INTISARI

Latar Belakang: Masalah infeksi cacing usus pada anak masih menjadi tantangan di Indonesia terutama di wilayah Indonesia timur, namun ketersediaan alat penunjang diagnostik tidak cukup memadai. Diperlukan sebuah sistem skoring diagnostik sederhana dan valid untuk membantu penegakan diagnosis infeksi cacing usus pada anak.

Tujuan: Penelitian ini bertujuan mengembangkan dan memvalidasi sistem skoring diagnosis klinis untuk menentukan infeksi cacing usus pada anak.

Metode: Penelitian menggunakan data sekunder dari survei potong lintang studi *Neglected Infectious disease Diagnosis* (NIDIAG) yang dilakukan di Tulehu, Maluku pada tahun 2015, melibatkan 434 responden yang memenuhi kriteria kelayakan. Sistem skoring disusun dari 4 determinan sosiodemografi, 5 faktor perilaku berisiko, 7 tanda, 11 gejala klinis dan 3 karakteristik responden yang dipilih berdasarkan kajian literatur dan ketersediaan data. Total 30 variabel dianalisis dan disaring menggunakan uji bivariat dan regresi logistik untuk mendapatkan model akhir yang divalidasi dengan hasil pemeriksaan *Direct smear*. Batas nilai skoring ditentukan dengan *receiving operating curve* (ROC). Validitas dan kemampuan model ditentukan dengan nilai sensitivitas, spesifisitas, prediksi positif dan negatif (PPV & NPV), *likelihood ratio* (LR) dan *area under curve* (AUC).

Hasil: Tiga variabel ditetapkan menjadi model sistem skoring yaitu pengolahan air minum, kontak regular dengan binatang, dan konsistensi feses. Total nilai skor $\geq$ 4.5 mengindikasikan probabilitas tinggi terhadap infeksi cacing usus sedangkan nilai skor < 4.5 direkomendasikan melakukan rujukan pemeriksaan laboratorium. Model skoring ini memiliki sensitivitas, spesifisitas, PPV, NPV dan LR positif berturut-turut sebesar 63.3%, 53.8%, 70.08%, 46.31% dan 1.37. Sedangkan nilai AUC (95%CI): 0.628 (0.574-0.682).

Kesimpulan: Berdasarkan validitas dan kemampuannya, sistem skoring ini tidak cukup penting makna kliniknya dalam uji diagnosis sehingga sistem skoring ini lebih layak sebagai uji skrining infeksi cacing usus pada anak 1-18 tahun di daerah prevalensi tinggi dan keterbatasan pemeriksaan laboratorium.

Kata Kunci: anak, alat diagnostik, infeksi cacing usus, model skoring, validasi

ABSTRACT

Background: Intestinal helminthiasis among children in Indonesia is remaining a challenge particularly in eastern part of Indonesia. However, the resources of diagnostic tools is still lacking. A simple and valid diagnostic scoring system is required to support diagnosis for intestinal helminthiasis among children.

Objective: This study aims to develop and validate the clinical diagnostic scoring system to determine intestinal helminthiasis among children.

Methods: A study which used secondary data from cross sectional survey of Neglected Infectious disease Diagnosis (NIDIAG) Study in Tulehu, Maluku 2015 was conducted among 434 subjects who met the eligibility criteria. Scoring system was constructed from 4 sociodemografic determinant, 5 risk behaviour, 7 signs, 11 symptoms, and 3 characteristics of subjects based on literature review and data availability. Total 28 variables to be analyzed by bivariate and multivariate regresi logistic to obtain the model. The result of Direct smear used to validate against the model. The cut-off of scoring system is obtained by receiving operating curve test. The validity and model performance were assessed by sensitivity, specificity, positive and negative predictive value (PPV & NPV), likelihood ratio (LR)and area under curve (AUC) value.

Result: Three variables were derived as model for scoring system, these are drinking water treatment, animal contact and stool consistency. Total score $\geq$ 4.5 was determined as highly probable getting intestinal helminthiasis while the score < 4.5 was recommended to make referrals for laboratory test. The sensitivity, specificity, PPV, NPV and LR positive of this developed scoring system were 63.3%, 53.8%, 70.08%, 46.31% and 1.37 respectively. Meanwhile, the value of AUC (95%CI) was 0.628 (0.574-0.682) which interpreted as "*acceptable discrimination*".

Conclusion: Based on its validity and performance, this scoring system is not important enough for its clinical significance in diagnostic test. This scoring system is more feasible as a screening test for intestinal helminthiasis among children 1-18 years old in area with high prevalence and lack of laboratory diagnostic tool.

Kata Kunci: children, diagnostic tools, soil-transmitted helminth infection, scoring model, validity