



The influence of the ‘cancer effect’ on young women’s responses to overdiagnosis in cervical screening



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ABSTRACT

Objectives: To examine the ‘cancer effect’ (higher risk perceptions and negative emotion in cancer-related contexts) on young women’s responses to overdiagnosis (identification and treatment of inconsequential disease) in cervical cancer screening.

Methods: In a randomised experimental study, 168 women aged 17–24 read 1 of 4 texts outlining benefits and harms of cervical cancer screening or a fictitious non-cancer screening test; each presented *with* or *without* overdiagnosis information. Screening intentions and psychosocial outcomes were measured (T1). Overdiagnosis information was then presented to participants who did not receive it initially and intentions reassessed (T2).

Results: Mean screening intentions were not significantly different across groups. The distribution of intentions for cancer vs non-cancer screening differed significantly. Cancer information led to more extreme responses. Participants receiving overdiagnosis information at T2 reduced their screening intentions significantly. Perceived risk of disease was lower when overdiagnosis information was presented (non-cancer condition only). Higher negative emotion predicted higher screening intentions (cancer condition only).

Conclusions: This pattern of results suggests that a ‘cancer effect’ may be present among young women given identical information about cancer and non-cancer screening.

Practice implications: The ‘cancer effect’ may contribute to community eagerness for cancer screening despite provision of information about harms like overdiagnosis.

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1. Introduction

There is growing concern about the downsides of cancer screening and the risks of overdiagnosis and overtreatment of inconsequential pre-cancerous conditions and cancer which would otherwise spontaneously regress [1]. There is a lack of research and understanding about how best to communicate such information to consumers to support informed decision making [2]. Cervical screening among young women (under 25 years) has been highlighted as an area where there is potential for overdiagnosis and overtreatment. As a result, several cervical screening programs internationally have recently raised the age of screening onset from 18 years to 25 [e.g. UK, [3]].

Cervical cancer is caused by abnormal changes in the lining of the surface of the cervix, through infection with the sexually transmitted human papillomavirus (HPV) [4]. Most HPV infections are harmless, but in rare cases they lead to cervical cancer [1 in 625 women; [5]]. Cancer screening reduces mortality through early detection [6]. In the case of cervical cancer, screening tests such as the Papanicolaou (Pap) smear are designed to detect cervical abnormalities which may lead to cancer [7]. The benefits of screening on the incidence and mortality rates of cervical cancer have been consistently established [8]. However, these benefits must be weighed against potential harms, including overdiagnosis. Overdiagnosis occurs in cervical screening as there is no way of knowing which infections will progress to cancer and which will resolve on their own [8]. Low grade cervical abnormalities (HPV infections) are especially common in women under 25 years, but are typically cleared by the immune system [6,9]. There is currently no evidence to suggest that mortality is reduced in women aged

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under 25 years due to cervical screening [8,10] and it has been estimated that only 12% of even severe cervical abnormalities lead to cancer [11]. The annual incidence of cervical cancer among women aged 20–24 is only 1.5 in 100 000 [6], however, among those who have screening, 1600 in 100 000 have treatment for a pre-cancerous lesion [6].

Treatment for pre-cancerous lesions involves excising a section of the cervix [12]. This may lead to short term discomfort, and can for a small number of women result in more serious harms including premature labour, low birthweight and perinatal mortality [13]. These procedures may be considered overtreatment for some young women, and the detection of inconsequential lesions may be considered overdiagnosis. Overdiagnosis is a term referring to the detection and treatment of inconsequential disease, leading to unnecessary psychosocial and physical harms, and economic costs [14]. Receiving a positive test result and referral for colposcopy is associated with psychosocial harms such as anxiety and distress [15–18].

There is a growing consensus that better and more balanced information must be presented to the public for them to make informed choices about screening [8,19,20]. However, women

making decisions about screening are typically not given information about potential harms, particularly with respect to overdiagnosis. A recent randomised trial [21] examined the effects of including information about overdiagnosis in a decision aid for 50-year-old women deciding whether to undergo breast cancer screening. In this study, the information increased women's knowledge and increased informed choice, compared with a control decision aid which omitted the overdiagnosis information. Becoming better informed about the potential consequences made women feel a little less positive about undergoing breast screening, and somewhat reduced intentions to be screened in the next few years [21]. However, the impact of overdiagnosis information on young women's cervical cancer screening decision making, attitudes and intentions is unknown.

There are numerous theories regarding the predictors of cervical screening behaviour [22]. One such theory is the widely tested Theory of Planned Behaviour (TPB) [23–25]. This theory proposes that the most important predictor of behaviour is intention, which is determined by attitudes, subjective norms and perceived behavioural control (PBC) [23,26]. The TPB has also been

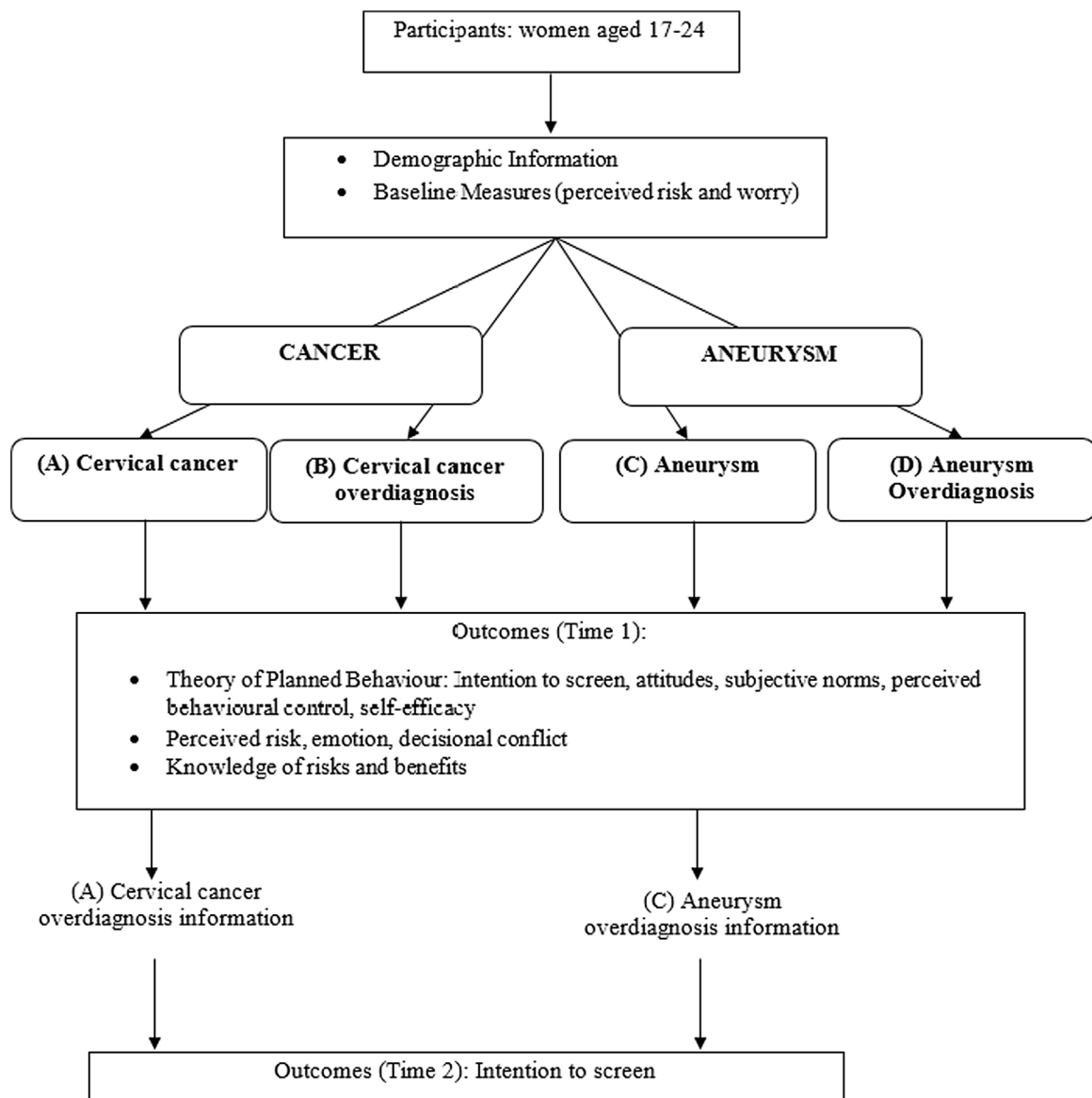


Fig. 1. Study design.

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