

A NEW PROTOCOL TO EVALUATE SUPERIOR-RESISTANT ATTRIBUTES OF LIQUID FOUNDATION FOR JAVANESE-INDONESIAN BRIDES

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INTRODUCTION

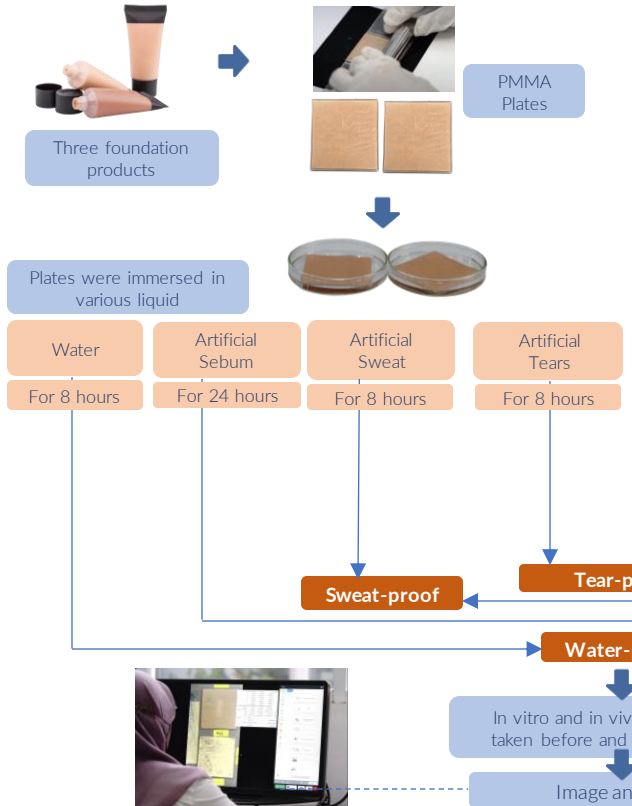
Highly resistant against water, sebum, sweat, and tears become essential attributes for foundation makeup as nowadays the products are expected to last for long periods of time even under intense wear conditions. Due to its wedding custom, Javanese wedding ceremony can be considered as an extreme setting for makeup in which long wear performance can be impaired by water exposure, extreme heat, as well as tears production during procession.



This study proposed in vitro methods to evaluate the smudge-proof, sweat-proof, water-proof, tear-proof properties of liquid foundation using image analysis on PMMA plate immersed in various liquids and compared with the in vivo result.

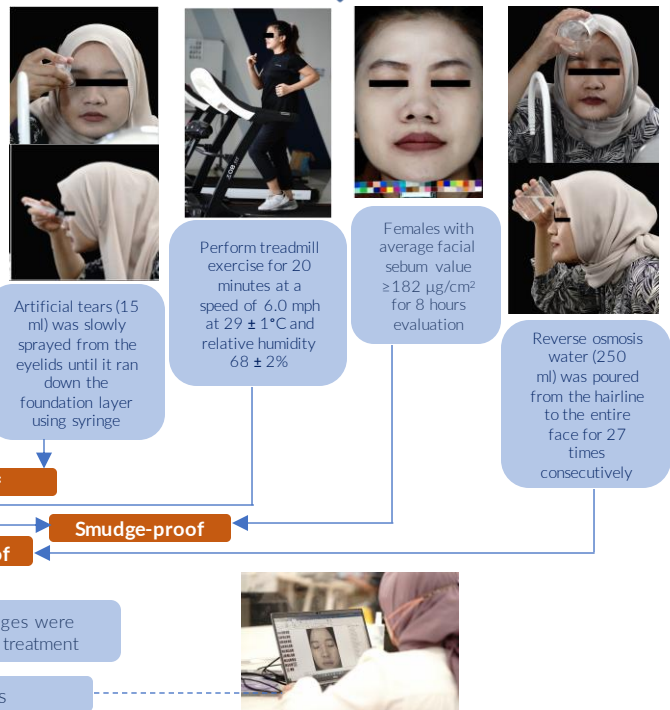
MATERIALS & METHODS

In Vitro



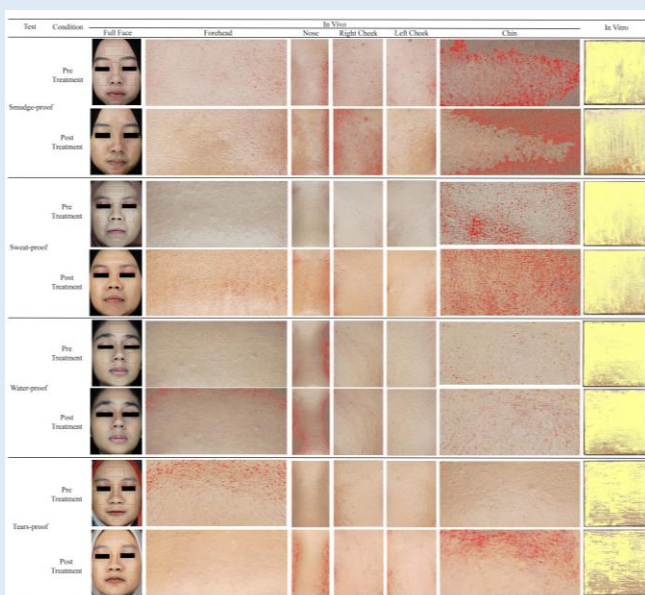
In Vivo

A total of 3-4 pumps of foundation samples were spread on subject's face using puff applicator and allowed to dry for 15 minutes



RESULTS & DISCUSSIONS

In Vitro and In Vivo Evaluation Using Image Analysis Before and After Treatment



Test	Spearman's Correlation	
	ρ	p
Smudge-proof	1	0,5
Sweat-proof	1	0,5
Water-proof	1	0,5
Tear-proof	0,5	0,766

- The in vitro evaluations of the smudge-proof, sweat-proof, and water-proof performance for all foundation samples showed a positive Spearman's correlation against in vivo ($p=1.0$, $p=0.5$) while the tear-proof property assessment also exhibited a strong positive correlation with different significant value ($p=0.5$, $p=0.766$), indicating that the proposed in vitro methods for all attributes have a strong positive correlation with the findings on the human skin, although insignificant.
- Further parametric (Pearson's) correlation analysis should be conducted followed by the high number of volunteers in various skin types which represent the world's population in order to define the numerical correlation between in vitro and in vivo regressions.

CONCLUSIONS

The findings of this study demonstrate potential in vitro methods to quantify the smudge-proof, sweat-proof, water-proof, tear-proof properties of liquid foundation makeup. This provides a new approach in predicting the superior-resistant attributes required when formulating foundation for extreme wear conditions such as Javanese wedding ceremony and similar circumstances.

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