

Non-invasive Self-Care Anemia Detection during Pregnancy Using a Smartphone Camera

Publons ID	17899341
Wos ID	WOS:000399169500030
Doi	10.1088/1757-899X/172/1/012030
Title	Non-invasive Self-Care Anemia Detection during Pregnancy Using a Smartphone Camera
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Publish Date	2017
Journal Name	MATERIAL CHEMISTRY DEVELOPMENT FOR FUTURE MEDICINE, INDUSTRY, ENVIRONMENTAL AND BIOMATERIAL APPLICATION
Citation	12
Abstract	<p>Indonesian maternal mortality rate is the highest in South East Asia. Postpartum hemorrhage is the major causes of maternal mortality in Indonesia. Anemia during pregnancy contributes significantly to postpartum hemorrhage. Early detection of anemia during pregnancy may save mothers from maternal death. This research aim to develop a non-invasive self-care anemia detection based on the palpebral color observation and using a smartphone camera. The color intensity (Red, Green, and Blue) was then measured using a Colorgrab software (Loomatix) and analyzed compared to the hemoglobin concentration of the samples, measured using standard Spectrophotometer method. The result showed that the red color intensity had a high correlation ($R^2=0.814$) with a linear regression of $y=14.486x + 50.228$. This preliminary study may be used as anemia early detection which more objective compared to visual assessment usually performed.</p>
Publish Type	Book in series
Publish Year	2017
Page Begin	(not set)
Page End	(not set)
Issn	1757-8981
Eissn	
Url	https://www.webofscience.com/wos/woscc/full-record/WOS:000399169500030
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