• 計畫中文名稱	分娩中胎兒窘迫對新生兒心率變異度及神經功能發展之影響及按摩治療介入措施之成效探討		
• 計畫英文名稱	Impacts of Intrapartum Fetal Distress on Neonatal Heart Rate Variability and Neurologic Development, and the Effect of Neonatal Massage		
• 系統編號	PC9808-0357	• 研究性質	應用研究
• 計畫編號	NSC98-2314-B038-015	• 研究方式	學術補助
• 主管機關	行政院國家科學委員會	• 研究期間	9808 ~ 9907
• 執行機構	臺北醫學大學護理學系		
• 年度	98 年	• 研究經費	646 千元
• 研究領域	護理學, 臨床醫學類		
• 研究人員	陳淑如,鄭綺,鍾明惠,林寬佳		
• 中文關鍵字	心率變異度；自主神經功能；胎兒窘迫；阿帕嘉計分		
• 英文關鍵字	heart rate variability； autonomic nervous system； fetal distress； Apgar score；		
• 中文摘要	分娩中胎兒窘迫是造成新生兒自主神經系統損傷的主要原因之一，而完整的自主神經 功能是維持生命及正常生長發育不可或缺的要素。臨床上，新生兒 Apgar score 評估被作爲 胎兒窘迫嚴重度及新生兒預後的指標，但 Apgar score 是否能真正反映出神經系統所受到的 傷害仍無定論。心率變異性(heart rate variability, HRV) 在近年來已被廣泛運用於臨床自主 神經功能的評估，心率變異度的下降反映出自主神經功能的不平衡，並且是許多疾病死亡 率的重要預測因子。 因此本研究將透過心率變異性(heart rate variability, HRV) 的測量來檢查新生兒自主 神經功能狀態。第一年採橫斷式探究性研究，主要目的探討分娩中胎兒窘迫對新生兒心率 變異度之影響，並比較基本屬性對新生兒心率變異度之影響。本階段將以立意取樣法收集 200 位符合收案條件之新生兒。 第二年採縱貫性研究設計，目的在長期追蹤分娩中胎兒窘迫對新生兒出生後一年內心 率變異度及神經功能發展之影響，本階段將延續第一年之個案，分別於出生後滿 6、9 及 12 個月大時進行心率變異度及神經功能發展評估，以了解胎兒窘迫對新生兒長期心率變異 度及神經功能發展上之影響。 第三年採實驗研究法，旨在探討 12 週新生兒按摩對其心率變異度與神經功能發展之 影響，本階段將收取 100 位有胎兒窘迫且呈現心率變異度下降的新生兒，隨機分配至按摩 介入組及控制組，介入組給予爲期 12 週的新生兒按摩治療，控制組則不給予任何措施，成 效指標包括心率變異度及神經功能發展之改善成效。 研究結果將以頻譜分析軟體分析，時域分析指標包括 SDNN，頻域分析指標包括 LF, HF, LF%, HF%, LF/HF 及 TP。統計資料將以 SPSS for windows 13.0 進行資料建檔及分析，第一 年將以獨立 t 檢定及多元階層回歸分析法(hierarchical multiple regression)進行分析，第二年 將以 GEE model 分析胎兒窘迫對新生兒心率變異度及神經功能發展影響之改變情形。第三年則以 t-test 檢定組間的差異，同時以 pearson correlation 檢定兩項介入成效指標間之相關性。 本研究除可了解胎兒窘迫對新生兒短期及長期心率變異度之影響外，並可瞭解新生兒 按摩治療介入措施對出現胎兒窘迫新生兒心率變異度之改善成效，作爲臨床醫護人員在新 生兒進康促進上的參		

	考及了解胎兒窘迫對新生兒自主神經功能的影響。
• 英文摘要	Fetal distress is one of the main causes of neonatal autonomic neural injuries. Normal autonomic nervous function is requisite to maintain life and growth. Apgar score is useful for evaluating the severity of fetal distress and neonatal outcome. However, it is not known that Apgar score exactly reflects the neonatal neural injuries. Heart rate variability (HRV) has been widely used to evaluate the autonomic nervous function. Reduced HRV reflects autonomic imbalance and has been shown to be is an independent predictor of mortality in various patient population. We evaluate the autonomic nervous function of newborn by measuring their HRV. In the first year, a cross-sectional design will be used to explore the influence of intrapartum fetal distress on neonatal HRV, and to study the characteristic factors that affecting neonatal HRV. 200 newborn babies fulfilling the inclusion criteria will be included by purposive sampling. In the second year, a longitudinal study design will be used to follow-up the newborn baby with intrapartum fetal distress for one year to observe their neurological development. HRV and neurological development of the cases in the previous study will be done at 6, 9, and 12 months postpartum to evaluate the long-term effects of intrapartum fetal distress. In the third year, an experimental research will be used to examine the impact of neonatal massage on the improve of HRV and neurological development. A total of 100 newborn babies with fetal distress and decreased HRV will be randomly assigned to massage intervention group or control group. Neonatal massage program will be a 12 weeks program. Outcome indicators include the improvement in HRV and neurological development . The HRV analysis in frequency domains will be performed. Frequency domain parameters include LF, HF, LF%, HF%, LF/HF, and TP. SPSS for windows 13.0 is used for statistical analysis. Independent t test and hierarchical multiple regression are used in the first year. GEE model is used in the second year to analyze the influence of fetal distress on HRV and neurological development. In the third year, group differences are compared by t-test. Pearson correlation is used to test the effects of intervention. Our result will help understand the influence of fetal distress on short-term and long-term fetal HRV, and the effects of neonatal massage on the improvement of HRV for newborn with fetal distress, provide information for clinical staff to promote neonatal health and understand the influence of fetal distress on neonatal autonomic nervous function.