

# Penilaian efektivitas dan dermatofarmakokinetik krim pelembap minyak kelapa untuk pencegahan sekunder dermatitis-tangan akibat kerja pada perajin batik = Effectiveness and dermatopharmacokinetic of moisturizer containing cocos nucifera L. and glycerin for secondary prevention of hand dermatitis among batik workers

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## Abstrak

### <b>ABSTRAK</b><br>

Batik workers are a group at highest risk of acquiring occupational contact dermatitis, especially hand dermatitis. Prevention of using personal protective equipment (PPE) does not provide optimal protection therefore other interventions are needed for secondary prevention. The development of topical agents that improve skin barrier function is a promising approach for the management of hand dermatitis. Topically applied lipids and humectants may interfere with skin barrier function, and facilitate skin barrier repair. The aim of this study is to evaluate the effectiveness of Cocos nucifera and glycerine for secondary prevention of hand dermatitis among batik workers.

In a double-blind, cross-over randomized study, the effect of glycerine coconut oil-containing cream vs. glycerine alone on skin barrier functions was determined by assessment after repeated application of moisturizers over a 2-week period in batik workers with occupational hand dermatitis. As much as 32 batik dyeing and/or rinsing process workers were enrolled in this study for a minimum of 6 months with mild to moderate occupational hand dermatitis. Assessment of transepidermal water loss (TEWL), skin capacitance and the Hand Eczema Severity Index (HECSI) were made at baseline and day 14.

The research showed that the type of hand dermatitis among subjects that occurs were 56 palmar hyperkeratosis, 15.6 interdigital eczema, 12.5 nummular hand eczema, 9.4 pulpitis and 6.3 recurrent vesicular hand eczema. As much as 96.97 of the subjects have nail discoloration. 40.6 of the subjects always use PPE were at risk of developing hand dermatitis.

After applying 14 days, both moisturizers showed clinical improvement by 20 decreased of HECSI and TEWL and 20 increased of skin capacitance. There was no statistically significant treatment effect between both moisturizers. Skin stripping result was analyzed using chromatography method showed penetration at 3rd hour (uptake) and still detected at 12th hour (clearance).

The findings of the study support the skin health program for batik workers and routine usage of moisturizers are recommended for a minimal of 12 hours per day to prevent hand dermatitis.