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## Anemia and its correlation with parasite infections in children from riverside communities in the Brazilian Amazon: A public health problem?

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**Aims:** To identify the prevalence and the determinants of anemia as well as its correlation to enteroparasitosis in a population of Riverside children living at two communities at the Northeast region of Para, Brazil. Population based cross-sectional and epidemiological study.

**Settings:** The study is carried at Pharmacy College of Federal University of Para and Lights in the Amazon program between May 2013 and June 2015.

**Method:** The biological material for the blood screening was obtained through venal aspiration in a tube containing EDTA and anticoagulant. Any samples with hemoglobin concentrations lower than 11 g/dL to individuals between 6 and 60 months and lower than 11.5 g/dL to individuals older than 60 months were considered anemia. To determinate the presence and type of enteroparasitosis, feces samples were subjected to the qualitative method of Lutz or Hoffman Pons and Janer. The correlation between anemia and its determinants was analyzed using PRISMA 5.0.

**Results:** Out of 98 children, 16 (16.32%) were anemic, out of which 14 (87.5%) were infected by parasites, 3 of them by one type and 11 by two or more different parasites. The non-anemic and infected by at least one parasite ones were 47 (47.96%). Regarding the incidence of parasites, *Trichuris trichiura* (67%), followed by *Ascaris lumbricoides* (26%), were the most prevalent. The multiple logistic regressions between anemia and infection by one or multiple parasites showed significance for multiple-parasite infections ( $P=0.05$ ). The association between anemia and infection by parasites, measured by the Odds Ratio test among the four groups was statistically significant (OR: 5.21; IC 95%: 1.11-24.43;  $P=0.05$ ).

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## Effect of encapsulation on the viability of probiotics in yoghurt

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It is well established that probiotic bacteria exert myriad of beneficial effects on human health, including antibiotic therapy, improved symptoms of lactose intolerance, resistance against cancer, reduced incidence of diarrhea in humans and production of antimicrobial substances and reducing cholesterol level. The objective of this study was to evaluate the stability of probiotics in the yoghurt with and without encapsulation. Probiotic yoghurt was compared with control yoghurt in terms of chemical, physical, microbial and sensory properties over a period of 15 days of storage. Yoghurt was prepared with free lactic acid bacteria and with encapsulated bacteria and was stored at 4 °C. Yoghurt was subjected to physiochemical and microbial analysis. The addition of the probiotic bacteria in the yoghurt samples either in encapsulated or without encapsulation significantly affected the results for pH, lactose, acidity, viscosity and syneresis. However, the addition of the culture of probiotic either in free or encapsulated form did not bring any distinct difference in color, flavor and taste over the 15 days of storage period.

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