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PROMOTING COMMUNITY GARDENING TO LOW-INCOME URBAN PARTICIPANTS IN THE WOMEN, INFANTS AND CHILDREN PROGRAMME (WIC) IN NEW MEXICO

This study explores the effectiveness of methods used by nutrition educators in promoting the Women, Infants and Children (WIC) community garden project in Albuquerque, New Mexico, USA. A survey of 257 clients from five clinics found that less than 30% of clients have been exposed to the project and caseload was unrelated to the methods used to promote the project. However, clients exposed to any method of promotion were more likely to garden than those who were not exposed. Most importantly, clients reported eating more vegetables after being exposed to the project.

Keywords caseload; community garden; food insecurity; nutrition education
WIC

Los métodos utilizados por educadores de nutrición a promover el proyecto de jardín comunitario Mujeres, Infantes y Niños (WIC) en Albuquerque, New México, E.E.U.U. están examinados por este estudio. Una encuesta de 257 clientes en cinco clínicos indicó que menos que 30% de ellos conocieron el proyecto y también que demanda en los clínicos no se relacionó a los métodos de promoción utilizados. Sin embargo los clientes expuestos a cualquier método de promoción mostraron una probabilidad más alta de establecer un jardín que mostraron ellos no expuestos. Además y de alta importancia los clientes expuestos al proyecto reportaron el consumo de más vegetales.

Palabras clave caseload; jardín de la comunidad; inseguridad del alimento; educación de nutrición; WIC

Many low-income individuals are at risk of poor nutrition and health outcomes due to inadequate diets during pregnancy, infancy and early childhood. In the USA, the Women, Infants and Children (WIC) programme is a federal government programme that provides supplemental food and nutrition education to low-income (below 185% of the federal poverty level) pregnant and breastfeeding women and their infants and children under five years of age.

The WIC programme in Albuquerque, New Mexico, viewed gardening at home or at community gardens as one means of promoting vegetable consumption among low-income women and their children, and thus began the WIC community garden project in 1999. As part of the programme, all nutrition educators were required to

promote gardening during their nutrition classes. They were trained on various means of promoting gardening during staff meetings. They were given some flexibility in promoting the programme based on individual office constraints; all were required at minimum to discuss the programme with clients, but had the additional option of offering seeds to clients, planting seedlings in class or organizing field trips to the gardens. Because all WIC clients are mandated to attend one hour of nutrition education class per month, the project's intent was that 100% of clients would be exposed to community gardening opportunities.

This paper evaluates the WIC community gardening programme in Albuquerque, seeking to determine if caseload affected the methods nutrition educators used to promote the WIC community garden project, and if the method chosen was related to participation of WIC clients in the programme. It was hypothesized that (i) nutrition educators with higher caseloads would promote the project using less hands-on, time-intensive approaches, and (ii) that clients exposed to less hands-on approaches would have lower rates of participation than clients exposed to more hands-on approaches.

Method

Data regarding the type of teaching methods used and participation among clients was gathered using written questionnaires in both English and Spanish. Six clinics, each within five miles of a community garden, were approached for the study. Of these, five chose to participate. One hundred client surveys were given to each clinic to be administered by nutrition educators, and 257 surveys were administered to those clients whose appointments were scheduled closest to the date the clinic received the surveys. While no clients declined to complete the surveys, nutrition educators did not administer all 100 surveys due to time constraints. All clients who completed the surveys received WIC benefits during the summer of 2001, and thus should have been exposed to the WIC community garden project during their monthly nutrition class.

Distributions and odds ratios were calculated from data gathered by the surveys using JMP and EpiInfo statistical analysis software. The demographic characteristics of the sample were similar to those of the overall population of WIC clients in New Mexico, though the sample was more likely to speak a language other than English at home (27% of sample vs. 18.7% of population).

Findings

When asked if their nutrition educator had ever talked about gardening during WIC classes, only 29.4% of clients reported yes, 44% indicated no and 11.7% were not sure. Of those who reported yes, 58.5% mentioned talking about community gardens, 44.6% mentioned talking about gardening at home and 15.4% mentioned talking about gardening in containers. In addition, 64.6% were offered seeds to take home and 16.9% planted seeds during their WIC class. Only six respondents planted the seeds WIC had given them to take home; most (28 responses) planted their own seeds. Few clients (23 or 13.7%) had visited a community garden. Only five of those who visited the garden planted, though six clients harvested vegetables.

Clients offered many reasons why they did not visit a community garden. The primary reason was lack of knowledge about community gardens in general (62 responses). Other responses included: lack of knowledge of the location of a garden (21 responses), lack of time (16 responses) and lack of transportation (3 responses). Nineteen clients mentioned reasons they did visit a community garden. Six clients went to learn how plants grow, five respondents wanted to show their children, three respondents were invited by a friend or family member, three respondents went with a class field trip, one respondent for sheer enjoyment and one as a food source.

The results indicate that, in spite of being required to promote the garden by their supervisors, the nutrition educators at clinics did not promote the WIC community garden project frequently or did not promote it in a memorable manner.

Caseload and methods used

During the summer of 2001 the average caseload at Clinic A was about 241 clients per nutrition educator per month. The average caseload per educator per month was 386 at Clinic B, 459 at Clinic C, 293 at Clinic D and 456 at Clinic E. Table 1 shows methods used to promote the community gardens in different clinics. Clients reported the least promotion at Clinic E (0.40 times as often as other clinics, $p = 0.22$) and at Clinic D (0.28 times as often as other clinics, $p = 0.07$). Clients reported the most promotion at Clinic B (1.28 times as often as other clinics, $p = 0.4$), followed by Clinic A (1.21 times as often as other clinics, $p = 0.50$) and Clinic C (1.03 times as often as other clinics, $p = 0.93$).

Merely discussing community gardens, gardening at home and container gardening was considered a less hands-on technique for promoting the project. At Clinic C and Clinic E, clients reported one of these methods 0.68 ($p = 0.36$) times and 0.54 ($p = 0.33$) times as often as other clinics, respectively. At Clinic A and Clinic B, the figures were 1.51 ($p = 0.17$) times and 1.27 ($p = 0.43$) times as often as other clinics, respectively. At Clinic D, clients reported one of these methods 0.19 ($p = 0.05$) times as often as other clinics.

Offering seeds in class was considered to be more hands-on than talking about gardening, but less hands-on than planting seeds in class. Clients at Clinic A and Clinic D were offered seeds 0.59 ($p = 0.12$) times and 0.49 ($p = 0.27$) times as often as at

TABLE 1 Methods used to promote the community garden in different clinics

<i>clinic</i>	<i>average clients per educator</i>	<i>odds ratio: any method</i>	<i>odds ratio: talked about gardening</i>	<i>odds ratio: gave seeds</i>	<i>odds ratio: planted seeds</i>
C	459.25	1.03	0.68	1.11	0.42
E	456.30	0.40	0.54	1.81	1.62
B	385.77	1.28	1.27	1.58	1.47
D	292.50	0.28*	0.19**	0.49	0.00
A	240.88	1.21	1.51	0.59	1.25

*Indicates statistical significance at the 90% confidence interval; **indicates statistical significance at the 95% confidence interval.

other clinics, respectively; offering occurred 1.81 ($p = 0.32$) times as often at Clinic E, 1.58 ($p = 0.16$) times as often at Clinic B and 1.11 ($p = 0.80$) times as often at Clinic C.

Planting seeds in class was considered the most hands-on method of promoting the project. At Clinic D, none of the clients reported planting seeds in class. At Clinic B and Clinic A, clients planted seeds in class 1.47 ($p = 0.35$) times and 1.25 ($p = 0.46$) times as often as other clinics, respectively. At Clinic C and Clinic E, seed planting took place 0.42 ($p = 0.34$) times and 1.62 ($p = 0.49$) times as often as other clinics, respectively.

These findings indicate that caseload is not clearly related to the types of methods nutrition educators used. While the highest caseloads were at Clinic C and Clinic E, only results at Clinic C support the hypothesis that nutrition educators with high caseloads will choose less hands-on methods. In contrast, Clinic E had the highest use of hands-on methods in spite of its high caseload. Meanwhile, Clinic D promoted the project least in spite of its comparatively low caseload. Additionally, the majority of the odds ratios related to caseload were not statistically significant. While caseload can affect quality of care and service to clients in social services (Berger, Rolon, Sachs, & Wilson, 1989; Mills & Ivery, 1991) and in education (Algozzine, Hendrickson, Gable, & White, 1993; Omstead, 1995), the study suggests that factors other than caseload influence what methods nutrition educators use to promote gardening.

Methods used and client participation

Table 2 shows that clients who discussed gardening during WIC classes were 2.63 ($p = 0.004$) times more likely to garden than those who did not. Those who discussed community gardens were 2.97 ($p = 0.01$) times more likely to visit a community garden and 2.03 ($p = 0.07$) times more likely to garden than those who did not. Those who discussed home gardening were 2.77 ($p = 0.01$) times more likely to garden at home and 3.00 ($p = 0.006$) times more likely to garden either at home or at a community garden than those who did not. Those who discussed container gardening were 8.69 ($p = 0.04$) times more likely to garden in containers and 2.34

TABLE 2 Likelihood of a behaviour in comparison to those clients not exposed to the same methods

<i>method used</i>	<i>gardening</i>	<i>visiting a</i>	<i>gardening</i>	<i>gardening in</i>	<i>increasing</i>
		<i>community</i>	<i>at home</i>	<i>containers</i>	<i>vegetable</i>
		<i>garden</i>			<i>intake</i>
Discussed gardening	2.63***				
Discussed community garden	2.03*	2.97***			0.92
Discussed gardening at home	3.00***		2.77***		1.73
Discussed container gardening	2.34			8.69**	1.09
Offered seeds	5.05***				1.28
Planted seeds in class	2.64***				1.29

*Indicates statistical significance at the 90% confidence interval; **indicates statistical significance at the 95% confidence interval; ***indicates statistical significance at the 99% confidence interval.

($p = 0.15$) times more likely to garden either at home or in a community garden than those who did not. Those who were offered seeds were 5.05 ($p = 0.003$) times more likely to garden than those who were not offered seeds. Those who planted seeds in class were 2.64 ($p = 0.01$) times more likely to garden than those who did not.

Clients who discussed community gardening in class were 0.92 ($p = 0.85$) times more likely to eat more vegetables than those who did not. Clients who discussed home gardening were 1.73 ($p = 0.24$) times more likely to eat more vegetables than those who did not. Those who discussed container gardening were 1.09 ($p = 0.90$) times more likely to eat more vegetables than those who did not. Clients who were offered seeds at their WIC clinic were 1.28 ($p = 0.60$) times more likely to eat more vegetables than those who were not offered seeds. Those who planted seeds during their WIC classes were 1.29 ($p = 0.73$) times as likely to eat more vegetables than those who did not.

The findings revealed that when clients were exposed to any method of promotion of gardening, they were more likely to garden than those who were not exposed. The effect of all methods was statistically significant, with the exception of the effect of discussing container gardening on overall gardening. However, while in most cases the methods of promotion were positively related to increased vegetable consumption, none of the odds ratios related to vegetable consumption were statistically significant. The study supports a number of studies (Gould & Anderson, 2000; Hampl & Wallen, 1998; Hartman, McCarthy, Park, Schuster, & Kushi, 1997; Havas et al., 1998; Nestor, McKenzie, Hasan, AbuSabha, & Achterberg, 2001; Woodruff, Candelaria, Elder, Gichon, & Zaslow, 1996), which show a link between nutrition knowledge and methods employed to educate WIC clients.

Conclusion

The results seem to indicate that nutrition educators neglected to promote the community gardening project to their clients. If the WIC office addresses this problem and the community gardening project is promoted systematically, the results seem to indicate that more WIC clients will engage in gardening. Given the statistical significance of most of the odds ratios in table 2, the possibility of increased gardening seems promising regardless of the method used.

The study is limited in its small sample size. However, because the study focuses on a unique innovation in the WIC programme, and because of the threat food insecurity poses to low-income communities, the implications are valuable. A future study with a larger sample and a control group may give further insight into whether increased gardening would translate into a significant increase in vegetable consumption, thereby nutritionally benefiting WIC clients. Additional pilot projects and research can determine if these results can be generalized to other settings.

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