

Abstract

Background: Families with low-income face barriers to cooking and eating healthy meals. Meal kits help reduce barriers to cooking and eating well by simplifying shopping, decision making, and meal preparation. While meal kits have become popular, cost may be a barrier. Additional research is needed to determine how meal kits should be priced to reach families with low income and if pricing structures should vary by community.

Objective: To determine whether willingness-to-pay (WTP) for a healthy meal kit service changes among participants with low income residing in rural and suburban communities after a meal kit intervention.

Study Design, Settings, Participants: Rural (N=43) and suburban (N=31) adult participants with low income and at least one child in the home received one meal kit weekly that included ingredients for three recipes along with recipe cards/videos, cooking tools, and nutrition education handouts.

Measurable Outcome/Analysis: Demographic characteristics were collected at baseline and analyzed using descriptive statistics. WTP data were collected at baseline and post-intervention and were analyzed using independent samples t- tests and paired samples t- tests.

Results: Participants were 42.3 ± 12.5 years old, primarily female (89.2%), had a household income less than \$25,000 (66.2%), and experienced food insecurity (70.3%). Participant demographics were similar across suburban and rural sites. WTP for three meals increased significantly from \$45.39 ±18.46 at baseline to \$51.29 ±14.92 post-intervention (p=0.015) for all participants. There were no differences in WTP between participants living in suburban and rural communities.

Conclusion: A higher WTP for three meals post-intervention suggests that participants perceived the meal kits positively. Because WTP did not differ by community, a consistent pricing structure may be appropriate. Future research should continue to investigate the participant's WTP for healthy meal kits across different regions. WTP for a healthy meal kit service among participants with low income residing in urban communities will be assessed in the coming months.

Background

A high prevalence of food insecurity in households with low income makes it challenging to address nutrition-related risk factors because of limited healthy eating resources within this demographic. By providing households with low income access to a healthy meal kit service, food security and dietary quality can be increased as common convenience barriers to healthy eating such as shopping, decision making, and meal preparation are removed. Food costs remain the greatest barrier to healthy eating for families with low income.¹ According to the US Department of Agriculture, in 2019 food insecurity was highest among urban (12.4%) and rural households (12.1%), compared to suburban households (8.3%).² Differences in these communities may impact how much families are willing to spend on food programs such as a meal kit program. Therefore, willingness-to-pay (WTP) for meal kits should be assessed by community in order to identify the most acceptable price point for each community.

Objective

To determine whether willingness-to-pay for a healthy meal kit service changes among participants with low income residing in rural and suburban communities after a meal kit intervention.

Study Design, Settings, Participants

- Participants were recruited from rural (N=43) and suburban (N=31) communities.
- Inclusion criteria: 18 years of age or older, at least one child in the household, meet low low-income qualifications, main preparer of food in the household.
- Participants received one meal kit weekly for 6 weeks that included ingredients to prepare 3 healthy meals for a family of 4.
- Participants also received recipe cards and videos, cooking tools, and nutrition education handouts.
- Data was collected pre-intervention, weekly, post-intervention, and at long term follow up (6 months post-intervention).



Picture 1. Recipes and contents of a weekly meal kit



Picture 2. Lab research assistant preparing the meal kits

Measurable Outcome/Analysis

Demographic data were analyzed using descriptive statistics. Independent and paired samples t-tests were used to determine differences in WTP within and between groups.

Table 1. Participant Demographics by Community

Characteristic	Rural (n=43)	Suburban (n=31)	Combined (n=74)
Gender, %			
Male	7	13	9
Female	93	84	88
Non-Binary/Third Gender		3	1.3
Ethnicity, %			
Non-Hispanic	100	96.4	98.6
Hispanic	N/A	3.6	1.4
Race, %			
Black/ African-American	50	35.7	44.3
White	42.9	53.6	47.1
Two or more races	7.1	10.7	8.6
Age (years; mean)	47.0±13.0	44.1±11.9	45.8±12.5
Household Income, %			
Less than \$15k	23	45	32
15k-25k	37	29	33
25k-35k	26	16	21
35k-50k	9	10	9
50-75k	2	0	1.3
100k	2	0	1.3

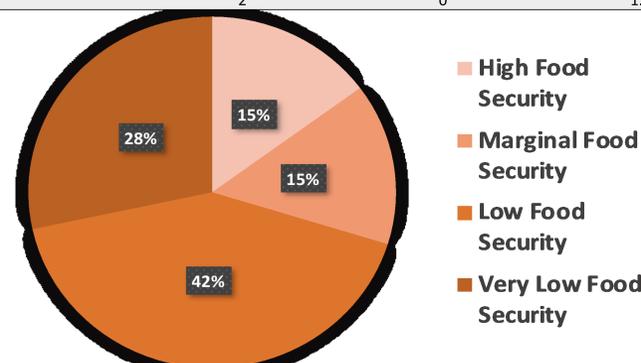


Figure 1. Overall Participant Food Security Status at Baseline³

Results

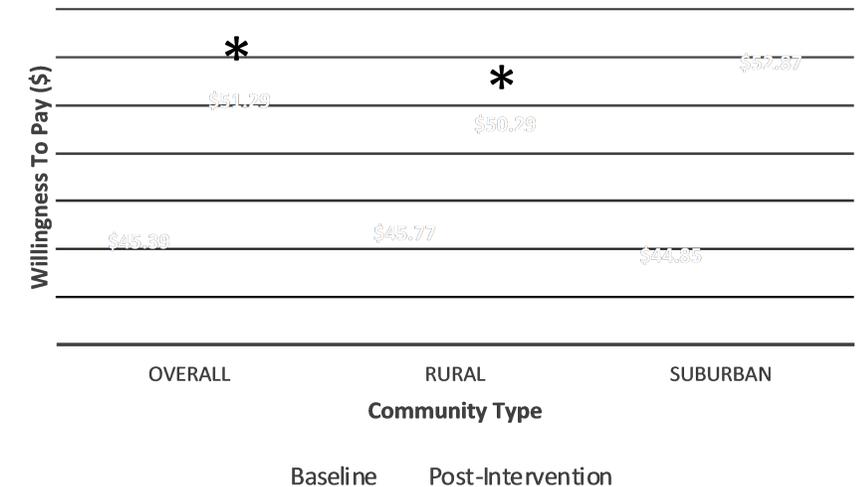


Figure 2. Average WTP for 3 Meals Pre/Post Intervention In Rural and Suburban Communities. *Post-intervention significantly higher than pre-intervention

Seventy percent of participants reported experiencing food insecurity (low food security+very low food security) at baseline (Figure 1). WTP for three meals increased significantly from baseline to post-intervention for all participants (p=0.015) and for the rural community (p=0.023) (Figure 2). There were no significant differences in WTP between participants living in suburban and rural communities.

Conclusion

An increase in WTP for three meals from baseline to post-intervention suggests that participants had a positive experience with the meal kits and increased their perceived value. WTP did not differ by community, suggesting a consistent pricing structure may be appropriate. Future research should continue to investigate the relationship between consumer acceptability and participant's WTP for healthy meal kits by community. WTP for a healthy meal kit service among participants with low income residing in urban communities will be assessed in the coming months. These data will provide further insight on WTP differences by region in order to most effectively identify an appropriate price point for a healthy meal kit service.

References

- [1] Seguin, R., Connor, L., Nelson, M., LaCroix, A., & Eldridge, G. (2014). Understanding barriers and facilitators to healthy eating and active living in rural communities. *Journal of nutrition and metabolism*, 2014, 146502. <https://doi.org/10.1155/2014/146502>
- [2] Mui, Y., Headrick, G., Raja, S., Palmer, A., Ehsani, J., & Pollack Porter, K. (2022). Acquisition, mobility and food insecurity: integrated food systems opportunities across urbanicity levels highlighted by COVID-19. *Public health nutrition*, 25(1), 114–118. <https://doi.org/10.1017/S1368980021002755>
- [3] USDA. (2022). Definitions of Food Security. USDA ERS - Definitions of Food Security. Retrieved May 2, 2022, from <https://www.ers.usda.gov/topics/food-nutrition-assistance/food-security-in-the-u-s/definitions-of-food-security/>