

## ABSTRAK

**Tamara Angelsky M. Hubungan Durasi Paparan Sinar Matahari dan Asupan Vitamin D dengan Kejadian ISPA Pada Jemaat Gereja AFY Kota Medan. Skripsi. Program Studi Gizi. Fakultas Teknik. Universitas Negeri Medan. 2026.**

Infeksi Saluran Pernapasan Akut (ISPA) masih menjadi masalah kesehatan global dengan prevalensi lebih dari 5% populasi dunia. Di Indonesia, ISPA masih sering ditemukan pada kelompok usia produktif. Salah satu faktor yang diduga berhubungan dengan kejadian ISPA adalah rendahnya durasi paparan sinar matahari dan asupan vitamin D. Paparan sinar matahari berperan dalam sintesis vitamin D yang berfungsi sebagai *imunomodulator* untuk meningkatkan daya tahan tubuh terhadap infeksi saluran pernapasan. Vitamin D berperan dalam meningkatkan produksi peptida antimikroba seperti *cathelicidin* yang membantu tubuh melawan mikroorganisme penyebab infeksi. Penelitian ini bertujuan untuk mengetahui hubungan durasi paparan sinar matahari dan asupan vitamin D dengan kejadian ISPA pada jemaat Gereja AFY Kota Medan. Penelitian dilaksanakan di Gereja AFY Kota Medan pada bulan Mei–Juli 2026. Populasi dalam penelitian ini adalah seluruh jemaat berusia 18–59 tahun sebanyak 206 orang. Teknik pengambilan sampel menggunakan *accidental sampling* dengan jumlah sampel sebanyak 69 responden. Penelitian ini menggunakan desain *cross sectional*. Data penelitian dikumpulkan menggunakan *Sun Exposure Questionnaire* untuk mengukur durasi paparan sinar matahari, *Semi Quantitative Food Frequency Questionnaire* (SQ-FFQ) Vitamin D untuk mengukur asupan vitamin D, dan kuesioner Survei Kesehatan Indonesia (SKI) 2023 untuk mengukur kejadian ISPA. Teknik analisis data menggunakan analisis deskriptif, uji *Chi-Square*, dan uji regresi logistik binomial. Berdasarkan hasil analisis uji *Chi-Square* menunjukkan terdapat hubungan yang signifikan antara durasi paparan sinar matahari dengan kejadian ISPA ( $p = 0,040$ ) dan asupan vitamin D dengan kejadian ISPA ( $p = 0,031$ ) pada taraf signifikansi  $\alpha=0,05$ . Hasil analisis regresi logistik binomial menunjukkan bahwa durasi paparan sinar matahari ( $p = 0,031$ ; OR = 3,160) dan asupan vitamin D ( $p = 0,024$ ; OR = 3,919) berhubungan signifikan dengan kejadian ISPA. Responden dengan durasi paparan sinar matahari yang kurang berpeluang 3,160 kali mengalami ISPA, sedangkan responden dengan asupan vitamin D yang kurang berpeluang 3,919 kali mengalami ISPA. Variabel yang paling dominan berhubungan dengan kejadian ISPA adalah asupan vitamin D. Penelitian ini menunjukkan pentingnya kecukupan durasi paparan sinar matahari dan asupan vitamin D dalam pencegahan ISPA.

**Kata kunci:** asupan vitamin D, durasi paparan sinar matahari, ISPA.

## ABSTRACT

**Tamara Angelsky M. *The Relationship between Duration of Sunlight Exposure and Vitamin D Intake with the Incidence of ARI among Members of AFY Church Medan. Thesis. Nutrition Study Program. Faculty of Engineering. State University of Medan. 2026.***

Acute Respiratory Infection (ARI) remains a global health problem with a prevalence of more than 5% of the world's population. In Indonesia, ARI is still commonly found among productive-age adults. One of the factors suspected to be associated with ARI incidence is inadequate duration of sunlight exposure and vitamin D intake. Sunlight exposure plays an important role in vitamin D synthesis, which functions as an immunomodulator to enhance the body's immune response against respiratory tract infections. Vitamin D enhances the production of antimicrobial peptides, such as cathelicidin, which help the body defend against infection-causing microorganisms. This study aimed to determine the relationship between duration of sunlight exposure and vitamin D intake with the incidence of Acute Respiratory Infection (ARI) among members of AFY Church Medan. This study was conducted at AFY Church, Medan City, from May to July 2026. The study population consisted of 206 congregation members aged 18–59 years. Samples were selected using an accidental sampling technique, resulting in 69 respondents. This study employed a cross-sectional design. Data were collected using the Sun Exposure Questionnaire to assess sun exposure duration, the Semi Quantitative Food Frequency Questionnaire (SQ-FFQ) for Vitamin D to assess vitamin D intake, and the Indonesia Health Survey (SKI) 2023 Questionnaire to assess the incidence of ARI. Data were analyzed using descriptive statistics, the Chi-Square test, and binary logistic regression. The Chi-Square test results showed a significant association between duration of sunlight exposure and ARI incidence ( $p = 0.040$ ), as well as between vitamin D intake and ARI incidence ( $p = 0.031$ ), at a significance level of  $\alpha = 0.05$ . Binary logistic regression analysis showed that inadequate duration of sunlight exposure ( $p = 0.031$ ; OR = 3.160) and inadequate vitamin D intake ( $p = 0.024$ ; OR = 3.919) were significantly associated with ARI incidence. Respondents with inadequate duration of sunlight exposure were 3.160 times more likely to develop ARI, while respondents with inadequate vitamin D intake were 3.919 times more likely to develop ARI. Vitamin D intake was identified as the most dominant factor associated with ARI incidence. These findings highlight the importance of adequate sunlight exposure and vitamin D intake in the prevention of ARI.

**Keywords:** vitamin D intake, duration of sunlight exposure, acute respiratory infection (ARI).