

## Abstract

**Background:** The MacArthur Scale of Subjective Social Status (SSS) is a two-item measure that assesses a participant's perceived rank relative to a group and is positively correlated with a participant's mental and physical health.

**Objective:** To evaluate the impact of a meal kit intervention on SSS of participants with low income in two communities.

**Study Design, Settings, Participants:** Main preparers of food from rural (n=40) and suburban (n=23) communities with low income and at least one child, recruited through local partners, participated in a six-week meal kit intervention. Weekly kits contained three recipes with enough ingredients to feed a family of four. Participants completed a demographic and SSS survey at baseline and post-intervention. Participants ranked themselves on a scale of 1-10 correlating with how highly they perceived themselves as members of their community and society.

**Measurable Outcome/Analysis:** An independent samples t-test was conducted to determine differences in SSS at baseline between communities. A paired samples t-test was used to determine differences between baseline and post-intervention SSS scores for each community.

**Results:** Participants were 46.1±12.8 years, primarily female (88%) and non-Hispanic (98.4%). A majority (85.7%) of participants reported an annual income below \$35,000. Overall participant SSS scores improved from baseline to post-intervention from 4.7±1.8 to 5.1±1.7 (p=0.008) within the community and 4.4±1.7 to 4.9±1.7 (p=0.049) within society. Rural participant community and society SSS scores improved from baseline to post-intervention (5.1±1.9 to 5.6±1.6; p=0.008 and 4.6±1.6 to 5.3±1.7; p=0.024, respectively). Suburban participant SSS scores did not improve.

**Conclusion(s):** This intervention improved perceived SSS, which was largely driven by rural participants. Rural residents may have less access to resources such as a meal kit program potentially leading to a stronger improvement in SSS. These data suggest that access to a novel food program typically not accessible to SNAP-eligible families may improve perceived social standing and subsequently health outcomes, which warrants further research.

## Background

The MacArthur Scale of Subjective Social Status (SSS) is a two-item measure that assesses a participant's perceived rank relative to a group. This measure shows a ladder and asks respondents to rank themselves on a rung labeled 1-10. Subjective social status as a measure has been demonstrated to be more accurate in predicting a range of health outcomes than standard income measures used to show socioeconomic status (SES).<sup>1</sup> Furthermore, when controlling for SES, SSS has continued to function as a predictor for health, showing validity of the measure within those of similar SES.<sup>1</sup>

This question is commonly asked twice, asking participants to compare themselves to society at large, and within their own community. The relationship between health outcomes and society or community vary in which is the better predictor based on the measured community, necessitating the collecting of both.<sup>2</sup> Studies have shown both stronger and weaker associations with society and community SSS and health.<sup>2</sup>

## Objective

To evaluate the impact of a meal kit intervention on Subjective Social Status of participants with low income in a rural and suburban community.

## Study Design, Settings, Participants

Main preparers of food from a rural (n=40) and a suburban (n=23) community with low income and at least one child participated in a six-week meal kit intervention. These participants were recruited through local partners. Weekly meal kits contained three recipes with enough ingredients to feed a family of four. Meal kits contained recipe cards, QR codes to recipe demonstration videos, and nutrition education handouts that covered a variety of topics such as cooking with herbs and family mealtimes. Participants completed a demographic and SSS survey at baseline and post-intervention. Participants ranked themselves on a scale of 1-10 correlating with how highly they perceived themselves as members of their community and society.

### MacArthur Scale of Subjective Social Status

Imagine this ladder represents the place that people occupy in (Society/Community):

At the top of the ladder are the people who are the best off -- they have the most money, most education, and most respected jobs. At the bottom are the people who are the worst off, those who have the least money, least education, least respected jobs, or no job.

Please place an 'X' on the rung that best represents where you think you stand on the ladder.

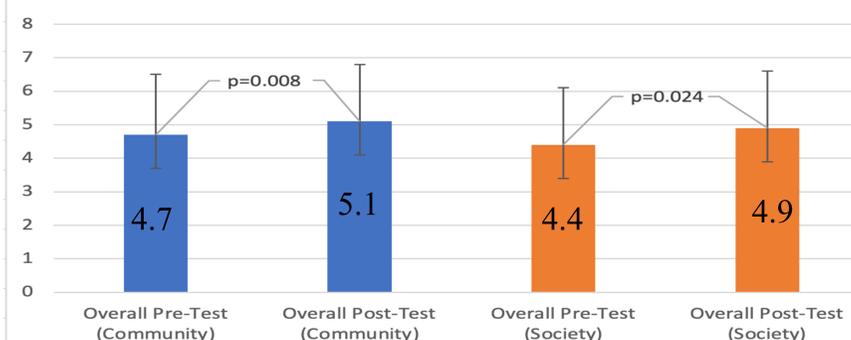


## Measurable Outcome/Analysis

An independent samples t-test was conducted to determine differences in SSS at baseline between rural and suburban communities. A paired samples t-test was used to determine differences between baseline and post-intervention SSS scores for each community.

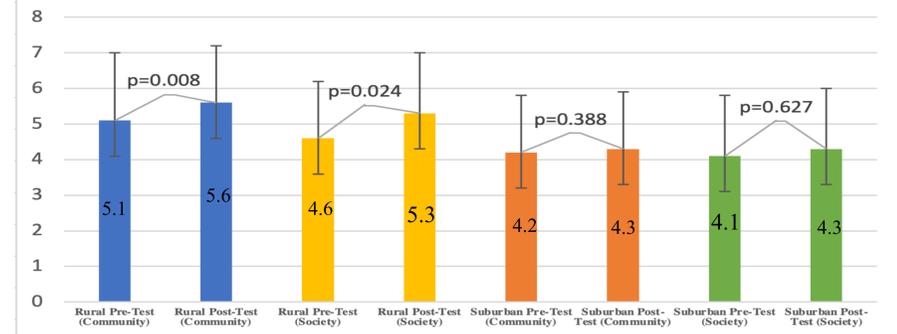
## Results

Overall Changes in Subjective Social Status



## Results Continued

Rural and Suburban Changes in Subjective Social Status



Participants from the sample were aged 46.1±12.8 years, primarily female (88%) and non-Hispanic (98.4%). A majority (85.7%) of participants reported an annual income below \$35,000. Overall participant SSS scores improved from baseline to post-intervention from 4.7±1.8 to 5.1±1.7 (p=0.008) within the community and 4.4±1.7 to 4.9±1.7 (p=0.049) within society. Rural participant community and society SSS scores improved from baseline to post-intervention (5.1±1.9 to 5.6±1.6; p=0.008 and 4.6±1.6 to 5.3±1.7; p=0.024, respectively). Suburban participant SSS scores did not improve.

## Conclusions

This meal kit intervention improved overall perceived community and society SSS, which was primarily driven by rural participants. Rural residents may have less access to resources such as SNAP and food pantries leading a meal kit program potentially to cause a stronger improvement in SSS. In contrast those in suburban communities might have better access to nutritional aid, limiting the improvement in SSS from the novel meal kit intervention. These data suggest that access to a novel food program typically not accessible to SNAP-eligible families may improve perceived social standing and subsequently health outcomes, which warrants further research.

## References

- 1) Stanford SPARQ. (n.d.). MacArthur Scale of Subjective Social Status – Adult Version. SPARQtools. <https://sparqtools.org/mobility-measure/macarthur-scale-of-subjective-social-status-adult-version/>
- 2) Zell, E., Strickhouser, J. E., & Krizan, Z. (2018). Subjective social status and health: A meta-analysis of community and society ladders. *Health Psychology, 37*(10), 979–987. <https://doi.org/10.1037/hea0000667>