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Title: “My Health Matters” A community-led intervention to reduce health inequalities related to physical activity and healthy eating in Stoke-on-Trent, UK.

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Context;

There is growing recognition that the rising incidence of obesity is being driven by environmental factors that affect individuals' physical activity and dietary choices. The environments and neighbourhoods in which we live, and with which we interact, have become ones that encourage lifestyle choices that decrease physical activity and encourage over consumption of food stuffs. Recent research in the area related to obesity signal a simple, evolutionary shift away from individually orientated theories to broader, more environmentally based approaches for understanding and altering the wider environmental determinants of health behaviours.

There is a strong link between the built environment, health outcomes and inequalities in health. Elements of the built environment can negatively impact upon levels of physical activity and healthy eating.

Previous research has identified broad features of place/neighbourhood that are likely to affect health outcomes. These include physical features of the environment (e.g. urban form (WHO, 2008), access to greenspace areas for play and active living (Maas et al., 2008), pedestrian network (Saelens et al., 2003), active transport (Saelensminde, 2004), provision of services (e.g. healthcare, education), and socio-cultural/psychosocial factors (e.g. ethnic makeup, level of social capital and community engagement (Campbell, 1999)).

Stoke-on-Trent, UK, is designated as one of the 'spearhead group' of 70 local authorities that were identified by the UK government as priority areas to address geographical inequalities in life expectancy, cancer, heart disease, stroke and related diseases. Men in Stoke-on-Trent experience a life expectancy of 73.2 years which is 3.4 years less than the average male life expectancy for England as a whole. Women in the city have a life expectancy of 78.7 years, which is 2.2 years less than the female life expectancy for England as a whole. Stoke-on-Trent has some of the highest morbidity and mortality rates in the UK.

Inequalities in lifestyle are important factors that contribute to inequalities in health and life expectancy. Despite some limitations on local lifestyle data, estimates suggest that smoking, diet and obesity levels in Stoke-on-Trent are all significantly worse than the national average. Almost a quarter of all adults in Stoke-on-Trent are thought to be obese, although GP practice level data have indicated a greater prevalence with levels potentially over 30% in some areas.

Current physical activity participation figures for adult participation in sport and active recreation places Stoke-on-Trent 350th out of 354 Local Authorities in England. The Sport England Active People Survey (2006) reported participation rates in Stoke-on-Trent that were well below the national average: 15.8% of the Stoke-on-Trent adult (16+) population were estimated to undertake at least 30 minutes of active recreation of

at least moderate intensity on three or more days per week. Estimates of physical activity participation in the Stoke-on-Trent adult population (n=194,494) indicate that the majority of the population undertake zero 30-minute sessions of moderate to vigorous physical activity each week (equating to 118,329 residents) (Stoke Primary Care Trust, 2008).

Being more physically active has been linked with improvements in general health and wellbeing, increased longevity, and has been shown to reduce the risk factors associated with Coronary Heart Disease (CHD) and Cardiovascular Disease (CVD), assist Weight Management and, in certain cases, improve Mental Health. Physical activity promotion is at the heart of the city's efforts to promote health and longevity for residents in Stoke-on-Trent; a city with below average life expectancy and physical activity participation rates.

The Floor Target Action Plan for Physical Activity (FTAP) (Stoke Primary Care Trust, 2008) is one of a number of city-wide strategic plans developed to improve life expectancy, in the context of improving lifestyles in the population and tackling health inequalities. An ambitious overarching target has been set for 30% of the Stoke-on-Trent population (16+) to undertake at least 30 minutes physical activity of at least moderate intensity on three or more days per week by 2012. Whilst a number of mainstream national (DH Physical Activity Plan) and local physical activity interventions are in place, there is little evidence of how to increase population levels of physical activity in such deprived communities.

The "My Health Matters" project has been designed specifically to help build partnership with statutory healthcare providers, the local voluntary and community sector to help meet the challenge of increasing physical activity levels and healthy eating in targeted areas within Stoke-on-Trent.

The project is based on evidence that increasing levels of physical activity and healthy eating will help to raise the low levels of life expectancy experienced by the population of Stoke-on-Trent. It acknowledges that the voluntary and community sector are best

placed to reach the often 'unseen' and 'unheard' people in our communities that we specifically wish to engage with in terms of promoting a desire and motivation for improved health.

Rationale;

There is a need to develop new approaches to combating health inequalities. A community-led approach is an important component of health improvement policy and practice (Baum, 2007; CSDH, 2007; Murray and Campbell, 2004). Recent National Institute of Clinical Effectiveness Guidance on Community Engagement (NICE, 2008) describes key factors required for effective engagement. However, although these approaches are often described, their impact is seldom evaluated and the process of integrating into local area planning usually ignored. Our approach aims to enhance the health of a community through promoting greater local involvement in community and health decision making to address the health needs and inequities experienced by the community. The establishment of such an approach within any community requires considerable engagement with the community and other agencies. The evaluation of the impact requires sophistication in the selection of outcome measures, and expertise in the design of a community trial. An understanding of the various processes involved in the development and implementation of such a programme is essential if we are to maximise its transferability.

The rationale supporting the application of theoretically sound community participatory research is well established in the health promotion, public health, social and behavioural literature (Green et al, 2003). Whilst there is no single ideal "model", the central tenets of effective community participatory research are trust and mutual respect, both of which are core constructs of social capital (Campbell, 1999). We define community-based participatory research as a collaborative approach to research that equitably involves those affected by the issue under study for purposes of gaining knowledge and taking action to effect change. The proposed theoretical framework offers a method of maintaining commitment to rigorous research and analysis, whilst acknowledging that complex health issues of inequality must include a mix of social,

political and scientific processes. Community participatory research and community-led intervention are grounded in the concepts of “local community” and “local control” and in combination may potentially provide the required social and political combination to address some of the health inequalities related to physical activity.

Description: “My Health Matters”

The project aims to develop and to evaluate a community-led intervention to reduce health inequalities by increasing physical activity and promoting healthier eating as defined by community members themselves. The project will focus on areas within three deprived wards in Stoke-on-Trent (Burslem South, Weston and Meir North and Bentilee and Townsend), each is similar with regards to socio-economic status (i.e. in the bottom 40% of the Index of Multiple Deprivation, 2007). The project will be conducted in four phases over a 3 year period; some phases will be ongoing and may overlap;

Phase I: Produce a detailed baseline map of the built environment in each of the three wards using Geographical Information Systems (GIS) at the level of Lower Super Output Area and integrate this with information obtained from a community postal survey.

Phase II: Develop effective partnership between Staffordshire University, key professional stakeholders in health and the community in order to design neighbourhood interventions and to engage local community residents through community health forums designed to strengthen community involvement and participation.

Phase III: Based on the partnership consensus, identify, prioritise and design pragmatic intervention(s) that address specific environmental disparities related to physical inactivity and healthy eating.

Phase IV: Pilot the intervention(s) in order to test process, implementation and effects of this approach to increasing physical activity/healthy eating.

This case study presents key findings from Phase I; GIS mapping of the built environment and the community postal survey; and introduces Phase II and the methodologies used to strengthen community involvement and participation.

During Phase I of the project a number of environmental factors were measured, including; convenience and proximity of physical activity spaces, greenspace/leisure facilities from resident's homes, neighbourhood connectivity and walkability, land-use-mix and population density, traffic, safety and crime, food outlets and restaurants.

These measures describe aspects of the environment that can either have a positive or negative influence on health behaviours and health outcomes. All GIS measures were calculated around every residential address within the targeted study areas.

A postal community survey of randomly selected addresses from the publicly available Postcode Address File across the three target areas was undertaken between July and September 2009.

Overall, the response rate to the questionnaire was low (12.3%), however, respondents were representative of the study population in terms of gender, socio-economic status and ethnicity. The following were included in the survey; individual's socio-demographic details, including, gender, age, ethnicity, marital status, household characteristics, employment status, education level and vehicular access.

Validated measures of perceived health were measured (SF12 health survey) and the Neighbourhood Environment Walkability Scale (ANEWS) was used to assess residents' perceptions of their neighbourhoods related to physical activity and environmental characteristics i.e. proximity to and ease of access to retail stores, shops, restaurants, local amenities, street connectivity; footpaths, aesthetics; traffic safety; and safety from crime.

Social Capital questions were taken from the Health Survey for England (2002) and included; trust and reciprocity, participation in community organisations, access to

services, satisfaction / enjoyment of living in the local area, length of residence in area, neighbourhood, and perceptions of anti-social behaviour.

Levels of physical activity were assessed by the International Physical Activity Questionnaire (IPAQ) – recommended by the World Health Organisation.

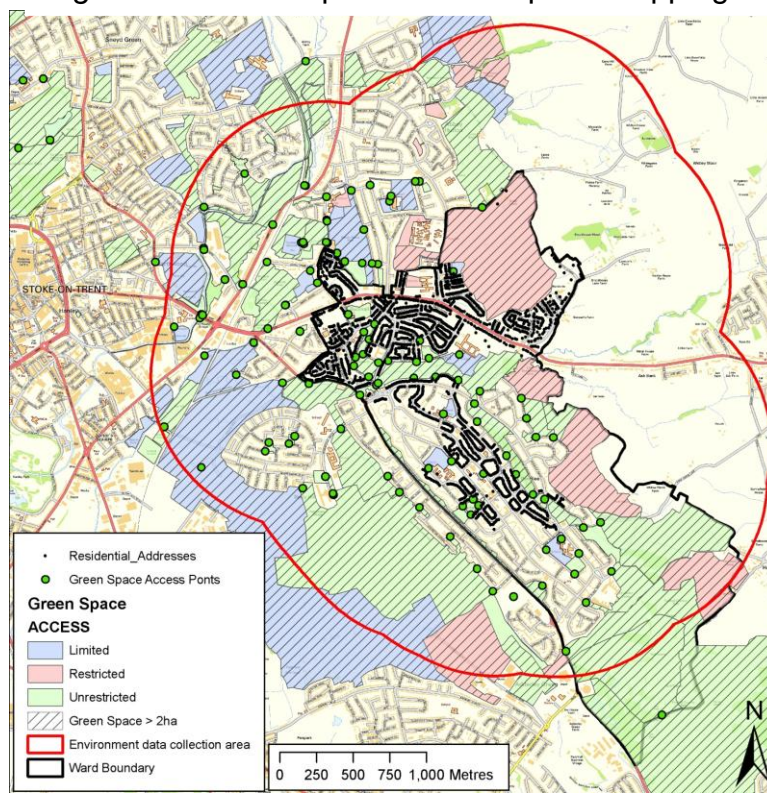
In addition, daily fruit and vegetable consumption was used as a proxy measure of healthy eating. This was measured in terms of the percentage of respondents eating the daily recommended level of 5 portions of fruits and vegetables per day.

A. Key findings from the GIS mapping of the built environment.

In general the environments of all three areas were not supportive of healthy living, did not facilitate physical activity and did not help to promote healthy eating. There was a lack of local access to fresh food outlets and a large number of fast food outlets. There were a large number of residents within 300m walking distance of large areas of green space, but these spaces were of poor quality e.g. poorly maintained, no facilities on them, not functional or properly maintained/managed. Physical activity facilities were within walking distance for some of the population but some areas had very few within walking distance.

Access to Green Space – Overall there was a high level of local access to unrestricted green space across the three wards ranging from 76%-96% of households within 300m walking distance. However, this varied when the quality of green space is considered; some areas had 0% and 3% of households within 300m walk of 'excellent quality'

Figure 1 - An Example of Green Space Mapping



green space e.g. Meir North and the Grange respectively. In Burslem South 43.6% of households were within 300m of 'excellent quality' green space.

Access to local amenities and services – Overall there were a high proportion of households within 500m walking distance of shops, services and amenities (ranging from 83-90%) across the three areas.

Access to fast food and fresh food outlets – In Burslem South, 98.6% of households were within 500m of a fast food outlet with only 21.3% within 500m of a fresh food retail outlet. In Bentilee and Townsend, 79.9% of households were within 500m of a fast food outlet with only 32.6% within 500m of a fresh food retail outlet. In Meir North, 68.8% of households were within 500m of a fast food outlet but 'none' were within 500m of a fresh food retail outlet.

Access to physical activity facilities – All areas had reasonably good access (92% Bentilee and Townsend, 100% Burslem South, 53% Meir North) to at least one local physical activity facilities e.g. leisure centres, gyms, church halls and community centres, whereas this was much lower when looking at access to multiple facilities within 1km (22% Bentilee and Townsend, 3.2% Meir North).

Road traffic and road accidents – The level of road traffic on major roads across all three areas was high (over 5000 vehicles per day). There are areas with higher levels of road accidents e.g. around Bucknall and Townsend Estate and Lyme Road (Meir).

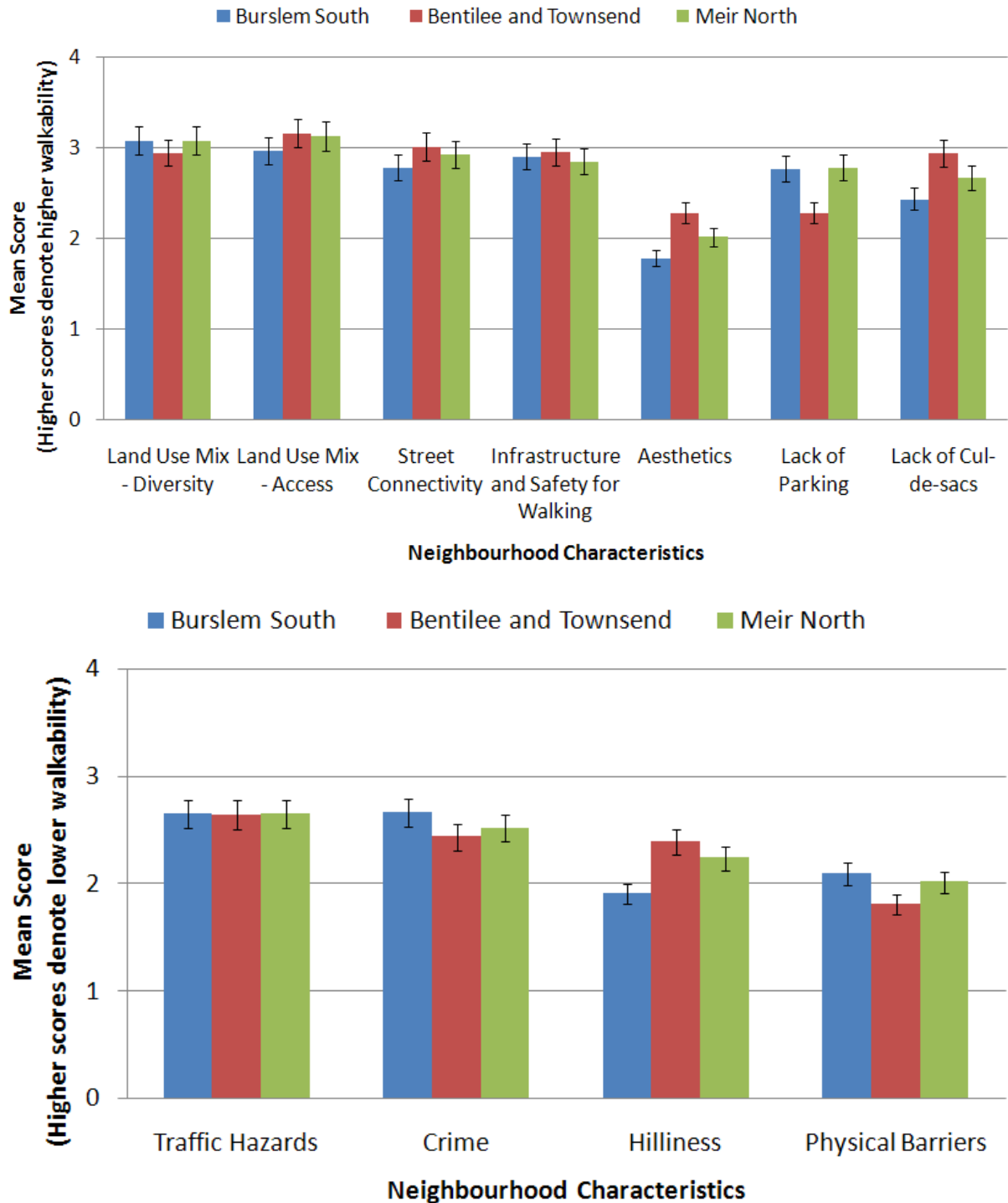
B. Key Findings from the Community Survey

General Health (SF12): Lower than average physical and mental health scores on the SF12 compared to national averages were reported. Only the age groups of 16-29 years (Bentilee and Townsend, Meir North) and 30-49 years (Bentilee and Townsend) scored higher than average on the physical functioning subscale of the SF12.

Neighbourhood Environment Walkability (ANEWS): In all areas positive environmental characteristics included; land-use-mix (access and diversity), street connectivity and

infrastructure and safety for walking. In comparison, the negative characteristics of the environment included traffic hazards and crime.

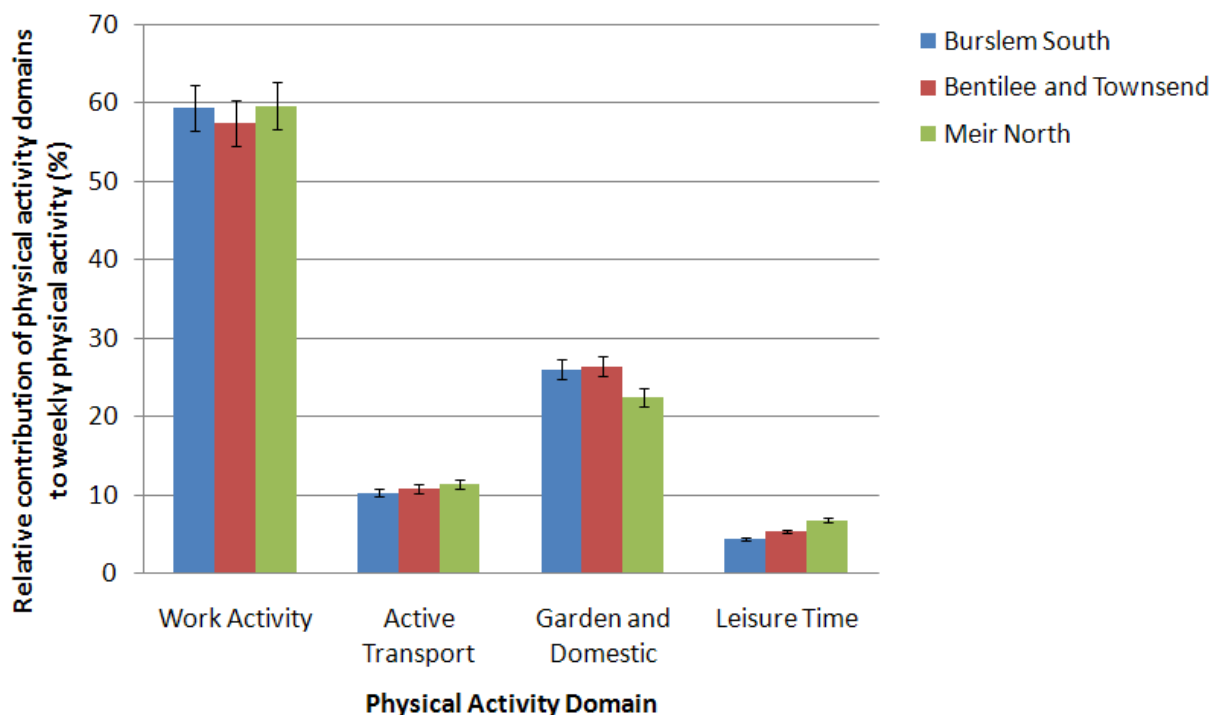
Figure 2 – Positive and Negative Neighbourhood Characteristics relating to Walkability



Social Capital: The majority of respondents enjoyed living in their neighbourhoods with individuals on average living in the area for over 20 years. There was, however, a low perception of trust and respondents reported perceived problems with teenagers and vandalism in the area. One-third of respondents participated in a group or organisation, however, perceived access to leisure facilities in the area is poor.

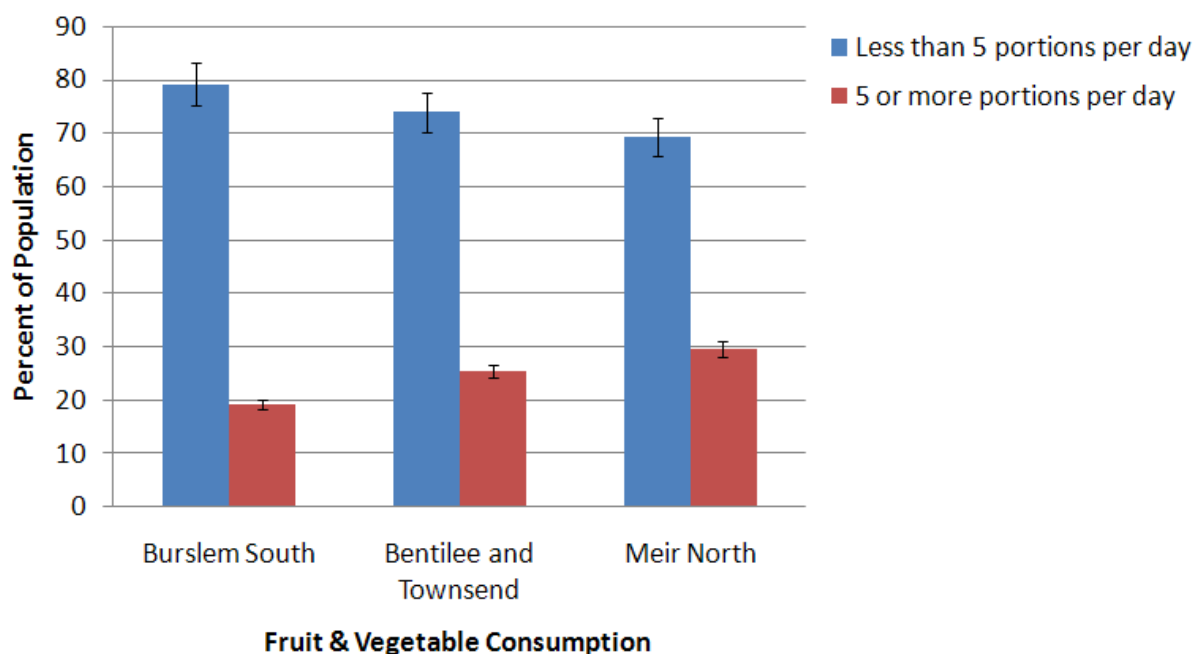
Physical Activity (IPAQ): Physical activity was dominated by work-related activity. Active transport or leisure time activity accounted for very low contributions to total, weekly, physical activity. Female respondents took part in more garden and domestic related activity over the week when compared to males. Over the week, respondents took part in no vigorous physical activity (median score), with moderate activity accounting for the highest contribution of MET minutes / week. Approximately 30% (Bentilee and Townsend), 33% (Burslem South) and 25% (Meir North) of respondents were moderately active, i.e. engaging in five or more days of moderate intensity activity of at least 30 minutes per day.

Figure 3 – A graph to show the relative contribution to physical activity domains to weekly physical activity.



Healthy Eating: Only one-quarter of respondents in Bentilee and Townsend were eating the recommended daily fruit and vegetable intake. Similarly only 20% (Burslem South) and 33% (Meir North) of respondents were eating the recommended daily fruit and vegetable intake.

Figure 4 – A graph to show the fruit and vegetable consumption of residents in Burslem South, Bentilee and Townsend and Meir North



Phase II: Community Consultation

The aim of Phase II of the ‘My Health Matters’ project is to develop effective partnership between Staffordshire University, key professional stakeholders in health and the community in order to design neighbourhood interventions and to engage local community residents through community health forums designed to strengthen community involvement and participation.

In order to strengthen community involvement and to collect information from community members a number of methodologies are currently being employed. This section will introduce the use of Geographic Information Systems for Participation (GIS-

P) within the 'My Health Matters' project. GIS-P is designed to gather local knowledge about environmental and developmental issues and to feed this into the policy and planning process. GIS-P can examine the similarities and differences between the expert evidence-based and the local experience-based data. This methodology involves the use of maps as a means of engagement and communication and local people are encouraged to 'frame' issues in their own terms allowing them to demonstrate their experiential lay knowledge of an area.



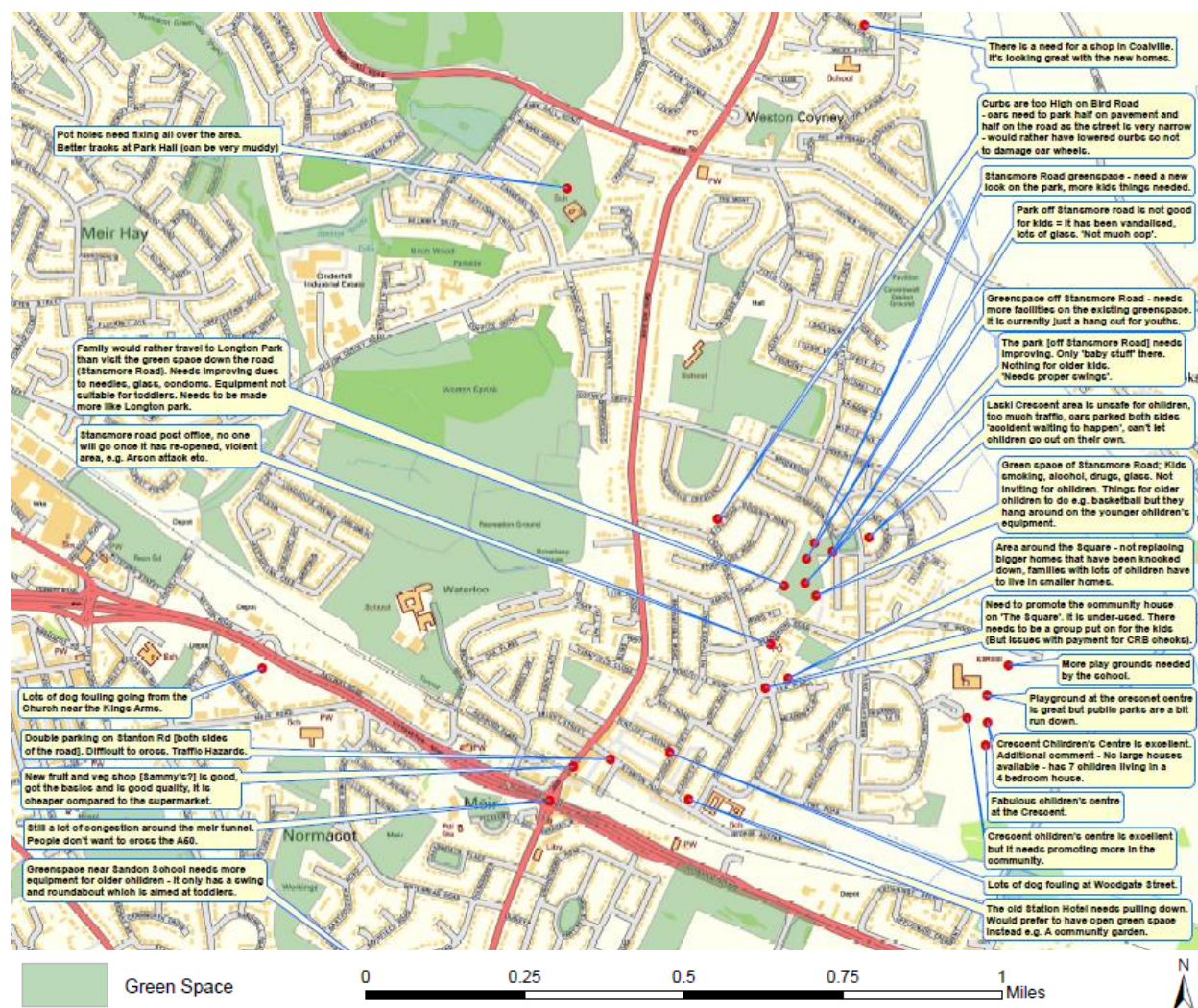
Figure 5 – A picture illustrating the use of mapping materials in engaging the community in the consultation process.

Community members are invited to write down any issues or comments relating to their neighbourhood and to mark on the map the location of the particular issue or comment.

Information gathered is then digitised to form a visual representation of the issues identified by community members relative to a particular locality. The digital nature of the GIS-P data also means that information obtained from specific types of participants can be extracted for assessment in isolation or used to compare specific group's perceptions with those of another. For example, the perceptions of different age groups of people about a particular neighbourhood can be compared. An example of the output of a community consultation using GIS-P is provided overleaf (figure 6).

The use of GIS-P also focuses on the transfer of knowledge from citizen participants to planners, policy makers or other professionals. Therefore, in the 'My Health Matters' project all data collected will be used to inform programme development and policy decision making.

Figure 6 – An example of a mapping output for from a community event



Achievements;

The project is piloting a bottom-up approach to tackling environmental impacts on health. The project is monitored by high level partnerships within the City.

Achievements include relationship and capacity building between statutory and voluntary sectors to deliver work relating to the social determinants of health.

The project has provided a local evidence-base which has been used to support the development of a hot-food take-away supplementary planning document for the City.

Lessons to be taken from this project so far are directed at the level of commissioning for community development outcomes and the need for a systematic approach in the collection of data relating to the needs and outcomes of a population.

The results of the baseline GIS mapping and community survey have been used to form the following recommendations for community consultation and action;

1. Taking a transformative approach - targeted local area programmes involving the community which address specific problems identified in each of the three areas (Burslem South, Bentilee/Townsend and Meir North).
2. Raise the profile of the “My Health Matters” project and actively engage key community members in project development and implementation.
3. Offer training opportunities for local residents/volunteers in community consultation, design and delivery of identified interventions.
4. Develop areas of local green space improving quality, functionality and implement low cost interventions that reach a large number of the target populations.
5. Identify green spaces that can be used for community gardens/allotments.
6. Explore opportunities for community collectives and social enterprise around local “mobile markets” for fresh fruit and vegetables.
7. Optimise use of local physical activity facilities by providing appropriate activities, advertising widely and utilizing church halls, community venues, libraries, school facilities (out of school time and in school holidays).
8. Raise levels of awareness of existing physical activity classes/groups running in the area and develop capacity to increase the number and range of activities provided.

9. Local supervision: target crime prevention and street security – community policing and increase opportunities for organized Youth Activities/Groups.

Lobby for traffic calming measures and speed enforcements on key roads.

Conclusion

Results from phase I and II identified recommendations for action. In addition, the following directions for policy change were identified from Phase I of the project;

1. Local government and business can partner to sponsor clean up and maintenance of parks, greenspace.
2. Local procurement – work with local shops and cafes (and subsidies rent/tax) in the provision of fresh food produce such as fruit and vegetables.
3. Policy-makers to engage in public-private partnership with developers to identify areas of land to be developed for small scale grocery retail.
4. Offer incentives to local stores that sell fresh produce – fruit and vegetables.
5. Government officials can provide guidance and technical support in helping to establish social enterprise schemes such as door-to-door fruit/vegetable delivery, “grow your own”, “garden-to-home” schemes, cafes and “soup kitchens” linked to the growing of local produce.
6. Develop a pedestrian and bicycle master plan that assesses the environment for pedestrians/cyclists and provides infrastructure improvements to enhance safety and walkability.
7. Local planners to identify the balance of green grocery stores and take away fast food outlets – use zoning policies to ensure that the density of fast food outlets is limited.

8. Create public-private partnership with local gyms, leisure centres to provide greater access to facilities at lower costs.

9. Develop joint-use agreements of local venues such as community centres, public places, schools for use of facilities after school hours and in school holidays.

The next phase will identify, prioritise and design intervention(s) related to specific health disparities (and their relevant determinants and mediators) based on partnership consensus.

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