Low birth weight (LBW) infants face serious health problems. Maternal psychosocial stress may predict LBW outcomes, but the relationship is not consistent. Other factors such as social support and smoking have been studied as contributors to infant birth weight. The purpose of this study was to examine the relationship between maternal perceived psychosocial stress and infant birth weight among rural pregnant smokers, and to identify whether social supports from partner and other people are protective factors of infant birth weight. This secondary analysis used data from a randomized controlled trial of a social support intervention for poor rural pregnant smokers. The findings show that although pregnant women in this study perceived higher stress level at the beginning of study, they were less likely to deliver lower birth weight offspring and social support from other people plays an important buffering role in this relationship. These results can inform the efforts of health-care providers, advanced nurse practitioners, and researchers to develop potential interventions that may help pregnant smokers reducing stress through increasing social support and may allow for better pregnancy outcomes.