

Project Overview

Opportunity

Sleep apnea is a significant health issue affecting 1–5% of children, with some studies suggesting it could be as high as 10–20% among children who snore. This condition, characterized by breathing stops or slowdowns during sleep, can lead to physical and mental health issues if untreated. Most common in children aged 2 to 6, sleep apnea often goes underdiagnosed. Many parents seek medical attention when their child exhibits symptoms like snoring, mouth breathing, or other indicators of sleep apnea. While some children may outgrow the condition as their airways develop, untreated sleep apnea can cause serious complications, including developmental challenges. DreamAir aims to address these issues by creating an engaging and educational CPAP system, transforming a necessary medical treatment into a positive experience.

Target Audience

DreamAir is designed for children aged 5-7 and their parents. This age group was selected because children need to be old enough to interact with our system, including engaging with the iPad and reading the content. Younger children often struggle with these interactions, making it difficult for them to adhere to the therapy. By involving both children and parents in the process, we aim to educate them about the importance of treating sleep apnea and CPAP therapy in an engaging and positive manner.

Research Process

Our research included interviews with sleep apnea patients to understand their experiences and challenges with existing CPAP devices. We analyzed social media and online forums to gather broader insights. A key finding was the lack of proper education about sleep apnea, even among some healthcare professionals, highlighting the need for educational components in our solution. Parental feedback informed us about the difficulty of ensuring adherence in younger children, guiding our decision to target the 5-7 age group. We concluded that gamifying the CPAP process could encourage children to wear the device willingly.

Intended Impact

DreamAir aims to revolutionize CPAP therapy for children by making it a positive, engaging, and educational experience. It includes elements that foster emotional comfort and encourage adherence through playification and customization. By involving both children and parents, DreamAir addresses the practical challenges of CPAP therapy and educates them about the importance of treating sleep apnea.

Our key components are:

Bedtime Buddy: A customizable, huggable console that children can personalize, making therapy more approachable and less intimidating.

CurioSnap Mask: A mask that allows children to play and customize it, making the transition to wearing the mask smoother and more enjoyable.

Metamorphosis Mask: A mask designed to grow with the child, ensuring continuous and comfortable therapy through different stages of development.

DreamAir App: An educational and interactive app that connects with the CPAP mask via Bluetooth, featuring a breathing game and providing sleep reports and rewards.

By transforming CPAP therapy into a positive and engaging experience, DreamAir aims to improve treatment adherence and the overall well-being of children with sleep apnea. Our goal is to enhance the quality of life for these children and their families through a comprehensive solution that addresses both the practical and emotional challenges of CPAP therapy.