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Findings from focus group testing of mercury-in-fish messages

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Background

Eight focus groups were conducted: four in Calverton, Maryland (October 11-12) and four in Denver, Colorado (October 16-17). At each site, the four groups consisted of one group of pregnant females, one group of mixed gender with at least a college degree, one group of mixed gender with less than a college degree, and one group of mixed gender with no education restriction.

The materials tested in the focus groups were taken from information pieces prepared by the National Marine Fisheries Service (NMFS), the Environmental Protection Agency (EPA), the Food and Drug Administration (FDA) and the State of Maine. The introductions from these pieces that explained the hazards of mercury in fish and the different versions of fish consumption advice that advised pregnant women what to do to reduce the risk were presented to the groups for discussion.

Results

Prior Knowledge

None of the groups showed much interest or concern about mercury as a hazard in fish before seeing the information pieces. Respondents accepted that mercury was an environmental contaminant and a toxic substance, but they clearly knew less about mercury than about lead or about pesticides, for example. Respondents in Maryland mentioned dental fillings and thermometers as sources of mercury exposure before mentioning fish. Respondents more readily associated fish consumption with mercury exposure when the question was, "What are possible contamination problems with fish?" than when it was, "What are possible sources of mercury exposure?" Talking about problems with fish triggered vague memories in a few respondents of hearing about mercury as a contaminant problem in fish, but no one seemed to think of mercury in fish as much of a current problem. Respondents in Colorado were more aware of the association between mercury and fish than those in Maryland, apparently because they knew of examples of local mercury pollution (e.g., gold mining) and some were familiar with recreational fishing advisories about certain bodies of water with mercury pollution. There was little or no awareness in any group of a hazard due to low level mercury exposure from fish consumption that was not due to a specific pollution problem.

Conclusions

1. Concern about mercury in fish is low.
2. Most likely way to categorize new knowledge is problems with fish rather than sources of mercury.
3. Mercury in fish is seen mostly as a pollution problem.

Reaction to Statements about the Hazards of Mercury in Fish

Everyone considered statements about the dangers of mercury in fish for pregnant women and their unborn babies to be new and important information that everyone, particularly pregnant women, needed to know before they decided how much fish to eat in their diet. There was virtually no skepticism expressed about

there being such a hazard in fish. It seemed entirely plausible to most respondents that pregnant women and unborn babies would be particularly sensitive to a toxic substance such as mercury. It seemed quite plausible that an environmental pollutant such as mercury could contaminate fish. The immediate response to the hazard statements about mercury-in-fish for many respondents was to ask for more information about which kinds of fish contained mercury and what kinds of effects should they look for. Virtually everyone felt they needed to know which kinds of fish contained mercury so they could avoid those fish. Hardly anyone dismissed the hazard as trivial or unimportant. Nothing in the materials that were tested moderated participants' impressions that mercury in fish was a significant hazard for everyone.

The attempt to narrow the perception of the at-risk group to pregnant women/women of childbearing age/women who might get pregnant within 6 months rather than the general public failed utterly. Most respondents easily accepted that pregnant women and unborn babies would be particularly sensitive to a mercury-in-fish hazard, but they concluded from this that everyone would be at risk to some extent. The group discussions of who would be at risk were filled with statements such as, "better safe than sorry," "if its bad for pregnant women, it can't be good for me," "the more you get, the worse it is." Any prior knowledge of mercury toxicity and any suggestion that mercury accumulated in the body or persisted in the body for a long time tended to reinforce the view that mercury levels in fish were a concern for everybody. The underlying common sense hazard model suggested here seems particularly robust given its widespread acceptance by participants and its basic correspondence with scientific facts. Nothing in the materials that were tested contested in any significant sense this underlying hazard model.

Reactions to Advice about Fish Consumption

Participants were eager for information about mercury levels in fish. They were so eager for comparative safety information about different kinds of fish that they tended to interpret quantitative consumption advice, e.g., pregnant women should eat no more than 2-3 servings a week of a certain kind of fish, as telling them which fish species were low or high in mercury and therefore were safe to eat or not. Even when consumption advice was specifically directed toward pregnant women, it was usually seen to indicate a qualitative distinction between fish that were safe to eat or not that was relevant for everyone.

Because quantitative consumption advice was seen as mainly identifying good/bad types of fish, participants did not see much wisdom or relevance in trying to apply the quantitative recommendations to their personal diet. Participants thought it would be easier to eliminate problematic fish from their diet than to regulate the amounts eaten. The idea of moderation did not come through in advice about how much fish could be eaten safely. In the FDA piece, for example, advice to limit consumption of swordfish or shark to once a month or less was typically interpreted as advice to avoid swordfish or shark entirely because these were the fish with the highest mercury levels.

Although participants were mainly interested in distinguishing the categories of fish that were safe or unsafe to eat, they did not always find the quantitative consumption advice that was provided in the various information pieces did a good job in helping them make such distinctions. Translating quantitative consumption advice into qualitative categories can be treacherous and participants sometimes had different interpretations of which fish were safe or not. In the EPA piece, for example, advice to limit consumption of certain kinds of fish to 2-3 times a week was usually interpreted as meaning you could eat these fish as much as you wanted, because these were the fish with the lowest mercury levels. But some participants, particularly those who were heavy fish eaters, saw this consumption level as indicating there was a problem with eating this kind of fish. In general, participants had a hard time following the practical implications of the quantitative consumption advice, in part because the implications depended on how much fish they were currently eating, and in part because the advice did not suggest any organizing principles to help them distinguish between fish that were safe or not.

For most people, fish consumption is limited to a few species eaten infrequently. The practical relevance of quantitative advice is questionable when you don't eat that kind of fish or when you eat it in amounts that are far below the recommended amount. It is further removed from practical relevance, when you consider the difficulty of monitoring your intake of fish over long time periods, e.g., weeks or months, keeping track of different kinds of fish that you eat, and the uncertainties introduced by serving size considerations.

Given all this, it is not surprising that many respondents interpreted quantitative advice as describing qualitatively different kinds of fish, but did not take it seriously as quantitative dietary advice. Whether quantitative consumption advice needs to be included at all in a consumer advisory about the hazards of mercury in fish is a question, but it is fairly clear from these results that quantitative advice should not be the primary emphasis of such an advisory.

Participants had limited ability to distinguish intermediate categories of fish that fell between those that were safe or unsafe to eat. In the FDA advice piece, for example, tuna was given an intermediate quantitative recommendation, but many participants interpreted this advice as putting tuna in an unsafe to eat category. In the EPA advice piece, an intermediate category of fish was described with an intermediate level of recommended consumption, but many participants failed to notice this class at all, and when it was specifically pointed out to them, they often interpreted the recommendation as being similar to that for the low mercury fish. Despite the apparent precision of quantitative consumption recommendations to make distinctions between different categories of fish, the public's ability to make discriminations is much more limited. To be appropriately understood, quantitative recommendations need to be supplemented by qualitative descriptors (e.g., high or low), or differences between categories of fish need to be explained in other terms entirely.

The importance of clearly defining qualitative categories of fish should not be underestimated. Faced with uncertainty about how fish should be classified, participants were quite likely to resolve uncertainty in favor of avoiding fish on the grounds of "better safe than sorry." In fact, participants wanted positive assurance that fish were safe. They found it unsatisfactory to describe categories of fish with open-ended definitions such as "for all other fish and seafood not mentioned, or "all other types of fish." They preferred more specificity, lists or such, or perhaps some explanation of what common characteristics defined the category.

Participants wanted information on fish that were safe to eat as well as information of fish that were not safe to eat. One thing that was appealing about the EPA advice was that it provided a reasonably extensive list of fish that were safe. One thing that was disliked about the FDA advice was that it dealt with the "safe" fish in such a cursory way. Participants were also dissatisfied with the menu approach taken by the State of Maine and by the NMFS piece because they seemed to split up the universe of fish in ways that were hard to explain or to understand (e.g., fresh water/ocean fish/American favorites/farm raised).

Conclusions about Tested Approaches

None of the approaches tested can be considered satisfactory as a way to introduce the hazard of mercury in fish to pregnant women or to the public or to help at-risk groups decide what to do to reduce their risk. As they stand, all the approaches, which admittedly do not vary much between themselves, suffer from two kinds of "spillover." The first, and probably the more important type of spillover, is the failure to narrow the perception of the at-risk group to pregnant women who eat a lot of fish. The common view after hearing any of the tested approaches is to conclude that the general public must be at risk for consuming fish containing mercury. The second type of spillover that needs to be addressed is the tendency to qualitatively characterize different fish species as safe or not without close regard to quantitative consumption advice. If people are going to make qualitative distinctions between fish species, there needs to be a clearer demarcation between categories than stated consumption limits to avoid stigmatizing fish species inappropriately.