

## TITLE

A STANDARDIZED ANALYSIS OF FATIGUE IN CHILDREN WITH IRON DEFICIENCY AND IRON DEFICIENCY ANEMIA

## AUTHORS

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## INTRODUCTION

Children with iron deficiency (ID) and iron deficiency anemia (IDA) often present with fatigue as a predominant symptom, affecting activities of daily living and translating to a poor quality of life. Early studies were unable to show a clear association between fatigue and ferritin/hemoglobin levels due to lack of proper instrumentation to assess this clinical problem.

## OBJECTIVE

The aim of this study is to evaluate patient and parental assessment of fatigue for those diagnosed with ID and IDA using a validated fatigue scale.

## METHODS

PedsQL™ Multidimensional fatigue scale was administered to patients > 2 years of age affected with ID/IDA and their parents at St Christopher's hospital for Children in Philadelphia, PA. Lower scores (<50%) on the survey indicated significant fatigue. We performed a retrospective chart review of the participants to obtain cause of ID/IDA, demographics, hemoglobin, red cell indices, iron studies and response to treatment. A total of 72 sets of surveys were analyzed. Correlation and ANOVA analyses were applied.

## RESULTS

Results showed patients and parents reported similar fatigue scores as evidenced by the significant moderately positive correlation between the two groups for all fatigue categories, with a correlation coefficient ranging between 0.534-0.637 and p-value <0.001. Among all patients, 60% reported total fatigue scores less than 50; 74% reported significant sleep/rest fatigue, 47% reported significant general fatigue, and 45% reported cognitive fatigue. There was no statistically significant difference between fatigue scores in patients with ID and IDA.

## CONCLUSION

Among our population, a significant amount of ID and IDA patients reported high fatigue levels. Fatigue scores did not differ between patients with ID and IDA suggesting that low serum ferritin may be contributing more to fatigue than anemia, as we would expect patients with IDA to have lower scores. Ultimately, we plan to expand our study to a larger sample size and to investigate changes in serum ferritin levels and fatigue scores with ID and IDA populations after completion of iron therapy.