Dimensions of the Construct “Quality Neuraxial Labor Analgesia”

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Introduction: Development of a valid measure of quality neuraxial labor analgesia (QNA) for use in research requires clarification/definition of the underlying theoretical construct to be measured. Our previous qualitative work described QNA as multidimensional, comprised of domains relating to cognition, emotion, physical function and perceived control[1] and suggested relationships between these dimensions and QNA. These included a direct relationship between women's perceptions of overall QNA and pain relief, control and cognitive function during labor and delivery, and an inverse relationship between QNA and emotional distress related to pain or epidural side-effects. The current study quantitatively explored these relationships using data generated from parturients during the Item Generation phase of tool development.

Methods: A purposeful sample of postpartum women of mixed parity, race, SES and delivery mode were recruited within 72 hours of delivery. All were native English speakers and had received neuraxial analgesia/PCEA for the current delivery. Exclusion criteria included receipt of parenteral opioids within 4 hours of neuraxial analgesia. Women's perceptions of QNA were captured using a 49 item questionnaire generated from our previous work with parturients [1] and experts (Labor nurses/SOAP anesthesiologists) during the current Item Generation Phase. Parturients in this phase neither added nor suggested modification to items. Questionnaires were administered by trained assistants, not involved in patient care. Items were rated from 0 - 10 using a verbal numeric rating scale. Correlations were examined using Pearson's r.

Results: 30 eligible women were recruited. Women were primiparous (18/30), had received epidurals (30/30)(mean (SD) cervical dilation 3 ± 1.6 cm) with PCEA using bolus + continuous infusion (30/30) with 20/30 delivering vaginally(10 SVD, 6 low forceps/vacuum). Positive correlations were found between overall QNA and overall pain relief (r=0.674, p <0.001), parturient perceptions of control (coping r=0.755, p<0.001), ability to prevent own pain from returning (r= 0.589, p=0.001), and the ability to focus (r= 0.666, p<0.001) during labor and delivery. An inverse relationship was demonstrated between overall QNA and emotional distress due to pain (r=-0.792, p<0.001),distress experienced while trying to prevent your own pain from coming back(r=-0.615, p<0.001). Correlations between QNA and some epidural side effects (itching, heavy legs,numbness) were not demonstrated.

Discussion: Findings provide some preliminary support for the construct of QNA and hypothesized relationships between its dimensions. Failure to demonstrate a relationship between QNA and some epidural side-effects may be related to the small sample size, homogeneity of the approach to epidural analgesia or differences in expectations or experiences(i.e. receipt of a prior epidural) between women.