

# Psychosocial interventions for adolescents and young adult cancer patients: A systematic review and meta-analysis

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## Abstract

Adolescent and young adult (AYA) cancer patients experience unique psychosocial needs and developmental challenges. A cancer diagnosis can stress this development and disrupt AYAs in their normal life.

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The aim of this systematic review and meta-analysis was to assess the impact of psychosocial interventions on mental health in AYAs. A literature research was conducted, which resulted in twelve eligible studies.

The standardized mean difference between intervention and control conditions was 0.13 (95% CI: -0.16 to 0.42) for quality of life, 0.27 (95% CI: -0.22 to 0.76) for cancer-related knowledge and -0.16 (95% CI: -0.73 to 0.42) on psychological distress indicating, small and non-significant effects for interventions improving mental health.

This work strengthens the need for age-appropriated interventions in psycho-oncology. Future research should develop interventions more graduated by age. Randomized intervention studies with larger samples and focusing psychosocial outcomes are needed to establish evidence-based psycho-oncological interventions for AYAs.

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## 1. Introduction

According to the definition by the National Comprehensive Cancer Network<sup>®</sup> (NCCN), adolescents and young adult cancer patients (AYAs) are generally defined as individuals aged between 15 and 39 years at their initial cancer diagnosis [1]. Nevertheless, there are inconsistencies in defining the age range for AYAs [2]. The specified age range was chosen because of typical issues and needs relevant to this group. In contrast to younger and older cancer patients, AYAs are different in their biological, psychosocial and socio-behavioral characteristics [3]. The incidence of cancer in AYAs has increased in Europe as well as in the USA in past decades [4]. In Germany, each year 15,000 patients aged between 15 and 39 years are diagnosed with cancer. Those are approximately 3% of all people diagnosed with cancer each year in Germany [5]. Survival depends on the specific cancer type, which means that the survival rate can be lower than in younger or older cancer patients e.g. for non-Hodgkin lymphoma or acute lymphoblastic leukemia [6].

AYAs with cancer represent a unique population in medical as well as in psychosocial terms [7]. While survival rates for younger children and older adults (age >40 years) have increased because of the progress of oncological treatments, there have only been small improvements in treatment in the AYA-group in the last three decades [8].

Biomedical differences between AYAs and other cancer patients arise as a result of a wide variety of cancer sites. Some cancer sites like Hodgkin's lymphoma or testicular cancer occur most often in the AYA group [9]. Other cancer sites have higher incidence rates during older adulthood. In addition, the cancer incidence increases from one age cohort to the next and the distribution pattern of diagnoses (Fig. 1) changes continuously [10]. AYAs may tolerate more intensive therapies due to their decreased co-morbidity [1]. In turn, this could lead to several acute side-effects or long term consequences such as infertility, secondary malignancies or cardiac dysfunction [11].

AYAs are faced with specific psychosocial and socio-behavioral challenges. First of all, there are often several rapidly changing developmental issues ahead, such as education, career and planning a family. In addition, in adolescence

challenges may include identity/sexual development problems, struggles for autonomy from parents and issues related to dealing with a "new" body image [12]. A cancer diagnosis often means disruption to daily life including school or work and isolation from peers and family [13]. Additionally, in this age-group individuals have to tackle developmental tasks such as identity formation and career and family planning, all of which demand integration into normal life. Hence, coping with these developmental tasks alongside the experience of a cancer diagnosis and treatment, requires good support, sufficient coping strategies and increased sensitivity from others. A majority of AYAs become more dependent on their parents again because of increased care and financial needs [14], despite the growing desire to be autonomous [3]. Table 1 illustrates specific medical and psychosocial characteristics of AYA cancer patients.

While most psycho-oncological studies of childhood cancer survivors or children and older adults with cancer focus on treatment, survival and interventions, few studies exist in the field of AYAs dealing with their specific needs and most prominent symptoms of this age-group [15–17].

Erickson [15,18] and Daniel [19] reported low physical activity including fatigue, nausea, pain and sleep disturbance as being the most common physical side-effects for AYAs. Furthermore, AYAs report a lower quality of life in comparison to their healthy peers [20] and have a higher risk of developing post-traumatic stress symptoms [21].

Yanez [16] showed in a study with 322 young adult (mean age 31.8) that cancer survivors had a higher level of cancer-related distress. This distress was higher 13–24 months after treatment completion in comparison to the 25–60 months cohort ( $p < .01$ ). Kwak [17] examined changes of distress over time in a study with 215 young adults between 14 and 39 years (mean age 23.6). He found higher levels of anxiety in AYAs at diagnosis, which increased further between 6 and 12 months post treatment (means anxiety scores of the Brief Symptom Inventory at baseline: 52.7, 6-months follow-up: 49.8 and 12-months follow-up: 51.5).

Additionally, AYAs have reported specific unmet needs during treatment and in the transition into survivorship. Those most cited are psychosocial and information needs such as support from family and friends, psychological counseling,

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