Impact of urban community gardens on the sustainability of lifestyles: findings of the quasi-experimental *JArDinS* study

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INTRODUCTION

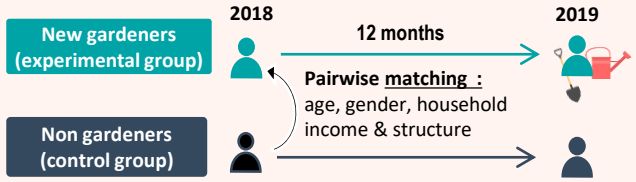
Urban gardening may lead to health benefits by interconnecting ecosystem health and human health[1]. However longitudinal studies based on quantitative data are needed to investigate multiple health benefits associated with community gardening[2].

Objective : assessing the impact of community garden participation on the adoption of more sustainable lifestyles in French adults

METHODS

Population : adults living in Montpellier (France).

Design : **natural experiment**, namely the **first year of gardening in a community garden,** evaluated by a **quasi-experimental design**.



Data collection tools :

1) 1-month food supply diary and food purchase receipts collection
2) 9-day wear hip-worn triaxial accelerometer
3) Online questionnaire

Qualitative evaluation : **semi-structured interviews with 15 gardeners** after a full year of gardening to better understand changes that may have occurred in gardeners' lives during the first year of community gardening.

Data collected : The **sustainability of lifestyles** according the 3 pillars of sustainability

SOCIAL / HEALTH

Nutritional quality of household food supply : Fruit & vegetable purchases, Mean Adequacy Ratio (MAR), Mean Excess Ratio (MER)
Physical activity (PAEE, time spent in activities of different intensities)
Mental health (WEMWB-Scale)
Social health (UCLA loneliness scale v3)

ENVIRONMENT

Environmental impact of household food supply (carbon impact, acidification, eutrophication, ratio A:V)
Food waste (Sensibility to food waste scale)
Connection with nature (Nature relatedness scale)

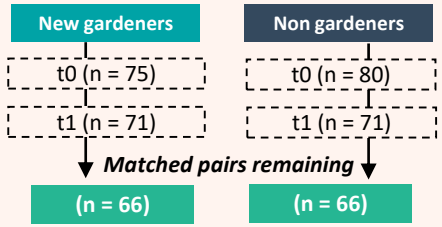
ECONOMY

Total expenditure for household food supply
Expenditure share by food groups
Contribution of garden's produce

Data analysis : changes in lifestyle's sustainability components between the two groups across time (pre- to post-test) investigated using linear mixed-effect models with different levels of adjustment.

RESULTS

Flow diagram of the study



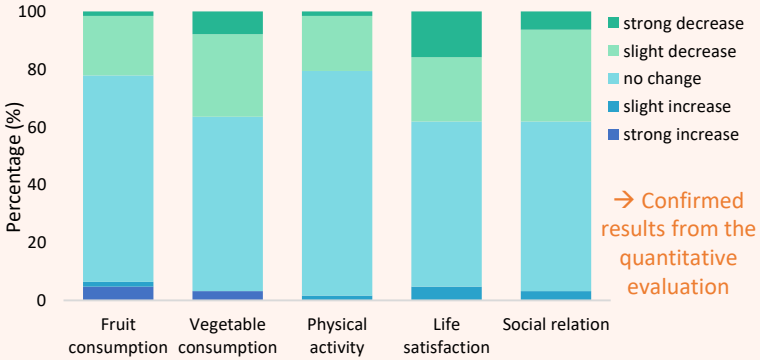
Characteristics of gardeners à t0:

- 44.0 (14.0) y
- 76% females
- 68% childless households
- 76% with university degree
- 71% with no past experience in gardening

1 Impact of 1 y. gardening on lifestyles sustainability

No significant effect of the first year of gardening on the investigated lifestyles components

2 Perceived changes by gardeners after the first year (n = 63)



→ Confirmed results from the quantitative evaluation

3 Attendance in the gardens

- Low attendance
- 16 drop-outs during the year

Post-hoc analyses on active gardeners only (n = 37) or those who did not drop out of the garden during the year (n = 50)
→ Same conclusion

4 Plausible explanations (from 15 qualitative interviews):

→ pre-existing health and environmental consciousness (n = 9)
→ barriers to community garden participation :
- lack of time (n=9)
- lack of gardening knowledge (n=3)
- health issues (n=2)
- conflicts with other gardeners (n=2)

CONCLUSION

Results of *JArDinS* study call on public authorities and community gardening leaders to:

- organize the active recruitment of individuals from various socioeconomic stratum in order to enroll people with lower health and environmental consciousness.
- rethink the organization and management of gardens to encourage the integration of new gardeners and a more active attendance of gardeners.

[1] Scram-Bijkerk *et al.* (2018). Indicators to support healthy urban gardening in urban management. Science of The Total Environment, 621, 863–871.
[2] Alaimo *et al.,* (2016). Amplifying health through community gardens: A framework for advancing multicomponent, behaviorally based neighborhood interventions. Current Environmental Health Reports, 3(3), 302–312.

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