

## The Effect of Risk Graphics on Risk Perception of Multi-Risk Options: The Case of Childhood Vaccines

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Risk graphics (e.g., pictographs) have been shown to affect risk perception in numerous domains. The present research investigates how the inclusion of risk graphics affects parents' risk perception of childhood vaccines. Vaccine risk perception typically involves the consideration of multiple risks in the form of possible side effects resulting from a given vaccine. Research on risk graphics has been limited to assessing their effect on risk perception of single- rather than multi-risk options. The present research addresses this gap in the literature by assessing the effect of risk graphics on parents perceived risk of vaccines that involve multiple risks (i.e., side effects). Participants were randomly assigned to a condition in a 2 (pictograph: present vs. absent) by 2 (risk option: single vs. multiple) by 2 (numeric format: 1-in-X vs. N-in-XN) full factorial design. All participants read a condition-specific vaccine information sheet (VIS) and then indicated their intent to vaccinate and their vaccine risk perception. In the multi-risk option condition, but not in the single-risk option condition, intent to vaccinate was significantly higher in the presence ( $M = 7.73$ ,  $SD = 1.78$ ) vs. absence ( $M = 7.17$ ,  $SD = 2.44$ ) of pictographs ( $F(1, 286) = 4.89$ ,  $p = .028$ ,  $r = .13$ ). In the multi-risk option condition, but not in the single risk option condition, risk perception was significantly lower in the presence ( $M = 22.44$ ,  $SD = 23.24$ ) vs. absence ( $M = 31.00$ ,  $SD = 25.83$ ) of pictographs ( $F(1, 286) = 8.74$ ,  $p = .003$ ,  $r = .17$ ). The results suggest that pictographs can increase intent to vaccinate and lower vaccine risk perception when parents are evaluating vaccines having multiple side-effects. More generally, the results suggest that risk graphics help to lessen risk perception of multi-risk, but not single-risk, options. These results should be of interest to policy makers and health professionals concerned with communicating health risks to the public.

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