

48th CONGRESS OF THE INTERNATIONAL SOCIETY OF PAEDIATRIC ONCOLOGY (SIOP)

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resource provides honest, direct advice, with the aim of increasing young people's confidence in communicating about these issues. The information is delivered across different channels – written content, video and 'Ask the expert' online sessions – thereby increasing accessibility. Furthermore, it is also marketed to health and social care professionals as a tool they can use to help them raise these issues with young people with cancer.

P-0647 | Uncertainty in Parents of Children with Cancer: The State of the Science

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Background/Objectives: Evidence suggests that parents of children with cancer are prone to high levels of uncertainty, post-traumatic disorder, and stress symptoms as a result of their child's diagnosis, treatment, and unpredictable outcomes. This vulnerability may impact how parents perceive their child's health-related quality of life (HRQOL). However, there's a dearth of evidence explicating the linkage between parental uncertainty and HRQOL in this population. Thus, the purpose of this systematic literature review is to identify the gaps in literature addressing parental uncertainty and HRQOL in children with cancer. The Roy Adaptation Model and Mishel's Uncertainty guided this systematic literature review.

Design/Methods: CINAHL, PubMed and Academic Premier were searched for research findings using the terms: *parental uncertainty, children and cancer, quality of life, uncertainty*, published between January 2005 and September 2016 in English language. Exclusion criteria were non-research articles and literature reviews. Data were extracted from included studies and content analyses were done to synthesize the results of the review.

Results: Ten articles met the inclusion criteria. The literature suggests that high levels of uncertainty are prevalent in parents of children with cancer particularly in the first 6 to 12 months of a child's diagnosis and can persist overtime. High levels of PTSD symptoms were associated with parental perception of the child's HRQOL. Parents who experience PTSD symptoms report higher symptom burden in their children and are more likely to experience high uncertainty and high distress level themselves compared to the parents without PTSD symptoms.

Conclusion: Uncertainty is a major psychological and psychosocial stressor in the lives of children with cancer and their parents. It is important to explicate the linkage between parental uncertainty and HRQOL in order to inform future interventions that will reduce uncertainty in parents, which will ultimately improve HRQOL in this vulnerable population.

P-0648 | Survival from Tumours of the Central Nervous System in Danish Children: Is Survival Related to Family Circumstances

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Background/Objectives: Due to diverse findings as to the role of family characteristics for childhood cancer survival even within Europe and particularly little knowledge on central nervous system (CNS) tumour survival, we explored a nationwide, register-based cohort of Danish children with CNS tumours.

Design/Methods: All children born between 1973 and 2006 and diagnosed with a CNS tumour before the age of 20 years (N=1,259) were followed until 10 years from diagnosis. Adjusted Cox curves and Cox proportional hazards models estimating hazard ratios (HR) and 95% confidence intervals (CI) were used to assess the impact of various family characteristics on overall survival from CNS tumours.

Results: HRs for all CNS tumours combined, did not point to strong associations between survival and family characteristics. Somewhat worse survival was observed for children living in provincial cities and rural areas compared to children from greater Copenhagen area. Analyses by CNS tumour type showed statistically significant worse survival for children with glioma when living outside of Copenhagen (HR 1.59; CI 1.05, 2.42). For embryonal CNS tumours, the association between survival and place of residence was not confirmed. However, having full siblings was significantly associated with worse survival from embryonal tumours (HR for 3 or more full siblings 3.25; CI 1.25, 8.44). A tendency of inferior glioma survival was seen for children of very young fathers whereas, based on small numbers, a tendency of better survival from embryonal tumours was observed for children with parents of younger age at child's diagnosis.

Conclusion: Despite free and uniform access to health care services, family circumstances may affect survival from certain CNS tumours in Danish children. Further research is warranted to elaborate the pathways of those survival inequalities as well as to gain further knowledge on the impact of family circumstances on childhood cancer survival in other populations.

P-0649 | Cope with Pain in Children/Adolescents with Malignant Hematologic Cancers

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Background/Objectives: Pain is a multifaceted issue and a challenging concern in paediatric patients with hematological malignancies. Pain can originate from several sources, including diagnostic and treatment procedures, underlying malignancy, or other factors not associated with the disease process. In the light of the multiple dimensions involving the phenomenon of pain in children and adolescents with cancer, this study aims to present the ways that children and adolescents with acute leukaemia or lymphoma cope with pain. The study focused specifically on aspects pain-related coping during phases of treatment.

Design/Methods: Ongoing multicenter observational study of 34 children: 19 male and 15 girl (range age 7-14 years; M=8.2, SD=3.1) with Acute Lymphoblastic Leukaemia (ALL), Acute Myeloid Leukaemia (AML) Hodgkin lymphoma (HL) and non-Hodgkin lymphoma (NHL). Rating of intensity of pain and pain-coping traits were assessed using VAS and Pediatric Pain Coping Inventory, to identify systematically children's pain coping.

Results: Children reported low present pain intensity [M=1.29, SD=1.85] but their rating of prior pain (average of all pain in hospital) were reported as moderate to severe [M=6.94, SD=2.44]. The phase of treatment was related to the coping strategies used for pain management. Children in an active phase of treatment (induction, consolidation, re-induction) used fewer overall coping strategies than children in the maintenance phase (maintenance, bone marrow transplant, stop) [F(1,32) = 10.332; p = 0.003; partial η^2 = 0.244]. The regression analysis confirmed that phases of treatment predict overall pain-coping skills [β = 0.494, t = 3.214, p = 0.003].

Conclusion: The active phases of therapy in this group of patients with malignant hematologic cancers were related to less effective coping strategies. These results highlight the importance of better identifying particular treatment phases, which will help improve the support offered to children and adolescents and hopefully lead to better adjustment when coping with pain.

P-0650 | The Relationship between Parent Perception of Child Pain & Parent Psychological Distress: An Exploratory Analysis of Rumination

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Background/Objectives: Research examining psychosocial outcomes of paediatric cancer has largely focused on the child, despite findings that caregivers are at risk for concomitant psychological and physical health declines. Current research also supports an association between parent and child psychosocial adjustment. To better understand predictors of both parent and child adjustment to paediatric chronic illness, current research has turned toward exploring illness-specific and non-specific variables. Thus, the aim of the current study was to conduct preliminary analyses on parental adjustment, focusing on the illness-specific variable of parent perception of pain, and the non-specific variable of rumination.

Design/Methods: Caregivers (N=19, M_{age} = 36.82 years, SD=7.7 years) of children diagnosed with cancer (M_{age} = 8.47 years, SD= 5.10 years) completed measures of rumination, psychological distress, and parent report of child cancer specific quality of life as part of a larger ongoing study assessing adjustment in families with youth newly diagnosed with cancer.

Results: Parent perception of child physical pain (a common side effect of cancer and inherent concern for parents) predicted the amount of psychological distress reported by parents. The relationship between parent perception of child's pain and parent's psychological distress was mediated by parent rumination (R²=.81, β = -.53, 95% CI = -1.31 to -.023); such that parent's subjective rating of child pain had an indirect effect on parent psychological distress through rumination. Child age, gender, ethnicity, and cancer type were included as covariates.

Conclusion: The illness-specific variable of parent perception of child pain was significantly associated with greater rumination and greater psychological distress. Since child pain during the course of cancer treatment cannot be eliminated, this study indicates that parent rumination could be a potential target for future intervention. Reducing parents' repetitive thinking would facilitate the alleviation of psychological distress among parents of children newly diagnosed with cancer and could even reduce children's concomitant distress.

P-0651 | The Rating Scales for Stress and Depression in Children with Cancer are Lower Than in Healthy Children: Objective Assessment of Art Technique

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Background/Objectives: We assessed the perceptions of depression, ego, aggression, lethargy, death, stress through 'draw-a-story' (DAS) technique and post-traumatic stress syndrome (PTSD) tests in childhood cancer patients and compared with those items in their parents and healthy children.

Design/Methods: Childhood cancer patients as well as their parents and healthy friends were included during winter camp. The participants were asked to perform a PTSD tests and draw a picture and tell a story according to Silver's technique. Three art therapists contributed to this study by scoring or judging response drawings.

Results: The DAS rating scale was from the score of 1 to 5 points. There were no significant differences of PTSD scores in childhood cancer patients (n=12) compared to their parents (n=10) and healthy children (n=14). Interestingly, in DAS technique, the scores of depression (2.33±1.22 vs 4.33±0.86, p=0.0023) and stress (1.16±1.52 vs 3.66±1.08, p=0.0049) were significantly lower in childhood cancer patients rather than in healthy children. Furthermore, all 6 items of emotional disturbances did not showed any significant differences between childhood cancer patients and their parents.

Conclusion: Our results suggest that supportive programs for hospitalized childhood cancer patients can bring positive emotional development and helps to correct their self-perception, and also patients and their parents seem to share their values of life.

P-0652 | The Relationship between Parental Distress and the Presence of Emotional and Behavioral Problems in Children with Cancer

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Background/Objectives: The level of parental psychological distress can influence the psychological well-being that children with cancer may experience during active chemotherapy.