Behavioral Health Implications as it Relates to Childhood Vitamin D Levels

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Abstract

Childhood behavioral health disorders are a growing public health concern. Our group hypothesized that behavioral health disorders are associated with vitamin D deficiency. After analyzing pediatric codes collected by healthcare providers from an urban clinic, vitamin D deficiency (being in almost every case that we coded the match to) was not significantly associated with children's behavior. Throughout numerous other reported studies performed elsewhere, but analyzed by our group, a correlation was commonly present. The importance of children consuming adequate amounts of vitamin D is extremely important but not limited to, combatting behavioral health issues: the latter of which may lead to self-medication as they mature. As this study only highlighted the association of vitamin D deficiencies and its relation to behavioral health problems in a specifically located pediatric population, more testing must be conducted if we are to draw meaningful and adequate conclusions.

Background

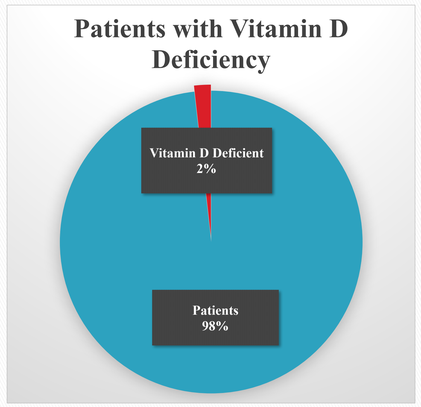
- As stated by James M. Greenblatt M.D., "Vitamin D's effect on mental health extends beyond depression. Schizophrenia has also been linked with abnormal levels of vitamin D."
- As proven through studies, preventative medicine, such as the diagnosis and treatment of vitamin D deficiency, can aid in the avoidance of a behavioral health occurrence.
- From a Finnish birth cohort McGrath stated, "The lack of vitamin D supplement in the first year of life is proven to have an increased risk of schizophrenia in males."
- Behavioral health problems can be avoided with early detection and treatment of vitamin deficiency; a preferred option than having to later treat patients struggling with a behavioral health disorder, especially in a low income urban area, where many are unable to afford the needed medication.
- Commonly, many in this position end up self-treating with alcohol or other mind altering substances; all of which leads to a variety of new health concerns.

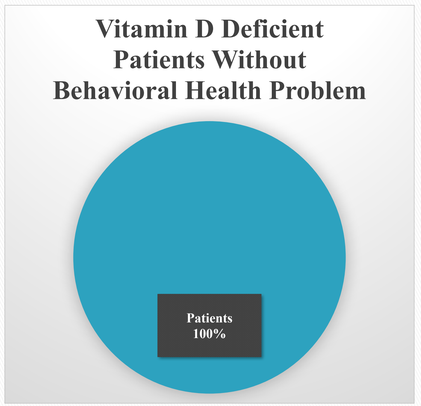
Method

- We read multiple case files that show a correlation between patients who have behavioral health issues as well as a vitamin D deficiency.
- We decided to test out our hypothesis and see if we would get same to similar results.
- We compiled patient codes that correlate with patients having either a vitamin D deficiency or behavioral health problem into an excel file.
- We organized all the behavioral health codes and determined if those patients also had a code for vitamin D deficiency.
- We analyzed organized data.

Results

- **45** patients with vitamin D deficiency were discovered as seminal cases and **2,481** were randomly selected subjects as controls.
- We used conditional logistic regression to calculate the odds ratio or for having previously received a diagnosis of vitamin D deficiency between subjects with and without behavioral health issues.
- In this study, **0** of the **2,481** sampled subjects (0%) had received a diagnosis of vitamin D deficiency prior to their index date of a behavioral health problem.
- After adjusting for age, sex, index year, geographic location, and obesity, behavioral health issues were still significantly not associated with a prior diagnosis of vitamin D deficiency.
- It was found that the subjects with behavioral health problems were obviously not sufficiently tested for vitamin D deficiency as no CPT 82306 billing codes were listed in the report.





Future Work

- Test pediatric patients with behavioral health problem for vitamin D deficiency.
- Test patients in all environments.
- Test for all vitamin deficiencies when diagnosing a behavioral health problem.
- Test for all mineral deficiencies when diagnosing a behavioral health problem.
- Compare family history of behavioral problems.

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