Can Intraoperative Text Messages Reduce Parental Anxiety of Children Undergoing Posterior Spinal Fusion Surgery for Adolescent Idiopathic Scoliosis?

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**Study Design.** A prospective, nonrandomized study.

**Objective.** To evaluate the effectiveness of periodic intraoperative text messages (SMS) in reducing parental anxiety level during posterior spinal fusion (PSF) surgery for adolescent idiopathic scoliosis (AIS) patients.

**Summary of Background Data.** No studies have reported the use of intraoperative SMS to reduce level of anxiety in parents of patients who are undergoing AIS corrective surgery.

**Methods.** Parents of 50 AIS patients were studied at two centers. Group 1 did not receive any SMS whereas those in Group 2 received periodic SMS. Parents’ anxiety were assessed using a validated Visual Analog Scale for anxiety (VAS-A) and the anxiety component of the Hospital Anxiety Depression Score (HADS). The assessment was carried out at five different periods: (P1) 6 hours before the surgery; (P2) at separation in the operation theatre; (P3) 1 hour after commencement of surgery; (P4) immediately after completion of surgery; (P5) 1 day postsurgery.

**Results.** A total of 96 parents (47 fathers, 49 mothers) were involved in this study. Both groups were comparable in terms of demographics and education level. The mean VAS for Group 1 peaked at P2 and the HADS scores peaked at P3. The anxiety level of Group 1 remained high at P2, P3, and P4. There was a steady decline in parental anxiety in Group 2 from P1 to P5. There were significantly lower mean VAS score and HADS score for both father and mother in Group 2 during P3 and P4. The mean HADS scores for parents in Group 1 at P2 and P3 were higher than 8, which indicate abnormal anxiety.

**Conclusion.** The anxiety levels of parents receiving the SMS were significantly lower than parents who did not receive any messages. Thus, intraoperative SMS is an effective intervention to decrease parental anxiety of AIS patients undergoing PSF surgery.

**Key words:** adolescent idiopathic scoliosis, intraoperative SMS, parental anxiety, posterior spinal fusion

**Level of Evidence:** 3

Spine 2016;41:E225–E230

Spinal fusion surgery to correct scoliosis is known as an invasive and extensive surgery performed on children and adolescents with scoliosis. Elective spinal surgery is associated with high levels of psychological stress and anxiety to the patient. Having a child scheduled for surgery can also cause a significant amount of stress and anxiety to parents. Parental anxiety is likely to transmit to the child and has a negative effect on child’s emotional state. Studies have identified that children of highly anxious parents are at a higher risk of developing anxiety and distress during recovery. Subsequently, this anxiety may give rise to adverse impact on the patients’ postoperative recovery and influence on his or her family dynamics.

Before surgery, it has been shown that parents prefer to have comprehensive and detailed perioperative information conveyed to them. Therefore, accurate and appropriate information given by health professionals can help to reduce unnecessary anxiety and distress among the parents. Based on previous studies, intraoperative period has been shown to be the most anxious time for family members. The waiting period during surgery was stressful for family members because of the feeling of uncertainty about the outcome of surgery. A number of studies had evaluated the effectiveness of intraoperative interventions in reducing anxiety level of the waiting family. These interventions were informational cards, face-to-face informational reports, telephone calls, and the use of digital paging devices.