INVITED COMMENTARY

Increasing the Use of Colonoscopy among First-Degree Relatives: a Comment on Boonyasiriwat et al.

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Published online: 20 March 2014 © The Society of Behavioral Medicine 2014

Within this issue, the investigation by Boonyasiriwat and colleagues [1] presents findings that are useful for developing targeted interventions to increase readiness and motivation to complete colorectal cancer (CRC) screening among firstdegree relatives (FDRs). It is well documented that FDRs of individuals with CRC have an increased risk of developing this cancer in their lifetime. Although the exact extent of risk has not been clearly elucidated, current estimates suggest individuals can have up to five times greater risk than someone without a family history of CRC [2, 3]. Given this increased risk, it seems reasonable that individuals with a family history undergo routine preventive CRC screening. Yet, evidence suggests that FDRs are not participating in screening at optimal rates [3, 4]. Consequently, interventions among this increased-risk population are necessary to raise readiness and motivation to complete colonoscopy.

Guided by the extended parallel process model [5], study investigators identified direct and indirect pathways that influence intention to undergo colonoscopy screening among FDRs. Main study findings from this investigation highlight that higher perceived CRC risk, stronger family and friend social support, and having a provider recommendation were associated with intention to complete a colonoscopy. These findings, supported by other published research [6–8], suggest that these factors can serve as strategies that can be incorporated into interventions aimed at increasing screening rates among FDRs. More importantly, these findings also suggest that multilevel interventions are probably best suited to increase readiness and motivation to screen among this at-risk

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population. Future research that examines how to best construct interventions that include intrapersonal, interpersonal, and institutional strategies to influence decision making and acceptance of colonoscopy among FDRs is warranted.

Boonyasiriwat and colleagues also investigated the role that fear may have in the decision to screen among FDRs. Findings suggest that in combination with perceived risk, fear of CRC mediated the relationship between perceived risk and intention to screen. As suggested by the investigators, interventions that increase fear of CRC may increase readiness to screen among FDRs. Future research is needed to better understand how fear messages could influence decision making among this increased-risk population. Although there has been a general reluctance in using fear messaging in health communication [9, 10], messages that increase perceived risk and focus on communicating the risk associated with late-stage diagnoses and undetected CRC may serve as a motivator to FDRs. Further, these messages can easily be combined with messages that increase knowledge about CRC and screening to FDRs. This study and others show that FDRs have limited knowledge about CRC as well as their own actual risk [11, 12].

Overall, study findings provide those of us who work in promoting adherence to CRC screening more insight into factors that are important to consider when developing outreach and intervention strategies for FDRs. As of now, only a few intervention studies directly targeting FDRs have been published with mixed findings [13–15]. More research identifying effective strategies to increase FDRs participation in CRC screening are needed. The findings from Boonyasiriwat and colleagues suggest that interventions must be multifaceted and should address the key factors that influence the decision to undergo colonoscopy screening.

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Author's Statement of Conflict of Interest Richard C. Palmer declares that he has no conflict of interest.

References

- Boonyasiriwat W, Hung M, Hon SD, et al. Intention to undergo colonoscopy screening among relatives of colorectal cancer cases: A theory-based model. Ann Behav Med. 2014 doi:10. 1007/s12160-013-9562-y.
- Fuchs CS, Giovannucci EL, Colditz GA, Hunter DJ, Speizer FE, Willett WC. A prospective study of family history and the risk of colorectal cancer. N Engl J Med. 1994; 331(25): 1669-1674.
- Johns LE, Houlston RS. A systematic review and meta-analysis of familial colorectal cancer risk. *Gastroenterol.* 2001; 96(10): 2992-3003. doi:10.1111/j.1572-0241.2001.04677.x.
- Ait Ouakrim D, Lockett T, Boussioutas A, Hopper JL, Jenkins MA. Screening participation for people at increased risk of colorectal cancer due to family history: A systematic review and meta-analysis. *Fam Cancer*. 2013; 12(3): 459-472. doi:10.1007/s10689-013-9658-3.
- Witte K. Fear as motivator, fear as inhibitor: Using the extended parallel process model to explain fear appeal successes and failures. In: Anderson, PA.; Guerrero, LK., editors. *Handbook of Communication and Emotion: Research, Theory, Applications, and Contexts.* San Diego, CA: Academic Press; 1998. p.423–450.
- Manne S, Markowitz A, Winawer S, et al. Understanding intention to undergo colonoscopy among intermediate-risk siblings of colorectal cancer patients: A test of mediational model. *Prev Med.* 2003; 36: 71-84. doi:10.1006/pmed.2002.1122.
- 7. Kinney AY, Hicken B, Simonsen SE, et al. Colorectal cancer surveillance behaviors among members of typical and attenuated FAP

families. Amer J Gastroenterology. 2007; 102: 153-162. doi:10. 1111/j.1572-0241.2006.00860.x.

- McQueen A, Vernon SW, Rothman AJ, Norman GJ, Myers RE, Tilley BC. Examining the role of perceived susceptibility on colorectal cancer screening intention and behavior. *Am Behav Med.* 2010; 40: 205-217. doi:10.1007/s12160-010-9215-3.
- Gore TD, Bracken CC. Testing the theoretical design of a health risk message: reexamining the major tenets of the extended parallel process model. *Health Educ Behav.* 2005; 32(1): 27-41. doi:10. 1177/1090198104266901.
- Gallagher KM, Updegraff JA. Health message framing effects on attitudes, intentions, and behavior: A meta-analytic review. *Ann Behav Med.* 2012; 43: 101-116. doi:10.1007/s12160-011-9308-7.
- Mack LA, Cook LS, Temple WJ, Carlson LE, Hilsden RJ, Paolucci EO. Colorectal cancer screening among first-degree relatives of colorectal cancer patients: benefits and barriers. *Am Surg Oncol.* 2009; 16: 2092-2100.
- Manne S, Markowitz A, Winawer S. Correlates of colorectal cancer screening compliance and stage of adoption among siblings of individuals with early onset colorectal cancer. *Health Psychol.* 2002; 21(1): 3-15. doi:10.1037//0278-6133.21.1.3.
- Rubin DT, Gandhi RK, Hetzel JT, et al. Do colorectal cancer patients understand that their family is at risk? *Dig Dis Sci.* 2009; 54: 2473-2483. doi:10.101007/s10620-009-0940-z.
- Rawl SM, Champion VL, Scott LL, et al. A randomized trial of two print interventions to increase colon cancer screening among firstdegree relatives. *Patient Educ Couns*. 2008; 71(2): 215-227. doi:10. 1016/j.pec.2008.01.013.
- Glenn BA, Herrmann AK, Crespi CM. Changes in risk perceptions in relation to self-reported colorectal cancer screening among firstdegree relatives of colorectal cancer cases enrolled in a randomized trial. *Health Psychol.* 2011; 30(4): 481-491.