

The research centre for inclusive
access to outdoor environments



Take a break!

Escaping everyday stresses in greenspace

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Potential mechanisms linking landscape and health - 1



Many people walk when in natural landscapes –
physical activity has positive effects on physical health, mood and stress

Potential mechanisms linking landscape and health - 2



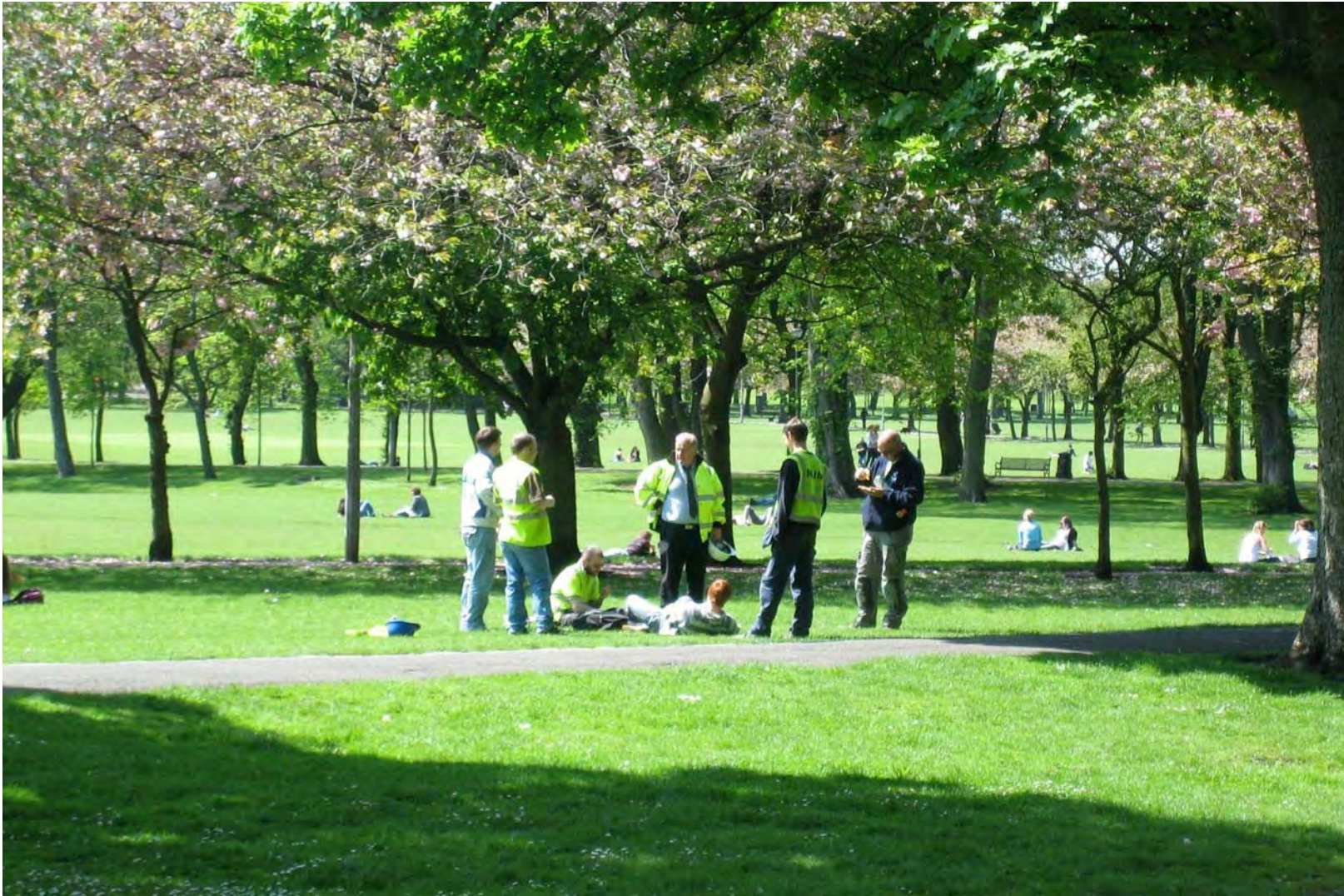
Social contact when in natural environments – may encourage people to be more active and improve mood or relieve stress

Potential mechanisms linking landscape and health – 3a



Psychological response to perceiving natural environments
Attention Restoration Model (Kaplan & Kaplan)

Potential mechanisms linking landscape and health – 3b



Independent physiological responses to natural environments
(Ulrich et al., Hartig et al, Ottoson & Grahn, Park et al)

Research questions



Is the amount of green space near people's homes related to people's levels of stress or mental wellbeing?

Is any link between green space and health related to:

- people's perceptions of green space
- reasons for visiting green space,
- different activities in green space
- use for social purposes
- how often people visited green spaces,
- whether or not they had good views of green space from their homes?

Household Survey

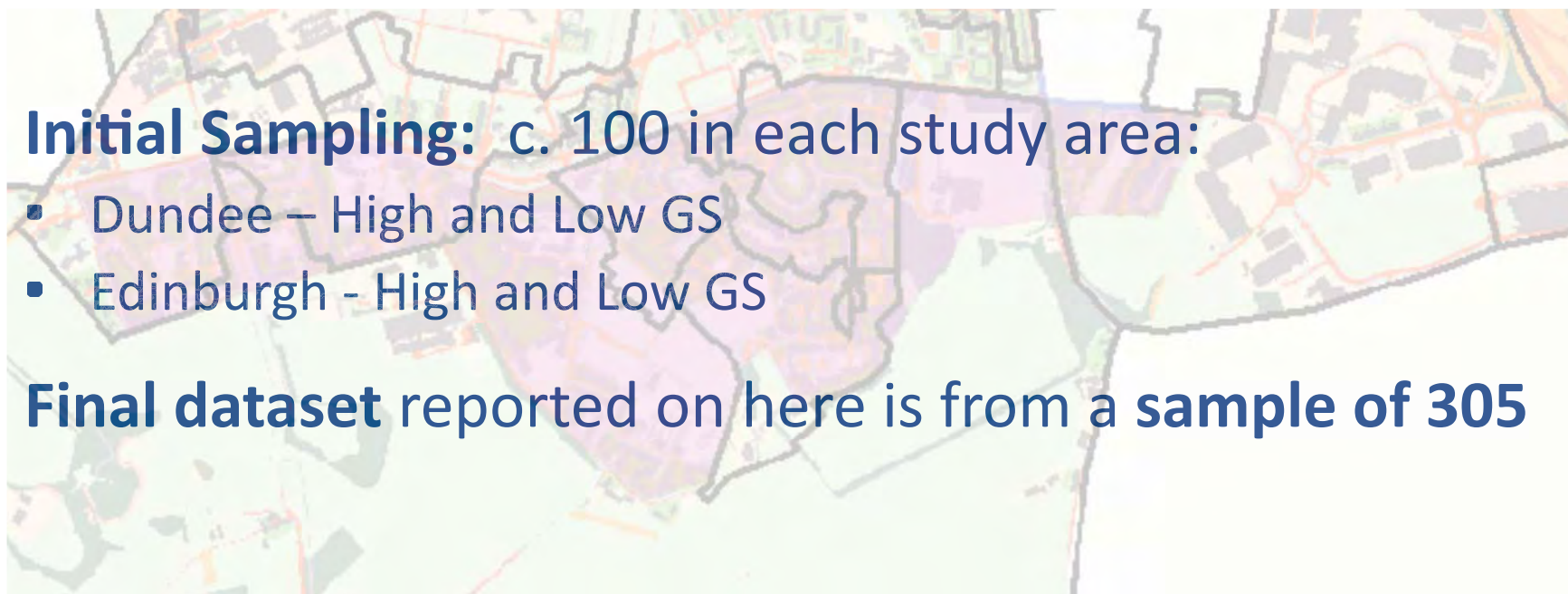
Study design: Cross-sectional, CAPI-administered household questionnaire, drawing on initial focus group findings, June 2010. Urban areas based on:

- high indices of poverty (using Carstairs Index) and
- high quantity green space or low quantity green space.

Initial Sampling: c. 100 in each study area:

- Dundee – High and Low GS
- Edinburgh - High and Low GS

Final dataset reported on here is from a **sample of 305**



Sample characteristics (n=305)

- **Age:** mean = 43.6 years (SD 17.1)
- **Gender:** 45% male (136) , 55% females (169)
- **Income** (subjective measure):
 - 34% finding it 'difficult or 'very difficult' to cope on current income levels
 - 49% 'coping' on current income
 - 14% 'living comfortably' on current income

Measures used in the study



Greenspace quantity – 4 different measures of varying detail at ward and data zone level

Key outcomes – is green space linked to:

Stress: Perceived Stress Scale (PSS)

Mental Wellbeing: Warwick-Edinburgh Mental Wellbeing Scale (the shortened version – SWEMWBS)

Other outcomes of interest:

General health and physical activity levels

Levels of green space use and activities when there

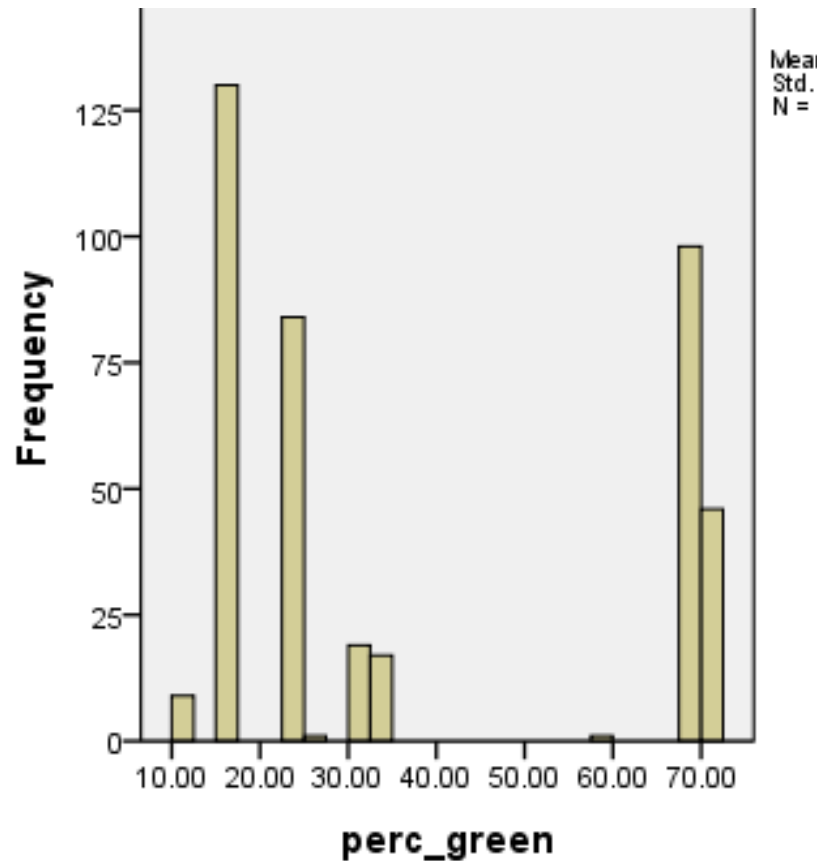
How long it takes to get there (and is it walkable?)

Why people visit green space

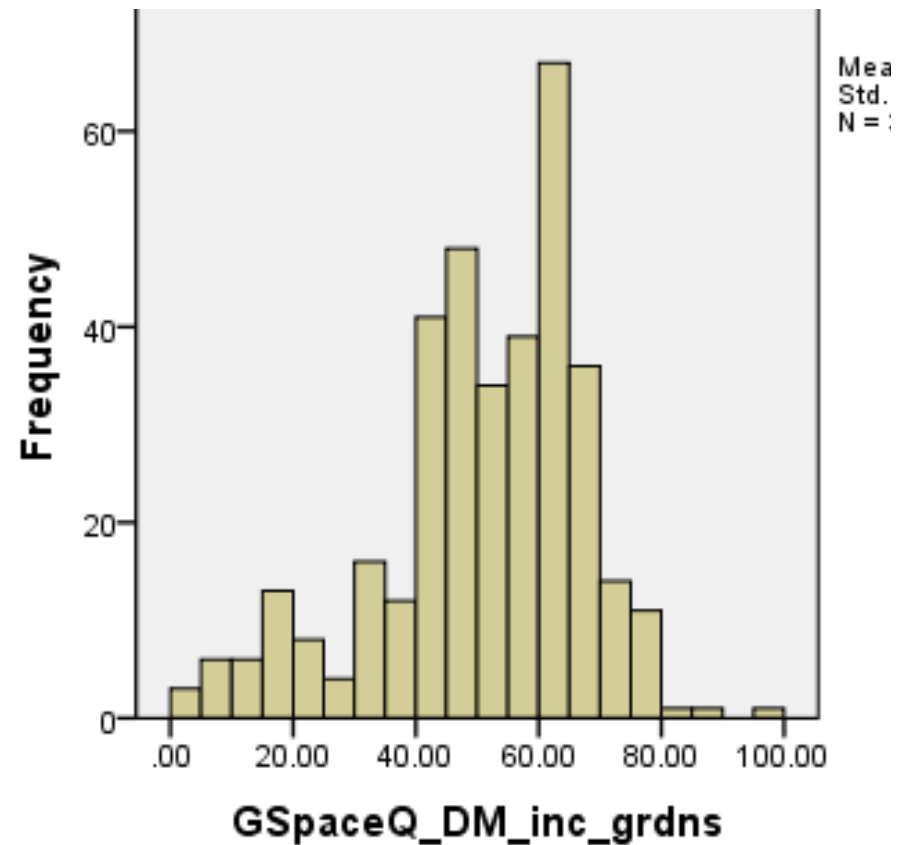
Perceptions of green space qualities

Green Space Quantity Measures: the level of detail varies according to the measure used

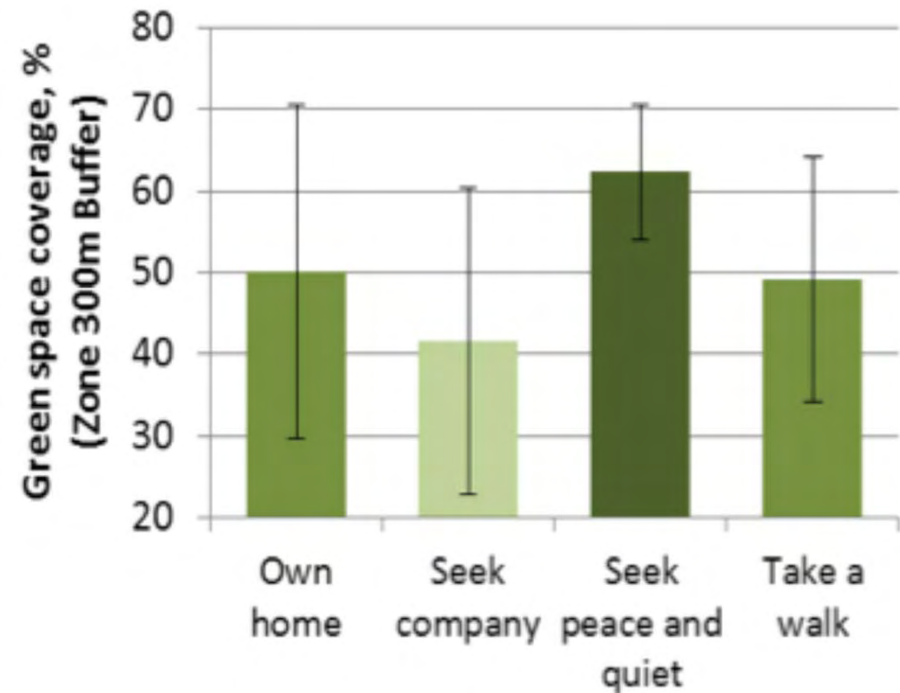
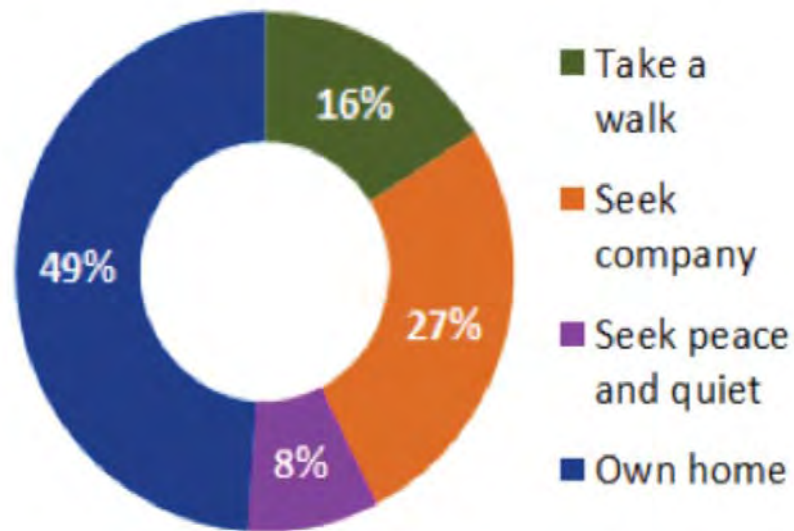
Ward Level % Green Space



Zone Level % Green Space
(with private gardens included)



What do participants do to escape from stress and 'clear the head'?



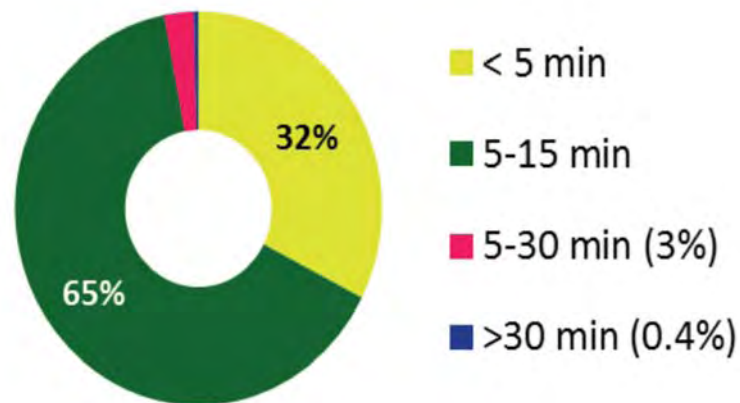
Choices from four options varied according to the amount of green space (n=305)

What did survey participants tell us about their use of green space?

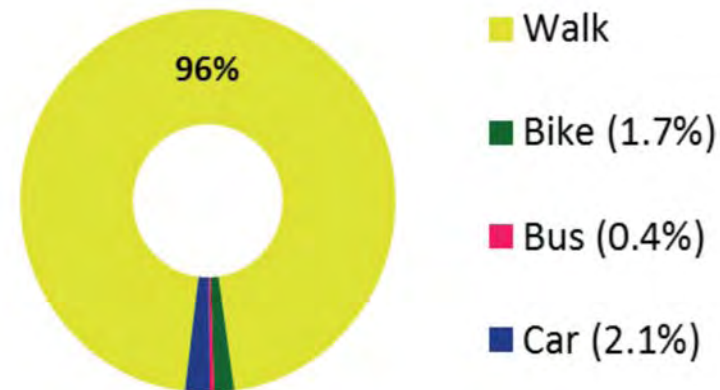
80% used their local green space at least once/year.

25% used their local green space daily.

No significant difference in overall usage between men and women.

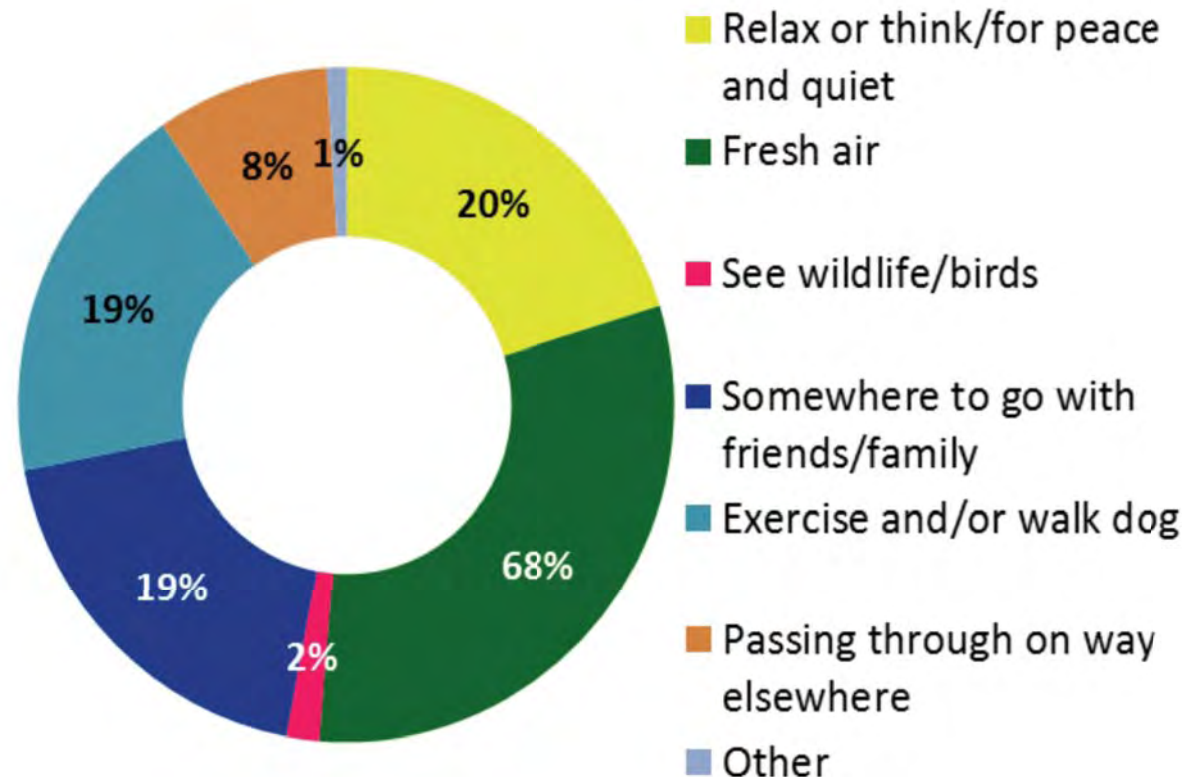


Perceived walking distance to the nearest green space (n=234)



Mode of travel to the nearest green space (n=234)

Why do participants visit green space?



Based on identifying the two main reasons for visiting (n=153)

Visiting green space **with other people** was associated with **lower levels of perceived stress for men and women**, and (for men only) higher levels of mental wellbeing and general health

Do *perceptions* of green space quantity and quality make a difference to visits and wellbeing outcomes?

Quantity: having 'sufficient' local green space is associated with better mental wellbeing and higher frequency of visits, but not stress.

Quality: satisfaction with quality of local green space is associated with lower stress, higher mental wellbeing, and higher frequency of visits

Safety of local green space is associated with mental wellbeing but not stress

Does visiting green space more often make a difference to health outcomes?

The more local green space, whether objectively or subjectively measured, the greater the frequency of green space use – a positive association

General health: frequency of use was associated with better general health in winter, but not in summer

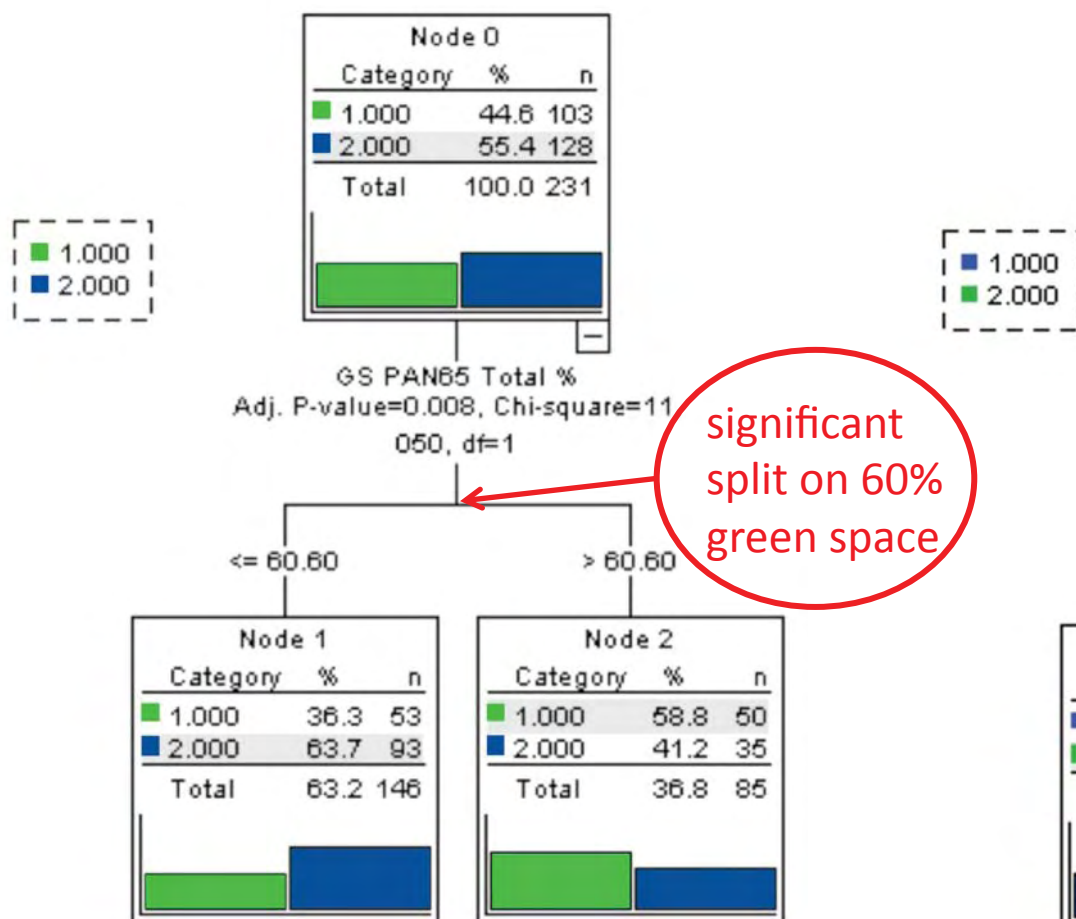
Physical activity: frequency of use was associated with higher levels of physical activity, especially strong for summer use

Mental wellbeing: no association with frequency of use

Stress: frequency of use was associated with *higher* stress levels in women (a surprising finding)

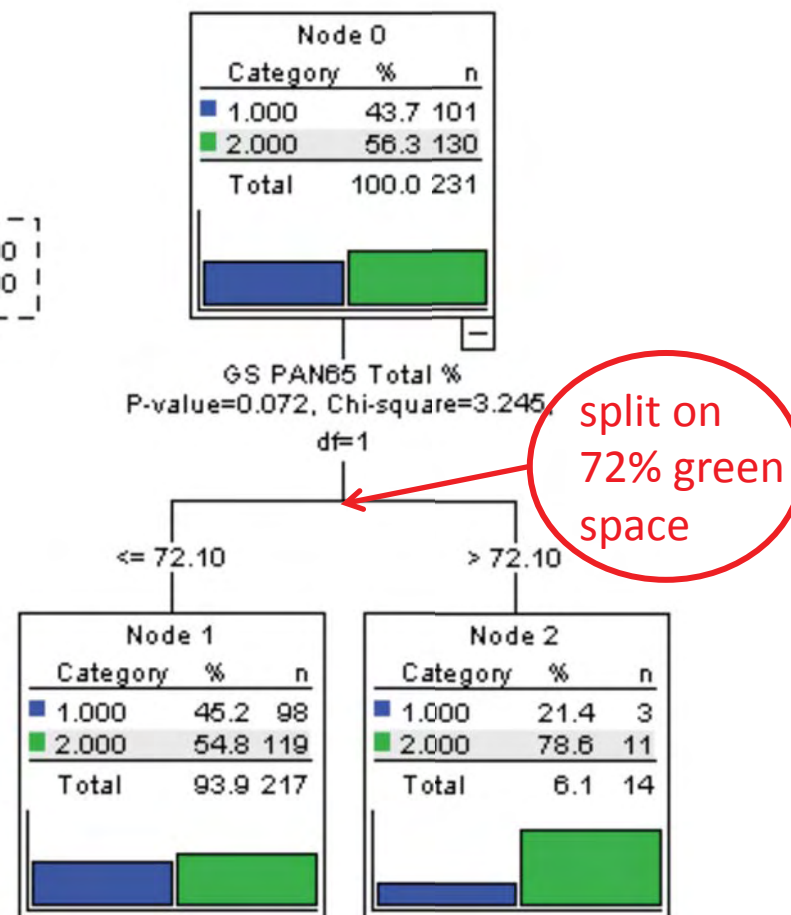
How much green space is enough to make a difference?

Stress



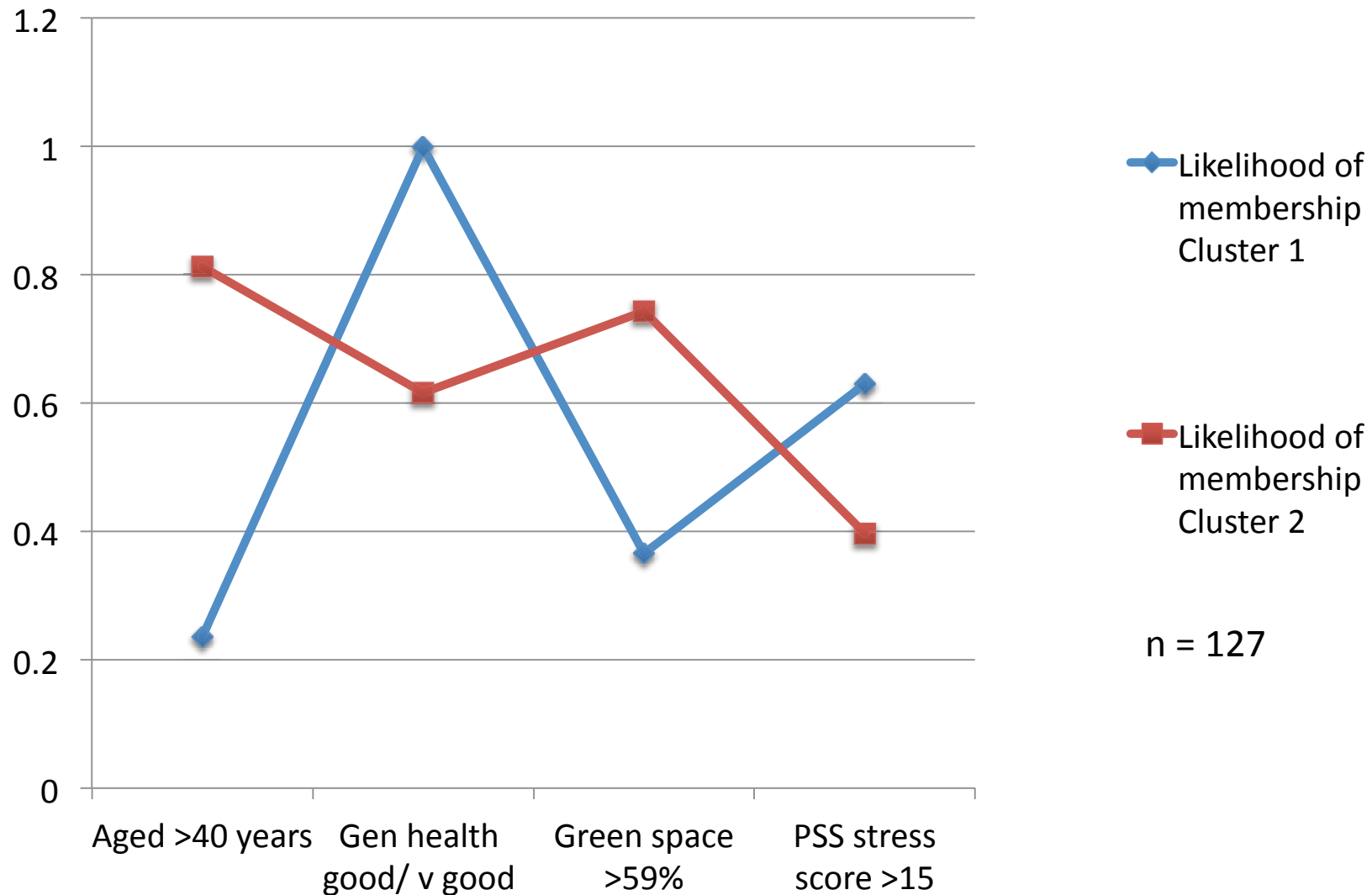
AnswerTree showing what % green space best predicts a difference in stress

Mental wellbeing



AnswerTree showing what % green space best predicts a difference in mental wellbeing

There seem to be two groups of women in our sample, responding in different ways



Some final thoughts on our survey findings



People's reports of their general health, stress and mental wellbeing each tell us different things, and are related to green space in different ways

Quantity of green space influences use, and use is associated with better general health (in winter), but it is *quality* of green space that is associated with less stress and better mental wellbeing

Social engagement while using green space is associated with lower stress

Women's response to green space is more varied than men, depending on life circumstances, but for some women green space may be important for lower stress