

Indoor Air Quality conditions within the baby beds of Day care centres

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Background

The indoor quality of an occupied space is extremely important for babies during their first year as their lungs are still growing and adverse conditions could affect this development. Nowadays more and more babies spent time in day care centres however, relatively little is known about the different indoor environmental conditions present in the sleeping quarters and especially inside the baby beds of these day care centers.

Methodology

Therefore this research investigated the indoor air quality of the sleeping accommodation of day care centres as well as the conditions within the baby beds. Besides an extensive literature research actual measurements were performed in day care centres to find out the indoor air conditions within baby beds especially the double bed.

Results

The IAQ levels, based on CO₂ as an indicator inside the baby beds, are 15% up to 40% higher than compared to the average background levels. This means that inside the baby bed the recommended CO₂ levels of 800 ppm are often exceeded and in older daycare centers the threshold on 1000 ppm is frequently exceeded. The type of baby bed is of importance, however, unfortunately the most often used double bed configuration showed the worst results. Of this type of bed there are around 90.000 in the Netherlands.

Conclusions

The ventilation effectiveness within the baby bed is much lower than overall in the sleeping room. This results in poor IAQ inside the baby beds. Clearly it showed that more attention is needed to improve the current health situation in which babies sleep.