Communication Network Analysis as a Tool for Participatory Intervention to Reduce Mercury Exposure – Brazilian Amazon

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A social network study was conducted within the context of a participatory intervention in a Brazilian Amazonian village. This presentation illustrates the importance of social networks for individual behaviour changes and for the long-term success of participatory intervention processes. Inhabitants of Brasilia Legal, a small village located on the left shore of the Tapajós River in the Brazilian Amazon, are exposed to methyl mercury through fish consumption. A participatory intervention based on dietary changes aimed at reducing mercury exposure from fish consumption was initiated in 1995. Comparison of diet and exposure of the same persons in 1995 and in 2000 showed that although they continued to eat the same quantity of fish, they had preferentially included less contaminated herbivorous fish in their diet. This resulted in a decrease in hair mercury levels of approximately 35%. In 2001, we conducted a network analysis in order to determine the influence of interpersonal communication on individual behavioural changes in fish consumption. Every household was visited and socio-demographic data, information about fish consumption and sociometric data on the communication network related to diet, health and mercury were collected for 85 women and 67 men. We were able to identify both male and female opinion leaders in the communication network. However, opinion leadership was associated with change in fish consumption only for women. Furthermore, results illustrate the influence of female opinion leaders at the community level.
and female spouses at the household level in promoting healthy changes in dietary habits to reduce mercury exposure. Preferential consumption of less-contaminated fish was associated with the presence of female communication partner – but not male – in the personal networks of both men and women. At the household level, men who considered their wife as a discussion partner were much more likely to change their behaviour than those who did not. These results convinced us to incorporate social networks analysis in our methodological approach not only as an after-the-fact analytical method but also as a way of developing a better understanding of social networks, which in turn should facilitate the promotion of environmental awareness and actions.

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