

# Vitamin B12 screening at the psychiatric inpatient unit at HMC, qatar quality improvement project

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## Background and purpose

Vitamin B12 has been the subject of numerous studies since the discovery of vitamin B compounds in 1974. It is essential for optimal neurological functioning and its deficiency results in neurological and psychiatric diseases, ranging from mild presentations of numbness and tingling to severe mood and cognitive impairment. This is demonstrated in Penninx et al.,<sup>1</sup> a prospective cohort study with a sample of 700 disabled, non-demented community-dwelling women with low B12 levels had a twofold risk of severe depression. The findings are consistent with the results of The Rotterdam study,<sup>2</sup> a population-based study that reported that elderly persons with a deficiency in vitamin B12 levels are more likely to have depression. Similarly, a link between depression and low B12 has been reported in Jae-Min Kim et al.,<sup>3</sup> indicating that it may be a risk factor for late onset depression.

When it comes to cognition, many studies addressed the effects of low B12 levels on deteriorating cognitive function, specifically targeting dementia and Alzheimer's disease. A study found that individuals suffering from Alzheimer's were more likely to have low serum B12 levels.<sup>4</sup> In another longitudinal Swedish study, Low B12 and foliate concentrations posed an increased risk in the development of Alzheimer's disease.<sup>5</sup>

In a 2010 study by Skarupski et al.,<sup>6</sup> protective factors of high intake of B6 and B12 against depressive symptoms were highlighted in a study on community-residing older adults. And in 2013 a randomized clinical trial found that B12 supplementation alongside antidepressants significantly improves depressive symptoms.<sup>7</sup> Screening for B12 levels in patients with mild dementia was recommended after a study found some improvement that was measured by MMSE in such patients who were on B12 replacement, despite the same study showing no response in patients with severe dementia on B12 replacement.<sup>8</sup>

This project is aimed at assessing the number of admitted psychiatric patients who were screened for vitamin B12 level on admission.

## Methods

Admission records, including baseline demographic characteristics, and initial laboratory workup were reviewed for consecutive patients admitted to the Hamad Psychiatry Hospital in Qatar over a period of entire year in 2013, in a Quality Improvement Project.

## Acknowledgments

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## Conflicts of interest

Author declares there are no conflicts of interest.

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