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

**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.

Method:

A randomised study at the Emergency Department of the Universiti Kebangsaan Malaysia Medical Centre (ED UKMMC) was conducted. Parents seeking neonatal jaundice screening were assigned randomly to the transcutaneous bilirubinometer or conventional blood-taking groups. A trait anxiety score was taken before the procedure, while state anxiety was measured after, utilising Spielberger’s state-trait anxiety index (STAI) questionnaire. The scores were recorded and statistically analysed.

Results:

Ninety-seven parents participated. No significant difference in 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 (50%) than the transcutaneous bilirubinometer group (22.4%; p = 0.005).

Conclusion:

The transcutaneous bilirubinometer 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 compared to conventional blood collection.

Keywords: Anxiety, Parent psychosocial functioning, Neonatology, Infancy and Early Childhood