the value 12.022 was obtained and is greater than the critical value of t that is 1.739607.
- These data points lead us to reject the null hypothesis and conclude that the intervention resulted in a significant improvement in staff's overall attitudes towards CRC screening (p= .000).



Discussion

- PCP at clinic order stool kits and started to provide them as an option to patients.
- The pre/post questionnaire data showed that the MAs were more in tune with patients.
- The pre-visit checklist was effective at identifying patients that were eligible. However, it was infrequently used by the MAs because of increased workload and technology, making paper charts increasingly obsolete.
- The PIs goal was to increase referrals by 5% that was achieved. However, more time may be required to gauge the true effect of the QI project.
- Incorporating the pre-visit checklist into the EHR and enabling the PCP to click patients' eligibility and generate the ICD 10 for a CRC screening encounter could increase ease of use.

Implications

Economic benefit:

- The U.S. spent approximately \$87.8 billion in 2014 for cancer-related health care (Singleterry, 2017). Prevention and early detection is the most effective way to reduce the cost associated with cancer treatment.

Impact on Healthcare:

- PCPs need to be aware of the barriers faced by the patients, so that they can find ways to assist their patients in obtaining their needed preventative care. The educational sessions could be offered as CEU credits.

Sustainability

- The use of the FIT kits at the clinic is an acceptable screening option and is a recommended form of CRC screening for patients who are unwilling or unable to have a colonoscopy.

Conclusion

Implementing an educational intervention for all staff as well as a systematic tool to identify screening eligibility at the clinic increased the number of referrals and positively improved the staffs' attitudes towards CRC screening. Providing MAs with education regarding CRC and involving them in screening may increase patient awareness of CRC screening and prevented missed screening encounter.

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Contact

Juli Palatty
Email: jap500@sn.rutgers.edu
Phone: 845-323-1139