Aim

To systematically review teleoncology applications and inform cancer agencies and other organizations involved in providing cancer care services to rural and remote communities.

Conclusions and results

Fifty-four articles met the inclusion criteria for the systematic review. A further 91 publications were used to prepare the overview. The papers providing information on outcomes described 42 clinical and 8 economic studies. Seventeen (40%) of the clinical studies were judged to be of high or good quality. A further 9 (21%) were of fair quality, and the remaining studies were of poorer quality.

Clinical studies. Teleoncology intervention was successful in 18 of the 28 better-quality studies. Success was not achieved in 7 studies, and the outcome was unclear in 3 others. Most of the studies with positive findings showed only small effect sizes, and few projects had proceeded beyond the feasibility stage. The strongest evidence of effectiveness came from 6 studies on psychosocial applications (2 on palliative care and one each on prevention, screening, diagnosis, and treatment). Positive findings from higher-quality studies suggested that telephone-based technology was an effective tool for promoting mammography and coloscopy in specific populations, increasing fruit and vegetable consumption, and providing an effective alternative to in-person support groups for women with breast cancer.

Economic studies. Since the 8 economic studies were limited in quality and scope, it was impossible to determine whether or not teleoncology is a cost-effective alternative to standard cancer care.

Satisfaction studies. Information from 20 papers suggests that patients were generally satisfied with various teleoncology applications, but these findings are of limited significance and generalizability.

Recommendations

Implementation of teleoncology applications in Alberta must take account of the overall healthcare context in the province. The literature suggests some useful possibilities for developing new services using Internet or Web-based, telephone-based, and video-based technologies for cancer patients in rural areas, but it is likely that these applications will need validation with suitable local studies.

Methods

Computerized literature searches from January 1995 to December 2005 identified relevant articles published in English using bibliographic databases, Internet sites of health technology assessment agencies and other relevant organizations, tables of contents of 7 electronic journals, and a Web search engine. Reference lists of retrieved articles were manually searched.

The systematic review included comparative quantitative clinical studies, case series studies (sample size ≥10), qualitative studies, and economic studies of teleoncology services provided to adults across the cancer continuum (prevention, screening, diagnosis and treatment, psychosocial and supportive care, rehabilitation, and palliative care). Study quality and reliability were evaluated using various approaches, depending on study type.

Further research/reviews required

The overview indicated that the literature was rich in examples on the use of communication technologies across the cancer continuum, with gaps in the areas of cancer prevention, screening, and rehabilitation. However, the reviewed literature did not include findings and recommendations that were specific to services for rural and remote communities.

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