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Focus on Babies: A Note on Parental Attitudes and Preferences for Organic Babyfood

Kelly B. Maguire, Nicole Owens, and Nathalie Simon

The motivation behind purchases of organic foods is not necessarily straightforward. Some individuals may purchase organic foods for health reasons, while others may do so because of concern for the environment. The issue is even more complicated when thinking about babyfood. Because of children's developing systems, parents and other care givers could be more concerned about the effects of pesticides in conventional foods. However, this issue is relatively unexplored. This study reports results from focus groups with parents of small children regarding their attitudes and preferences, including risk perceptions, toward organic and conventional babyfood.

Key Words: children's health, organic foods, risk perceptions

Consumers may purchase organic foods for a multitude of reasons. Avoiding health risks associated with exposure to pesticide residues is one of several potential joint benefits obtained through the purchase of organic products. Consumers may also purchase these products out of concern for the environment, concern for the health of farm workers who handle pesticides, or because they perceive the taste of organic products to be better than conventionally grown products. A growing number of studies confirm the presence of sometimes considerable price premiums for organic products, including baby food (e.g., Estes and Smith, 1996; Thompson and Kidwell, 1998; Thompson and Glaser, 2001; Nimon and Beghin, 1999; Glaser and Thompson, 2000; Maguire, Owens, and Simon, 2004). However, few analyses have explicitly examined the motivation behind these purchases.

Some early studies have shown that health concerns are a dominant factor driving organic purchases. Through a series of focus groups, Hammitt (1990) found that purchasers of organic products believe them to be substantially less hazardous than conventionally grown products. Based on a survey of Boston-area food shoppers,

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purchasers of organic produce were found to associate a large risk reduction with switching from conventionally grown to organically grown products (Williams and Hammitt, 2000, 2001). Similarly, in a survey of California shoppers, Jolly (1991) determined that purchasers of organic products tend to be more concerned about pesticide residues than non-purchasers.¹

It is not clear, however, whether these collective findings on risk perceptions extend easily to babyfood products. Several of the large manufacturers of conventional babyfoods advertise strict guidelines concerning the source of agricultural inputs and the manner in which they are grown (Beechnut, 2004; Gerber, 2004; Heinz, 2004). In some cases, manufacturers explicitly assert that their guidelines are stricter than those imposed by government standards. In contrast, the Environmental Working Group (1995) found half of babyfood samples contained detectible levels of pesticides, though their sample size was limited. Whether consumers are aware of the assertions regarding babyfood manufacturing guidelines, or more importantly, whether consumers perceive that these measures translate into reductions in exposures to pesticides for their children to a negligible level is an open question.

Assumptions regarding risk perceptions are important to consider when assessing health benefits associated with reduced exposure to contaminants. This often involves the use of valuation estimates derived from observed risk-dollar tradeoffs. In applying these estimates, it is generally assumed that individuals know the true magnitude of the risk reduction they face (Jenkins, Owens, and Wiggins, 2001; Moore and Viscusi, 1990). However, if individuals consistently overestimate small and underestimate large risks (Lichtenstein et al., 1978; Viscusi, Hakes, and Carlin, 1997), then the accuracy of these assumptions in assessing benefits may be called into question. These issues are even more complex when considering risks to children since children do not make their own health and safety decisions, but rely on a third party, parents or care givers, to make the relevant risk-dollar tradeoffs for them (Dockins et al., 2002). With the continuing increase in the number of studies focusing on valuing reductions in risks to children, it is important to understand parental perceptions of children's risks.

Although risks to children are disparate, all children face some food-related risks. Because jarred babyfoods are available in organic and conventional varieties, attitudes toward this broad product class may provide some insight regarding parental perceptions of risks to their children posed by exposure to pesticide residues. Concern with pesticides usually stems from their potential cancer-causing properties. While the U.S. Environmental Protection Agency (EPA) certifies the use of pesticides in the United States, they are not completely without risk. Some individuals may minimize consumption of affected products in order to avoid potentially

¹ Estes and Smith (1996) assert that purchasers of organic apples in their study were buying additional food safety by reducing exposures to pesticide residues since the organic and conventional varieties offered for sale were similar in appearance and quality. However, they did not explicitly explore other potential motivations (e.g., environmental concerns, differences in taste, etc.) for organic food purchases.

harmful substances. These concerns may be magnified when considering children because of their developing systems and high food-to-body weight ratio.

Using results from focus group discussions with parents of young children, we explore attitudes toward pesticide residues and children based on babyfood consumption patterns. Our results indicate that parents are concerned about the risk posed by pesticides in babyfood, and for those who choose to purchase organic foods, the health benefits are a primary motivation. In addition, these parents' perceptions of the decline in risk due to consuming organic babyfood are remarkably similar to published estimates based on scientific data. However, such risks are generally less of a concern to parents of young children as compared to more immediate injuries.

Background Data

Between August 2001 and February 2002, we conducted ten focus groups in five cities: San Jose, CA; Baltimore, MD; Philadelphia, PA; Richmond, VA; and Washington, DC. Two focus groups were hosted in each city, with each group comprised of six to nine participants. While the script used to guide the discussions differed across all ten focus groups, this paper highlights a small set of questions and issues common across all groups.

For each city, we contracted with a local marketing research firm to recruit participants and arrange logistical details for the focus groups. We varied the screener questions used for recruiting across cities because different needs were identified for each discussion. Participants were recruited who had at least one child under the age of five.² Since jarred babyfood is typically fed during the first 12 months of life, the cap on age was meant to ensure recruitment of individuals who could recall babyfood purchase decisions. We also recruited participants who were responsible for household grocery purchase decisions, as these individuals were most likely to think about the types of food to buy and the various risk components. Finally, we tried to recruit a few participants per group who had purchased organic baby food. Because our research is exploratory, it was not necessary to select a random sample of participants.

Common questions across focus groups consisted of queries about organic products and the food supply in general, such as how participants defined the term "organic" and if organic foods were healthier than conventional foods. Much of the discussions' contents, however, were focused on babyfoods, including whether participants fed their children jarred babyfood, the brands they used, how much jarred food their children were fed, and whether or not they fed their children organic foods. We also included some discussion of other risks their children face and asked participants how they felt these risks compared to pesticide-related risks.

² Although we initially recruited individuals with at least one child under five, we later changed the age to two in order to recruit participants who more vividly remembered their babyfood purchasing decisions and for whom a wider variety of organic food options were available.

Finally, participants were asked to complete a risk ladder where they ranked the life-time mortality risk from eating conventional versus organic babyfood and produce. The results are discussed in detail below.

A total of 87 individuals participated in the ten focus groups. Approximately 54% of the participants were female, the average age was 34 years, and 52% reported having a four-year college degree. There was some racial diversity across the participants: 71% were Caucasian, and the remaining 39% were African American, Hispanic, or Asian or Pacific Islander. Participants lived in households with approximately two children, and about half indicated they had purchased organic foods at some point.

Discussion of Issues

Participants were guided through a discussion of several major issues surrounding food risks in general and babyfood in particular. Participants were asked their opinions about the meaning of an organic label, health risks from the food supply and babyfood, and, for those who chose organic babyfood, we explored the reasons behind this decision.

Participants were able to provide reasonable descriptions of organic foods. They used phrases such as “pesticide-free,” “chemical-free,” “all natural,” “antibiotic-free,” “additive-free,” “healthier,” “more nutrients,” and “more expensive” to describe organic foods. They also expressed skepticism as to the extent to which organic foods were regulated or monitored.³ Participants were unsure what exactly was implied by the labels (e.g., did “organic” mean 100% pesticide-free or just fewer pesticides?), although some did note they thought the labeling referred more to the farming methods than to the actual content of the food. A few participants believed that by peeling or washing conventional produce, most of the pesticides would be removed.

Before proceeding to the discussion of organic foods, participants were queried about their thoughts regarding risks in the food supply, particularly as those risks relate to health. Participants felt that the food supply in the United States was generally very safe and that many of the risks came from handling and preparation as opposed to farming practices. Several participants did mention concerns about the depletion of nutrients in the soil. Reasons given for why they felt the food supply was unsafe included the application of pesticides, unsafe handling or packaging (e.g., salmonella risks), and uncertainty regarding exposures from imported foods. Despite these concerns, most participants believed that they had little control over these risks and how to avoid them. Participants admitted to not spending much time thinking about these types of risks.

³ New U.S. Department of Agriculture (USDA) guidelines went into effect in October 2002, requiring that producers and handlers be certified by a USDA-accredited agent to sell, label, or represent their products as organic (*Federal Register*, 2000). Therefore, at the time we conducted the focus groups these standards were not in effect.

Approximately 83% of the participants fed their children jarred babyfood at some point. Most used jarred babyfood as the primary means of feeding their children solid foods during the first year of life. Participants perceived jarred babyfood to be safer than the general food supply for a variety of reasons, including the use of special processing techniques to kill bacteria, reduced preservatives, and greater monitoring. For those who chose not to use jarred babyfood, a few reported doing so to avoid chemicals, preservatives, and fillers, to have more control over the content of their child's diet, or because of cost and convenience.

Participants were divided as to whether or not the consumption of conventionally produced jarred foods posed a risk to babies. Those who felt the risks were negligible stated that babies do not eat jarred food long enough to result in significant risks, while those who thought the risks were higher were more concerned about the food-to-body weight ratio in babies and the effects of pesticides on a child's fragile, developing digestive system.

For those participants who chose organic babyfood for their child, many did so on an experimental basis. For example, they thought the flavors were interesting, they were exploring other options for their baby, or they had a coupon to try a particular brand. However, most participants who were experimenting with organic babyfood felt that the pesticide-free farming methods were also an important part of their purchasing decision. For some, the purchase decision was in response to health-related issues, e.g., allergies or reflux, and an attempt to control these conditions through diet. For participants who chose organic babyfood deliberately or exclusively, their choice was motivated by the health risk reductions.

In summary, the issues surrounding food safety and the choices between organic and conventional babyfood were not perceived as immediate and high-priority concerns by these parents/participants. With regard to the general food supply, participants perceived organic foods to be safer, but they were uncertain about the true effects and therefore often chose to purchase less expensive, conventional varieties. As for babyfood, parents who purchased organic foods cited health as one of their primary reasons for doing so. However, parents listed traumatic injuries as being their most important risk concern, health or otherwise. Specifically, participants were concerned about falls, head injuries, kidnapping, and the potential for gun-related injuries. While some participants stated that they felt they had greater control over the more immediate risks, making these a primary concern, others reported that long-term health risks were of more importance.

Risk Analysis

In addition to exploring attitudes and preferences toward babyfood, participants were also queried about their risk beliefs. In order to gather the risk information, we asked participants to complete a risk ladder.⁴ The purpose of risk ladders, in general,

⁴ Two observations are excluded from our analysis because the participants did not appear to understand the risk ladder exercise and provided unreasonable results (i.e., negative risk reductions). Hence, the remaining discussion is based on responses from 85 participants.

is to ascertain where individuals believe a particular risk lies using a continuum of other risks as reference points. We used a modified risk ladder on which the Williams and Hammitt (2001) study is based.⁵ This ladder shows the risk of dying from a variety of accidents and illnesses, such as motor vehicle accidents, drowning, and heart disease. The ladder is divided into three parts, corresponding to high (> 50 deaths per million people), medium (> 3 to 50 deaths per million people), and low (# 2 deaths per million people) risks. Within each section there are up to nine examples of risks. For example, there are 0.4 deaths from floods per million people (low risk), whereas 590 people per million die from lung cancer (high risk). The purpose of the examples is to provide participants with a relative ranking of various risks with which they may be familiar.

Participants were asked to place a designated mark (either “*C” or “*O”) on the risk ladder corresponding to their relative ranking of the following two risks:

- (a) *Suppose you fed your child conventional jarred babyfood exclusively. Estimate the risk of your child eventually dying from cancer or other diseases caused by pesticide residues as a result of eating the conventional jarred babyfood.*

- (b) *Suppose instead that you fed your child organic jarred babyfood exclusively. Estimate the risk of your child eventually dying from cancer or other diseases caused by pesticide residues as a result of eating the organic jarred babyfood.*

The responses to these questions provide an indication of how participants believe these risks compare to other risks people face. These relative rankings were then translated into numerical risk values for our analysis.⁶ Our results indicate that the perceived risk of eventually dying from cancer or other diseases from consuming conventional foods in the first year of life is on average four deaths per million. The similar risk from eating organic foods is estimated by participants to be 0.4 deaths per million on average. Participants clearly felt there was some risk associated with organic foods, much of it from the uncertainty regarding standards and how they are enforced. The median risk reduction from consuming organic babyfood is two deaths per million.

⁵ Different versions of the risk ladder were explored in our early focus groups, including a risk ladder with a log-linear scale and one in which the denominator varied across the examples of risks on the ladder. It was clear from the first few focus groups that the linear version similar to the one used by Williams and Hammitt (2001) was preferred, so we discontinued testing the ladder in later focus groups.

⁶ For example, if a participant marked the risk of dying from pesticide residues between the risk of being hit by an airplane (0.06 deaths per million) and the risk of dying in a hurricane (0.04 deaths per million), then we recorded his or her perceived risk of dying from cancer due to pesticide residues as 0.05 deaths per million, or the average of the two points bounding their estimate. Often the participant's response was clearly marked as equivalent to an example on the risk ladder; for others, we estimated the risk values based on relative rankings and where participants made their marks.

We also examine how results vary according to purchasers and non-purchasers of organic babyfood. There were few exclusive purchasers in our sample; most of the purchasers also used conventional brands. The median risk estimate for conventional babyfood among the 58% of participants who purchased organic babyfood at some point in time is one death per million, and for organic babyfood the median value is 0.2 deaths per million. Among the participants who have never purchased organic babyfood, the median risk estimate for conventional babyfood is eight deaths per million, and for organic babyfood it is 0.4 deaths per million. The purchasers of organic babyfood rate babyfood in general as less risky compared to the non-purchasers.

As for the *risk reduction* conferred by organic babyfood, *for purchasers* the median risk reduction is 1 death per million, whereas *for non-purchasers* the median risk reduction is four deaths per million. This finding is counter-intuitive in that we expect the purchasers to have a higher estimate of the risk reduction—i.e., those who purchase the organic babyfood do so at least partly because of risk-reduction features. Indeed, the qualitative responses support this hypothesis. However, it could be the case that the purchasers also understand the risks to be small, albeit present. Because our sample is small and not randomly drawn, it is unwise to generalize these results to the population. Nonetheless, they do provide insights into how individuals think about these risks.

Findings reveal little difference in the risk estimates or risk reduction according to various demographic characteristics of our sample. Compared to the other participants in the sample, those who are more highly educated, younger, and male all estimate lower risk reduction from consuming jarred babyfood. However, these differences are only significant by educational status.

Conclusions

In estimating the value of health risk reductions, how individuals perceive those reductions is important. We know that individuals can both over- and underestimate risks depending on the media coverage, knowledge, and awareness of the risks (Lichtenstein et al., 1978). The extent to which measured scientific and perceived risks comport is complicated for children's risks. Decisions regarding risks to children are made by a third party—namely, parents or other care givers—and it is not clear how these third parties perceive risks for their children.

Our focus groups with parents of young children yield estimates of perceived risks that are surprisingly consistent with published measures based on scientific data. For example, one published estimate reports that the reduction in cancer risks from pesticide exposure during the first year of life is 1.98 cancers per million (Kuchler, Ralston, and Tomerlin, 2000). For our entire sample of purchasers and non-purchasers, results indicate that the median risk reduction estimate is two deaths per million, which is remarkably similar to the published estimate based on scientific data.

Health is just one of many concerns parents address when making decisions regarding their children. Based on our findings, traumatic injuries and other more immediate risks are often of more pressing concern to parents of young children. Nonetheless, parents do express concern about food choices for their children and associated risks, and make purchases reflecting those concerns.

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