

**Psychological Determinants of Cancer Screening (Non-) Attendance among Men –
Findings from a Research Project at the University of Heidelberg**

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Background: Cancer screening measures are underutilized by men in Germany. The main goal of our research project (2004 – 2007) funded by the “Deutsche Krebshilfe” (German Cancer Aid) was to identify social and/or psychological factors which are associated with cancer screening (CS) attendance particularly among men.

Methods: Multiple methods were used. In a survey with a representative sample of men and women aged 50 to 70 years (n = 15,810) we examined prevalence and correlates of fecal occult blood testing (FOBT) (Sieverding, Matterne, & Ciccarello, 2008) and colonoscopy uptake (Sieverding, Matterne, Ciccarello, & Haug, manuscript in preparation, Study 1). Psychological barriers to CS were analyzed in a focus group study with male participants (Sieverding & Dauven, 2005, Study 2). A cross-sectional study assessed socio-demographic and psychological variables in 2,426 German men who differed in their past CS behavior (non-attenders, irregular attenders and regular attenders). A subsample of this study (former non-attenders and irregular attenders, n = 1,032) were followed up 12 months later (Sieverding, Matterne, & Ciccarello, Revision under review, Study 3).

Main Results: Study 1: While in FOBT use a pronounced sex difference emerged (women reported a regular use more often), regarding colonoscopy uptake the sex difference was small. Medical checkup and physician’s recommendation were the most important predictors of FOBT use in both sexes. Colonoscopy uptake was most strongly associated with previous FOBT use in both sexes; further correlates of colonoscopy that (partly) differed by sex were physician’s recommendation, medical checkup, income and family history of cancer. Gender differences were found in most of the variables that were associated with colorectal cancer screening. For example, more men (46%) reported that they had never received a physician’s recommendation to undergo a cancer screening examination (women: 34%), men had undergone a general medical checkup less often and fewer men reported to have a family member with cancer.

Study 2: Focus group discussions revealed three main psychological barriers for men to undergo a CS examination: a “macho” attitude towards the own body and health (a “real” man does not worry about his body or his health), fear of the result of the examination and fear of the digital-rectal examination (DRE). The digital rectal examination of the prostate is by many men experienced as very unpleasant and embarrassing. These perceptions constitute the main barriers for (prostate) CS attendance as has been revealed in focus group discussions with U.S. men as well (Dale, Sartor, Davis, & Bennett,

1999). In Germany the “standard” CS examination for men – which is often combined with a general checkup and the recommendation to undergo a FOBT – includes a digital-rectal examination of the prostate. Probably as a result of this combined procedure prostate (DRE) and colorectal cancer screening (FOBT) examinations are highly correlated in German men ($r = .70$ in Study 1).

Study 3: Sociodemographic variables (like education or income) were found to have only a small impact on cancer screening intention and behavior. On the other hand, psychological variables such as attitude (toward screening), perceived behavioral control, subjective and descriptive norm predicted a substantial amount of the intention to undergo a cancer screening examination. As hypothesized, social norms play an important role in men’s CS intention and behavior. For intention formation, descriptive norm (the perception of what other men do) is influential in addition to subjective norm (the perception of what other important people expect someone to do). Significant predictors of CS uptake (assessed 12 months later) were intention and subjective norm with the latter having a different effect in two subgroups of men who differed in the past CS behavior: a high subjective norm (assessed at T1) was associated with *higher* CS attendance in (former) non-attenders but *lower* CS attendance in irregular attenders in the following 12 months. The latter group may have felt more restricted in their freedom because they already knew they were able to perform the behavior. The traditional male role ascribes self-assertiveness and independence to men (Brannon, 1976; Courtenay, 2000). Reactance effects might be a logical consequence to the perception that others (mainly the female partner) want to impose the “right” behavior and hence inherently challenge important strongholds of the traditional male identity.

Conclusions: Sex differences vary as a function of the screening test and are smaller for colonoscopy. The longer time interval may predispose colonoscopy to be the choice of colorectal cancer screening particularly for men. Physician’s recommendation and attendance or general medical checkups are important cues to action for CS. However, as men make less use of the medical system compared to women they cannot as easily be reached by physicians. Other – and perhaps stronger – cues to action are needed to remind and to motivate them. Media campaigns have reached most men in Germany, but seem to have only limited effects on behavior (Matterne & Sieverding, 2008). Invitation letters might be a fruitful solution. In countries with invitation systems a gender difference still exist but the overall participation rates are higher (Malila, Oivanen, & Hakama, 2008). The frequently applied combination of prostate and colorectal cancer screening examinations in German practice seems to be a barrier not only to prostate but also to colorectal screening. We were able to show that social norms referring to (a) what is commonly approved and (b) what is commonly done (especially by other men) play an important role in the context of men’s CS intention. This knowledge offers the possibility of planning psychoeducational interventions to improve men’s attendance rates in CS. Our research indicates that interventions should not only address attitude and knowledge toward CS, but that social norms should be taken into account as well. In this context the adequate framing of media campaigns and the specific information provided by health professionals can make an important difference.

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