

THESIS

EFFECTIVENESS OF VITAMIN B12 SUPPLEMENTATION ON REDUCING FATIGUE LEVELS IN WORKERS OF PONDOK MODERN DARUSSALAM GONTOR BUSINESS UNIT: A CASE STUDY ON THE LA-TANSA CONVECTION INDUSTRY



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UNIVERSITAS DARUSSALAM GONTOR

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APPROVAL SHEET

THESIS DEFENSE

It is hereby stated that the thesis with the title :

**EFFECTIVENESS OF VITAMIN B12 SUPPLEMENTATION ON
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DARUSSALAM GONTOR BUSINESS UNIT: A CASE STUDY ON THE
LA-TANSA CONVECTION INDUSTRY**

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It has been reviewed and recommended to meet scientific standards, in terms of
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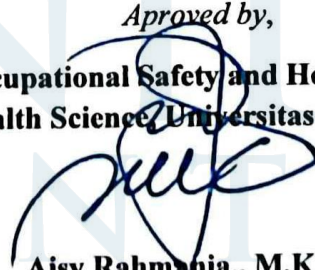
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VALIDITY SHEET

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ABSTRACT

**EFFECTIVENESS OF VITAMIN B12 SUPPLEMENTATION ON
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DARUSSALAM GONTOR BUSINESS UNIT: A CASE STUDY ON THE
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Work fatigue in the garment industry affects productivity and safety and is influenced by excessive workloads, piecework systems, and a lack of attention to workers' health. Prevention can be achieved through vitamin B12 intake, which enhances energy and concentration. This study examines the effectiveness of vitamin B12 in reducing work fatigue as a recommendation for occupational health policies. This study is a quasi-experimental research involving 57 out of 68 employees of La-Tansa Konveksi who met the inclusion criteria. The work fatigue levels of all participants were measured before and after the intervention, which consisted of administering vitamin B12 supplement tablets for six days. The study was conducted from October 2024 to January 2025. Fatigue measurement was performed using a reaction timer instrument, and statistical analysis was conducted to compare the average values before and after the intervention. The reaction time before supplementation was 278, whereas after supplementation, it decreased to 266. A significant reduction in the average reaction time was observed after the intervention (P-Value 0.000 or 0.05), indicating a statistically significant difference. This study proves that six-day vitamin B12 supplementation effectively reduces work fatigue among La-Tansa Konveksi employees, as indicated by the decrease in reaction time scores from 278 to 266 (P-Value 0.000). Future research is recommended to include workers with heavier workloads, explore the optimal dosage, and incorporate a control group for more accurate validation.

Keywords: Work Fatigue, Objective Fatigue Level, Vitamin B12, Convection.

ABSTRAK

**EFEKTIVITAS PEMBERIAN SUPLEMEN VITAMIN B12 TERHADAP
PENURUNAN TINGKAT KELELAHAN PADA PEKERJA UNIT USAHA
PONDOK MODERN DARUSSALAM GONTOR: STUDI KASUS PADA
INDUSTRI KONVEKSI LA-TANSA**

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Kelelahan kerja di industri konveksi berdampak pada produktivitas dan keselamatan, dipengaruhi oleh beban kerja berlebih, sistem borongan, dan kurangnya perhatian terhadap kesehatan. Pencegahan dapat dilakukan dengan asupan vitamin B12, yang meningkatkan energi dan konsentrasi. Penelitian ini menguji efektivitas vitamin B12 dalam mengurangi kelelahan kerja sebagai rekomendasi kebijakan kesehatan perusahaan. Penelitian ini merupakan penelitian quasi-eksperimen dengan sampel sebanyak 57 dari 68 karyawan La-Tansa Konveksi yang memenuhi kriteria inklusi. Tingkat kelelahan kerja seluruh peserta diukur sebelum dan sesudah pemberian intervensi berupa tablet suplemen vitamin B12 selama 6 hari. Pelaksanaan penelitian dimulai dari bulan oktober 2024 hingga bulan januari 2025. Pengukuran kelelahan dilakukan dengan perhitungan menggunakan instrumen reaction timer. Data yang dikumpulkan dianalisis secara statistik untuk membandingkan rata-rata nilai sebelum dan sesudah intervensi. Waktu reaksi sebelum suplementasi adalah 278, sedangkan waktu reaksi sesudah suplementasi adalah 266, masing-masing. Ada penurunan rata-rata waktu reaksi sesudah intervensi (P -value 0.000) atau 0.05, sehingga dapat disimpulkan bahwa waktu reaksi sebelum dan sesudah intervensi berbeda secara signifikan penelitian ini membuktikan bahwa suplementasi vitamin B12 selama 6 hari efektif menurunkan kelelahan kerja pada pekerja La-Tansa Konveksi, dengan skor turun dari 278 menjadi 266 (P -Value 0,000). Penelitian selanjutnya disarankan melibatkan pekerja dengan beban lebih berat, mengkaji dosis optimal, dan menggunakan kelompok kontrol untuk validasi lebih akurat.

Kata Kunci: Kelelahan Kerja, Tingkat Kelelahan Objektif, Vitamin B12, Konveksi.

AUTHENTICITY STATEMENT

It is hereby declared by,

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Thesis Title : Effectiveness of Vitamin B12 Supplementation on Reducing Fatigue Levels in Workers of Pondok Modern Darussalam Gontor Business Unit: A Case Study on The La-Tansa Convection Industry.

I sincerely declare that the research contained in this thesis is my own work and does not belong to anyone else. This thesis has never been published before, except for some parts with original references.

If in the future it is found that this work is plagiarised. I am ready to be given administrative and academic sanctions.

Ponorogo, 14 February 2025
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FOREWORD

Praise be to Allah SWT, the Lord of the universe who has provided all forms of enjoyment in the form of physical and spiritual health so that the author can easily work and complete his thesis with the title " Effectiveness Of Vitamin B12 Supplementation On Reducing Fatigue Levels In Workers Of Pondok Modern Darussalam Gontor Business Unit: A Case Study On The La-Tansa Convection Industry".

This thesis is prepared as one of the requirements to complete the final study project at the Occupational Safety and Health Study Program, Faculty of Health Science, Universitas Darussalam Gontor Ponorogo.

The author realizes that the writing of this thesis will not succeed without guidance and assistance from various parties, both material and spiritual. For that with all humility, the author would like to thank you very much:

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The author also thanks all parties who have assisted the researcher in completing this thesis. The researcher hopes that this thesis can be useful for readers and can be used as a reference for development in a better direction.

Ponorogo, 09 January, 2025

Writer

Mohammad Abdul Khamid

