**A Randomized Comparative Study Assessing Parental Anxiety Levels during Bilirubin Measurement in Neonatal Jaundice: A Comparison of Conventional Blood Taking and Transcutaneous Bilirubin Method**

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ABSTRACT

Background:

Neonatal jaundice screening is important in preventing progression to kernicterus and its morbidity. The transcutaneous bilirubinometer regains popularity as a low-cost, portable neonatal jaundice screening tool whose accuracy is comparable. Its effects on parents are widely accepted as favourable; however, its impact on parental anxiety remains unproven.

Objective:

To measure and compare the state and trait anxiety score between parent whom children undergone blood taking for serum bilirubin versus parents whom children undergone transcutaneous bilirubinometer test.

Method:

A randomised comparative study at the Emergency Department of the Hospital Canselor Tuanku Muhriz was conducted for the period of 4 month. Parents seeking neonatal jaundice screening were randomly assigned using electronic randomization software to either the transcutaneous bilirubinometer or conventional blood-taking groups. Spielberger’s state-trait anxiety index (STAI) questionnaire which is already previously validated both in English and Malay language was used in this study. Permission and license to use STAI questionnaire was obtained from the copyright owners. A baseline trait anxiety score was taken prior the procedure, while state anxiety score was measured after. The scores were recorded and statistically analysed using SPSS software.

Results:

Ninety-seven parents participated in this study. No significant difference in baseline trait anxiety existed between groups (transcutaneous group mean score = 39.24, SD = 7.385; conventional group mean score = 36.44, SD = 10.173; p > 0.05). Transcutaneous bilirubinometer group exhibited significantly lower state anxiety (mean score = 35.31, SD = 10.05) compared to conventional blood-taking group (mean score = 46.65, SD = 12.63; p = 0.000).Clinically significant state anxiety was more prevalent in parents from the conventional blood-taking group with 50% of the parents affected than 22.4% in the transcutaneous bilirubinometer group (p = 0.005).

Conclusion:

The transcutaneous bilirubinometer did not only reduced state anxiety compared to conventional blood-taking but also diminished clinically significant parental anxiety during neonatal jaundice screening. Thus, the transcutaneous bilirubinometer is a superior screening tool when concerned with parental anxiety especially in the ED setting.