

Disease in childhood and the impact of childcare

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ABSTRACT

The PhD dissertation is based on five epidemiological studies of Danish register data regarding infection-related hospitalizations, childhood acute lymphoblastic leukemia (ALL) and attendance to childcare facilities in children aged 0-5 years in the period 1989-2004. The overall aim of the thesis was to study the impact of childcare attendance on disease in childhood on a short and a long-term basis, respectively. Short-term impact of childcare attendance was studied using hospitalizations for acute respiratory infections (ARI) as outcome, whereas ALL was studied to evaluate the long-term impact of childcare.

Initially, temporal trends in the incidence of hospitalizations for childhood infections in the period 1980-2001 in Denmark were characterized. We found an increase in the incidence of hospitalizations for infections, almost exclusively driven by short-term hospitalizations in 0-1-year-old children. Secondly, we described the creation of, the information available in, and the potential of the Childcare Database, containing more than 1 million children and created for the purpose of the present thesis. Thirdly, we assessed the short-term impact of childcare attendance on ARI. We found that childcare attendance was associated with an excess risk of ARI hospitalization, but only in 0-2-year-olds, during the first period of enrollment and in children not living with other children. Fourthly, we studied factors related to clustering of ARI in childcare facilities. We found that ARI hospitalizations cluster among children in childcare facilities. Clusters involved 0-2-year-olds and boys as first hospitalized child relatively more often than other children. Finally, we studied whether attendance to childcare early in life was associated with childhood ALL. We found childcare attendance during the first two years of life to entail a reduced risk of childhood ALL and the studied child and family characteristics seemed to play a minor role in the association between childcare attendance and childhood ALL.

We have confirmed an increased infection hospitalization incidence over time, documented the establishment of the Childcare Database, and confirmed that childcare attendance is associated with an increased risk of ARI hospitalization and a decreased risk of childhood ALL. The thesis contributes with new knowledge by identifying subgroups of children involved in the increased infection hospitalization incidence over time, and by demonstrating that the association between childcare attendance and ARI hospitalization varies with characteristics of the child and the child's family, whereas these characteristics seem to play a minor role in the association between childcare attendance and childhood ALL.