The Effects of Graphic Visual and Text Warning Messages on Female Smokers and Nonsmokers’ Attitudes Toward Smoking and Purchase Intent

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This study examines the effects of graphic visual and text warning messages associated with the consequences of smoking on consumers’ attitudes toward smoking and purchase intentions. Based on responses from 1,475 participants in a 2 X 2 X 2 between-subjects experiment, results indicate that the presence of a graphic visual warning decreases smokers’ attitudes toward smoking and purchase intentions. Adding the visual warning to the text warning message presented alone decreases smokers’ purchase intentions. The persuasive effect of the visual on these attitude and intentions variables appeared more favorable than the effect related to the text warning message used.

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Introduction
Globally, tobacco is estimated to account for some 4.9 million deaths per year (World Health Organization 2006). In addition, smoking rates are increasing for women worldwide (WHO 2006). To address the global tobacco problem, a groundbreaking public health treaty, the Framework Convention on Tobacco Control (FCTC), was recently ratified by the World Health Organization (WHO). An important aspect of the FCTC is a “package labeling” provision that requires health warning information on the package that may be in the form of message text, visual (pictorial) information, or a combination of both text and visual forms (WHO 2006). Because the FCTC permits either text and/or visual warnings, research examining effects related to warning alternatives will be useful to global policymakers. The purpose of our study is to extend previous research by examining the effects of graphic visual and text warning combinations concerning the dangers of smoking while pregnant for a large sample of females.

Conceptualization and Predictions
The use of novel pictures in the graphic warning format is likely to facilitate such effects on consumer attitudes and intentions. In general, the research on the use of pictures in advertisements has shown positive effects on memory and consumer attitudes (Mitchell and Olson 1981). Affect-laden pictures have been shown to increase brand attitudes, and positively perceived pictures favorably affect attitudes toward the ad and brand (Mitchell 1986). More specifically, work on emotional appeals in persuasion and advertising (Agres, Edell, and Dubitsky 1990; Hirschman and Stern 1999) coupled with the survey results of Canadian smokers (Hammond et al. 2004) suggest that the addition of graphic visual warnings should have a noticeable impact on smoking attitudes and intentions to purchase. Although we expect the presence of a graphic visual warning to impact smoking attitudes and intentions, we are expecting interactions between the graphic visual and 1) smoking status (smoker versus nonsmoker) and 2) the presence of a text warning.

Methodology
To test the visual and warning message conditions, professionally designed, four color mock cigarette packages were created. The warning message stated “SURGEON GENERAL’S WARNING: Smoking by Pregnant Women May Result in Fetal Injury, Premature Birth, and Low Birth Weight.” The visual used was a picture of a newborn baby with health problems. The study was a 2 (visual warning) x 2 (warning statement) between-subjects design. The graphic visual warning conditions included either: (1) the picture of the baby with health problems or (2) no picture at all. The warning statement conditions included either: (1) the above statement about smoking when pregnant or (2) no warning statement at all. All other package information was invariant.

The study sample consisted of 1475 female participants who were members of a web-based research panel. The mean and median ages were approximately 39 years, slightly more than one-third of the participants were current smokers, and 80% previously had been (or currently were) pregnant.

### TABLE 1

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