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Benefit cost analysis of three skin cancer public education mass-media campaigns implemented in New South Wales, Australia

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Public education mass media campaigns are an important intervention for influencing behavior modifications. However, evidence on the effectiveness of such campaigns to encourage the population to reduce sun exposure is limited. This study investigates the benefits and costs of three skin cancer campaigns implemented in New South Wales from 2006-2013. This analysis uses Australian dollars (AUD) and 2010-11 as the currency and base year, respectively. Historical data on skin cancer were used to project skin cancer rates for the period 2006-2020. The expected number of skin cancer cases is derived by combining skin cancer rates, sunburn rates and relative risk of skin cancers due to sun exposure. Counterfactual estimates are based on sunburn exposure in the absence of the campaigns. Monetary values are attached to direct (treatment) and indirect (productivity) costs saved due to fewer skin cancer cases. Monetary benefits are compared with the cost of implementing the campaigns and are presented in the form of a benefit-cost ratio. Relative to the counterfactual (i.e., no campaigns) there are an estimated 13,174 fewer skin cancers and 112 averted deaths over the period 2006-2013. The net present value of these benefits is \$60.17 million and the campaign cost is \$15.63 million. The benefit cost ratio is 3.85, suggesting that for every \$1 invested a return of \$3.85 is achieved. Skin cancer public education mass media campaigns are a good investment given the likely extent to which they reduce the morbidity, mortality and economic burden of skin cancer.

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### Art therapy & oncology

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**Background**: Common psychosocial difficulties of cancer patients are anxiety, depression and fatigue. This systematic review focused on art therapy interventions and the effectiveness of art therapy for cancer patients.

**Objective**: The purpose of this review was to research the evidence of using art therapy with adult cancer patients to improve coping of psychosocial problems and management of symptoms. The role of art therapy in cancer treatment will be discussed with the possibility of increased innovative settings for art therapists in the future.

**Methods**: Different online databases were searched in this review. Articles were included or excluded, based on predetermined criteria. The data analysis of all included articles was based on a total of 1006 patients and included art therapy interventions, outcome evaluation and results. Data extraction was conducted by two independent reviewers.

**Results**: A total of 14 studies with the inclusion criteria were performed. Measures were questionnaires, oral narratives and screening of psychosocial distress, depression, anger and fatigue, and quality of life (QoL). Studies included different stages and types of cancer with 3 studies focusing on breast cancer. Art therapy (AT) had the potential to decrease stress, anxiety and in most studies depression. AT improved Qol, and the emotional support to the cancer patients and also to family caregivers.

**Conclusion**: In this review evidence was found that AT interventions improve coping skills and self- awareness. Art therapy benefits different symptoms of cancer patients in terms of decreasing anxiety, depression, stress, pain, fatigue and increasing QoL. More studies, based on methodological homogeneity with a larger sample size are needed to show the long term effects of follow up studies.

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