European Commission

Health Equity Pilot Project (HEPP)

Walkability in Kraków

Case Study

Health

HEPP CASE STUDY

Title of Project/Policy
Walkability in Kraków

Project/Policy Reference [If applicable]
Transport Policy

Country
Kraków, Poland

Name of Organisation(s)
Multiple organisations and citizens of Kraków have been involved in developing the local transport policy, in particular the following agencies have been involved:

- Kraków Road and Transport Authority
- the Municipality of Kraków, the City Council
- University of Technology Kraków
- local public transport company (MPK)
- local road authorities – Zarzad Infrastruktury Komunalnej i Transportu (ZIKiT)
- Voluntary and third sector organisations
- Mobility Forum including citizens of Kraków

Type of case study
Prospective good practice

Thematic/sector focus
Physical activity: walking

Date(s)
This case study covers policies and aspirations of Kraków for a sustainable master plan for the city within transport policy dated 1993 to current day. This case study was written July-December 2017.

Case study overview

Kraków, the second largest city in Poland, is located in southern Poland and with ca. 760 000 inhabitants.

There is great interest in projects involving sustainability, innovation and mobility planning in Kraków, and this began with a Sustainable Transport Policy in 1993[1] (SUMP) and was fully updated and given renewed emphasis in 2007.

This case study covers the aims and aspirations of the city, as expressed through its new sustainable transport master plan for the city, with policies and projects that cover walkability, cycling and public transport. It's a prospective case study where changes have been implemented but formal evaluation is yet to take place.

This case study has been written with information gathered from literature searching, the University of Technology of Kraków and the City Council.

1. Theoretical model and evidence base

The promotion of active transport in Kraków is based on creating a city wide sustainable transport master plan (hereafter referred to as master plan), focussing on reducing traffic, noise, air pollution, improving public transport links, stations, car parks, encouraging car pooling/sharing and creating zones in the city where walking and cycling is actively encouraged. The vision is for an overall sustainable and innovative Kraków.

Evidence and limited funding comes from a variety of sources, EU funded projects, national frameworks, city-led initiatives (e.g. EU - SUMP[1], Caravel[2]). Very little evaluation on the impact of walkability has taken place, as implementation of new infrastructure has been slow and still being implemented. Where walkability has been measured, it has shown an increase where new infrastructure has been put in place, and in areas 'improving' as a consequence of more use by people[3]. There is also a lack of information around costs and potential calculations of cost-effectiveness after the implementation of the master plan, so we are unable to report on this. However, the first Polish evaluation of effect on income of owners of facilities in an area where restriction on traffic was implemented, shows no negative effects on income[3].

2. Relevance of active transport

A Eurobarometer survey[4] shows that the social and built environment, transport systems and urban design, as well as school and work environments can all contribute to either improve or exacerbate inequalities in physical activity levels.

Active transport, e.g. walking and cycling, has the potential to address many of the problems resulting from car-oriented urban transport, such as air pollution, noise and a general reduction of quality of life in neighbourhoods, as well as making the neighbourhoods both more liveable and providing easier opportunities for social contact. The beneficial effects of walking on the urban environment are

demonstrated by the social, environmental and economic vitality of cities which have chosen to focus their efforts on these transport modes, such as Copenhagen (Denmark), Groningen (Netherlands) or Bolzano (Italy).

Despite strong and extensive evidence for the benefits of regular physical activity, levels of physical activity are low across Poland and outside-of-work physical activity is much lower in intermediate and lower education populations than in those with tertiary education, though this is reversed for in-work physical activity.

In Kraków, car usage is high and growing mainly because people are moving away from the city centre to live outside in the suburbs, which means that travelling into the city is often done by car. Despite this, Kraków still demonstrates a very positive modal split with approx. 45% of journeys being made by public transport (trams and buses[5]).

However, city growth, increasing vehicle numbers, the desire for greater mobility and years of neglecting road maintenance have made road infrastructure and public transport the most challenging policy areas in Kraków. Cycle usage is currently relatively low, accounting for some 4% of journeys, so the major concentration is in improving walkability. One of the catalysts for the current concentration on walking was the Walk21 conference in Hong Kong in 2016.

The focus of the Kraków master plan is in improving access to public transport, with new stations and access to stations for users, and traffic reducing schemes decreasing on-street car parking and zoning many areas to non-resident traffic, so that the inner centre has less traffic, encouraging walking and cycling.

Significance in reducing inequalities

There is significant potential in reducing socio-economic inequalities as increasing walkability improves mobility for people without access to a car (or public transport) and potentially could reduce road traffic casualties. Kraków in particular has safety as a priority in developing the master plan.

There are additional benefits to implementing a master plan for the city, in reduction of noise and air pollution, as well as improvements in urban scape, carbon reduction, mental health and wellbeing and potentially increasing the opportunities for tourism and increasing the spend of shoppers in particular in Zone A of the city where only walking and cycling is allowed.

Where safer road crossings have been implemented, new station infrastructure and pedestrian bridges built, it has been reported that there are significant improvements to the safety of people walking to and from places of work, shops and services.

A particular feature of the evidence sourced for this case study is that it mentions the involvement of the voluntary sector groups, e.g. blind and disability groups; elderly people; and young people in using public transport and being trained in assisting others in crossing road and getting to public transport stations.

Our key informant, Lukasz Franek, has indicated that Kraków does not have highly differentiated suburbs, so that it is not possible to differentiate poorer communities and explore in detail the impact. There is however a focus on improving public transport and active travel which are likely to benefit poorer communities rather than car owning richer individuals. The mobility plans actively explore barriers for older people and disabled, blind and partially sighted people which address another dimension of inequality.

3. Intervention characteristics

Kraków was the first city in Poland to adopt a sustainable transport policy in 1993 and implemented a series of programmes and measures that referred to the use of space and the availability for different transport modes: pedestrian zones and zones with limited access for cars have been introduced and the infrastructure and public transport fleets have been modernised. In 2007 this 'Transport Master Plan' was updated, with a commitment to control traffic and exclude it from the inner city centre. Initiatives since 2016 have sought to actively improve opportunities for sustainable travel (public transport, walking and cycling) The political driver is the Lord Mayor and Deputy Mayor's office with support of researchers at the University of Technology of Kraków, who are involved in developing the city's transport plan, 'The Integrated Plan of Development of Public Transport for Kraków[6,7].

There are several significant barriers[8] to encouraging walkability in Poland as a whole. Spatial planning and transport system development departments often work in isolation and decision-makers are investing in large scale road investment projects, not taking into consideration the side effects of growing car dependence in cities, which are less resilient to challenges such as an aging population, social exclusion and health problems resulting from the proliferation of sedentary life style. Cyclists and pedestrian' interests are usually not taken into consideration in transport planning and there is a high incidence of accidents across Poland as a whole. Cyclists and pedestrians are

considered as the basis for the need of 'educating the pedestrians and cyclists' instead of trying to introduce motorised traffic calming or reduction measures.

Spatial planning legislation post independence changed the law in favour of the developers, and at the time was very pro-car. There is currently no possibility to insist on public transport infrastructure in new developments. Public transport is solely a municipal responsibility and is always 2 to 3 years behind new developments, e.g. bringing bus stops, tram ways nearer etc. While municipal authorities can insist on new roads being built in new developments, they cannot insist on new bus stops, tram ways etc.

The new master plan of Kraków from 2007{Office of the City of Krakow, 2011 #6} includes desires to reduce congestion, save energy and make the city a safer place for pedestrians and city traffic. The principal driver however was air pollution, with reducing car use and thus improving air quality being the principle rationale for encouraging walking and reducing car journeys. Coal use as a fuel is being phased out, and motor vehicles are the second largest cause for the air pollution. Kraków has high levels of air pollution[9]. In addition there are perceived benefits in terms of improved liveability, continuing to foster Kraków as a major tourist destination, and possible increases in shopping footfall and spend particularly in the city centre. This presents an opportunity to encourage walkability, but another barrier that exists is the slow implementation process of new transport policies and infrastructure[2]. Nevertheless, there is commitment from the City Council's office to improve safety for pedestrians and cyclists. Also, the National Urban Policy[10] in Poland includes spatial planning creating new public transport corridors, and influencing change in travel behaviour, as well as shaping urban space with pedestrian and cycling opportunities and relevant facilities.

Kraków's inner city is made up of: 27.3% green space, 27.4% pavements, 27.5% roads, 10.5% of parking spaces and 6.2% public squares[11]. Some of the streets are not considered walkable due to on-street parking, but nevertheless are used by pedestrians[11]. The amount of green space is less than that of other Polish cities, but by introducing infrastructure such as green space, seating, recycling areas, public toilets, shops, services and public art, space would be more walkable in Kraków[4].

A number of other projects in the city are developing programmes that include improvements to walkability in Kraków.

In Project Caravel, a Civitas project[12], the city outlined its comprehensive traffic restraint scheme in the city centre, by dividing up the city into A, B and C Zones. Each zone has its own set of traffic rules, restricting traffic or improving transport. The A zone is only for pedestrians and cyclists and the B zone is a limited traffic zone (only for inhabitants and goods deliveries).

CIVINET 2020[13] which was established internationally in 2013 is a group of city networks that promote the CIVITAS approach at a local level, overcoming language and contextual barriers for local authorities and organisations interested in urban sustainable mobility. Members exchange information[14] in their own language working together to engage with the European Union and national governments, about transport policy issues, legislation, regulations, and funding.

In the CH4LLENGE project[15] (2013-16), Kraków aimed to learn more about sustainable urban mobility planning (SUMP) from the project's Optimising Cities and share their experiences with the other Advancing Cities. Kraków has implemented a number of pilot schemes and evaluation of these to gather reliable information at reasonable cost. Although the SUMP does not include walking as a main objective or evaluation area, active transport (cycling and walking) is a complementary benefit when planning urban mobility.

Caravel[2] was very useful as it enabled experimentation with soft measures like car sharing, public bikes, and on-demand buses. The project gave Krakow a budget to test innovation and to pilot new ideas. It had a strong impact on behaviours, and enabled citizens to see a range of different solutions to address their transport needs, and address air quality, traffic accidents, and a range of transport related issues.

An aspiration of the City Council's office is to bring Walk21[16] to Kraków. Walk21 has played a valuable part in the promotion of walking internationally, showcasing cities, publishing best practice and developing new initiatives and partnerships. In Kraków, Walk21 would serve well in encouraging the recognition and promotion of walking as an environmentally efficient and healthy mode of transport. It could also help integrate walking into the master policy.

The current attempts to increase walkability are three fold:

1. To reduce the on-street parking by 15% which will both decrease car journeys (switching them to the enhanced public transport), and improve the walkability of the pavements as they are not blocked by cars.

2. Restricting vehicle access – the City Centre only allows access to inhabitants on the side streets, and speeds are restricted in those areas to 20 kmph. Two further areas are following this model of traffic restrictions away from major arterial roads
3. Optimising public transport by introducing more trams and buses.

Methodology for the case study

The case study is based primarily on document analysis. Key documents were identified through snowballing (identifying new respondents from initial respondents) through contacts in the City Council's office, in particular the Transport department, and researchers at the University of Technology in Kraków, and a literature review of available published and grey literature on walkability in Kraków.

A limitation of this approach is that much of the material found is grey (non-peer reviewed literature in print and electronic formats, but which is not controlled by commercial publishers, e.g. presentations, reports, and email conversations) and lacks formal peer-review. The City Council's office in Kraków was asked to comment on the initial draft of this case study, comments which have been incorporated.

Results and key findings

There needs to be more data collection and measurement in place on walking to determine usage, need and outcomes. We found little evidence of evaluation plans in place, in particular around walking and the effect of transport policies on inequalities.

Most of the transport improvement projects show benefits in increased mobility in certain population groups, the elderly and disabled people and those with reduced mobility and young people. There are claims within the evidence found for this case study of increased walkability around new infrastructure, such as foot bridges, by new transport stations and crossroads. Projects demonstrate involvement of population groups in decision-making around transport and development in Kraków. Reports also claim evidence of reduced accidents of cyclists and pedestrians. However, we lack data confirming these claims in particular, as little formal evaluation is taking place.

Through snowballing we were told that some of the issues remain in the methodology of measuring walking in Kraków. For example around how to count pedestrians and what they use the streets for, e.g. shopping or transit. Evaluation have been planned from autumn 2017, of which an initial evaluation on traffic restrictions and car parks was undertaken. A

very recent first evaluation in Poland on traffic restriction and removal of car parks have reported acceptance by the public and facility owners to changes in accessing the areas[3]. They report high satisfaction on a reduction of traffic, improved structural landscaping and atmosphere of those areas and increased walking to those areas or use of public transport.

In the Caravel, Civitas project, modelling and measurements have taken place, mainly around speed, noise, air pollution, traffic and parking[12].

The Mobility Forum evaluates itself through easily verified process targets, such as holding events each year, continuing the high-level political support and good public image. There are additionally some training activities which all are about awareness raising.

We found evidence of increased walkability as a result of the new master plan, and the city's investment in infrastructure and roads. Below are some examples of where walkability is shown to have increased:

Training and assistance to older people[17]:
Significant investment has been made around providing assistance and training to older people in Kraków in using public transport and using key stations. In particular senior citizens are included as a key target group in plans and policies. In Kraków most of the tram stops in the city centre are located in a way that passengers are required to cross busy roads in order to access the tram services. This creates an uncomfortable situation for many tram users, especially for older and mobility restricted people, and in some cases has led to traffic accidents. Young people have been recruited and trained to provide assistance at stations and two people are available at most inner city stations to provide physical assistance to the elderly and disabled.

Implementing sustainable mobility[18]
The city's inner ring road, with its on-street bus and tram stops were not safe or comfortable for passengers, especially older people and those with reduced mobility. These stops were reconstructed as combined bus and tram stops and new audio and visual information displays were installed, providing passengers with real-time travel information. Two 'model' stops were created for Lubicz and Rakowicka streets. They also tested new compressed natural gas (CNG) buses on these two lines to link the transport service with the inner city. This created a clean, high mobility corridor, and improved accessibility and safety of the public transport system.

New footbridge[19] in Kazimierz:
In 2010 a new footbridge was opened in Kazimierz in Kraków, greatly increasing convenience for cyclists and people with disabilities. Kazimierz was characterized by difficult access especially for people with disabilities, who had to rely on their own cars to cross the river and cyclists. Pedestrians are now completely separated from cyclists, which has improved safety for both groups. Both ends of the bridge have been adapted to the needs of wheelchair users with gently sloping ramps directly from the pavements. Internal evaluations show that there is an increase in pedestrians using the bridge and area, including tourists, and that there are less accidents involving cyclists on the bridge, however we did not have access to the data to confirm this.

New footbridge[20] Vistula River:
In 2008 a new footbridge was built over the Vistula River in Kraków running parallel to a bridge carrying dense car traffic within a ring-road of the city. The new bridge separates walkers and cyclists from motorised transport and, thereby secures greater comfort for non-motorised travellers. The bridge merges two popular cycling and walking routes into one, the so-called 'Route Tyniecka'. The routes are of a very high aesthetic value with its many cultural and historical attractions. The new construction ensures greater safety for cyclists and pedestrians who previously illegally used a maintenance footpath on the motorway bridge. The route has become one of the most popular and scenic recreation trails in Kraków, attracting runners, cyclists, walkers and skaters - and even skiers in the winter.

Improving the environment for pedestrians[21]:
The main objective was to improve the environment for pedestrians who move through the city on foot. These changes encourage older people to use public transport more, reducing private car trips and road accidents involving old people and blind people. The key partners of this activity are the local public transport company (MPK), the Municipality of Kraków, the City Council and local road authorities (ZDiT and KZK, now called ZIKiT (Zarzad Infrastruktury Komunalnej i Transportu –Management of Community Transport Infrastructure)). The most important focus groups were retired, older, blind and visually impaired people, but the activity has had a good influence on the other passengers' travelling conditions as well.

The following actions have been taken:

- Sound or voice information concerning traffic lights has been installed at the main crossroads, particularly at those with public transport stops and lines. It helps older people to better recognise

the current situation at the crossroads which are difficult points in their pedestrian trips.
- Some of the kerbs at crossroads were lowered and at the biggest multilevel crossroads, lifts were installed.
- On some pavements, special lines have been built in that allows blind people to feel when they approach the crossroads.
- The forthcoming reduction in on-street parking by 15% is likely to have a significant impact both on car journeys, and on the walkability of the narrow streets of Krakow.

The Mobility Forum[22]

Citizens of Kraków are involved in providing feedback through the Mobility Forum led by the Mayor of Kraków. The forum founded through the Civitas-Caravel EU initiative[2] in 2007 aims to improve the involvement of the public and important stakeholders in the decision-making process of transport planning activities. It includes the following groups: municipality departments, public transport companies, associations of public transport passengers and bicycle users, quarter councillors, shopkeepers associations. The Mobility Forum will meet at least twice a year and publishes the outcomes of each meeting.

New ideas are discussed through traditional print media and social media[23], and this helps to communicate actions (e.g. altering zebra crossings on dual carriageways due to high-rate of accidents).

This case study shows that involving the local population in plans and policies, and in this case in developing transport, has had reported positive benefits to many population groups. In particular we find that senior citizens and young people are included as a key target groups.

There is evidence of reducing inequalities by promoting the use of public transport to all and reduce the reliance on cars in the overall master plan.

The results of including the local population in decision-making, and the subsequent improvement to transport, roads, footpaths, bridges has benefitted local areas as well as people. There is evidence of areas becoming more aesthetically pleasing due to urban improvements, encouraging physical activity as they become increasingly popular for scenic routes, walking and cycling.

There are co-benefits of social inclusion, improved air quality due to carbon reduction where public transport has been improved and removing cars from the city centre. Areas are safer with reports of less accidents with walkers and cyclists because of new footbridges, transport stops and crossroads. There are particular benefits of

increased mobility in certain population groups, the elderly and disabled, those with reduced mobility and young people.

However, we couldn't find any evidence of formal evaluations that included equity, or looking at health and wellbeing benefits, or cost-effectiveness, and we relied on reported benefits listed in documents. One recent evaluation shows that owners of facilities in areas where car access changes have been made, have not made economic losses due to loss of parking facilities[3].

This case study has demonstrated the involvement of population groups in decision-making around transport and development in Kraków. Feedback from the public is encouraged through the Mobility Forum led by the Mayor of Kraków, which began in 2007[2] with the aim to improve the involvement of the public and important stakeholders in the decision-making process of transport planning activities. New ideas are also discussed through traditional print media and social media[4Error! Bookmark not defined.], and this helps to communicate actions. There is evidence of population groups being involved in the dissemination of information and training activities locally, e.g. young people's involvement in helping the elderly use transport.

Multiple organisations and citizens of Kraków have been involved in developing the local transport policy, e.g. the Road and Transport Authority, the Municipality of Kraków (City Council), the University of Technology Kraków, local transport companies, road authorities, voluntary and third sector organisations and forums that include citizens of Kraków.

A number of lessons learned can be identified:

- The evidence that has been gathered shows that by improving public transport and the road infrastructure in the city, it has had a positive impact on local area and made it more appealing for walking and cycling. Our key informant agreed that formal evaluation could have been implemented as part of the introduction of the transport policy to gather data to confirm benefits reported. Although evidence from other places show that cross agency working and involving citizens makes it quite possible to increase walkability of a city.
- Tackling several issues simultaneously, public transport at the same time as decreasing motor vehicle access to the city, has decreased some of the issues of access which may have arisen, e.g. less accessibility to certain population groups who rely on car transport, or increased traffic in other areas of the city. The city

also linked the new master plan to air pollution reduction and sustainability plans for the city.
- Cross-collaboration between agencies, across sectors, have delivered health outcomes, e.g. increased mobility, accessibility, increased physical activity and transformation of neighbourhoods into healthier spaces with reduced air pollution due to the removal of cars.

Timeliness / Interest from Member State / Interest from other Member States

This type of approach brings many other co-benefits such as social inclusion; air quality and reducing road traffic casualties alongside increased physical activity, as well as improvements in urban scape, carbon reduction, mental health and wellbeing.

What makes this case study interesting/important?

We know that '*a focus on creating high quality physical environments, …. and the development of infrastructure that prioritises walking and cycling over motorised transport helps increase physical activity without increasing health inequalities' (*HEPP scientific review of the impact of interventions and policies on SES differentials in physical activity*)*.This case study shows that by introducing a master plan and working across agencies and with citizens, it is quite possible to increase walkability of a city. The framing used was to address air pollution, and to make the city more sustainable. A focus on improving public transport at the same time as decreasing motor vehicle access to the city, has decreased some of the issues of access which may have arisen. The evidence found for this case study Kraków show an increase in walking, by citizens and tourists, and that in spatial planning and new infrastructure you can make a place more appealing for walking and cycling. However, it also highlights the importance for evaluation plans of transport policies.

Generalisability

Walking is an accessible mode of transport/travel and this type of approach practically tackles the issue 'upstream'.

We know from the HEPP scientific literature review into inequalities in physical activity that there is some association between active transport physical activity and social economic position (SEP), but there were no clear differences by gender, SEP indicator, or geographic region.

We have many examples from other cities and countries which have implemented similar measures to Kraków around improving safety for

cyclists and pedestrians, tackling air pollution and traffic congestion and have done so by redesigning pavements, cross-roads, installing cycling lanes etc. These examples show cross collaboration with other agencies, including public health agencies, with expected health outcomes.

The evidence in other places show that increasing mobility in low income communities, by creating walkable communities, offer citizens the ability to access homes, jobs, retail, recreation without relying on cars. Improving transport infrastructure shapes the built environment so that there is an increase in physical activity and this transforms neighbourhoods into healthier spaces. There is also evidence that by creating active transport cities will increase the number of women walking and cycling, with the potential of reducing gender inequalities.

Kraków has gone some way towards reducing inequalities by promoting the use of public transport to all, to reduce car ownership, as part of an overall city sustainable transport master plan. However it remains that measuring the social landscape around physical activity, and in particular active transport, is complex.

Sustainability

This case study shows a city's commitment to sustainability through the new transport policies and projects around traffic calming, car pooling, bicycle parking, walkable areas and improved public transport. There has been clear and sustained political support from 1993 onwards for sustainable transport, and support from both the public and the media.

Transferability to other countries

This case study shows that you need commitment from authorities, e.g. transport ministry, the mayor's office in ensuring that policies are implemented and momentum maintained in the long term.

The involvement of citizens and voluntary groups in local plans is important for buy in and ensuring local needs are met.

Cross sector and agency working contributes greatly to developing plans, implementation, promotion and evaluation.

There is a need to implement evaluation plans for measuring 'walkability' in cities and in investigating walkability's effect on inequalities.

Once evaluations have taken place, we recommend that this case study is updated with any data, new evidence and recommendations based on those evaluations.

Next steps/recommendations

To follow up with the municipality and university researchers in due course to collect data of the evaluation efforts around the master plan.

To encourage Kraków to implement evaluation programmes and data collection to share.

To compare the health outcomes in Kraków with those of other cities that have implemented similar policies.

Long-term to monitor effect of master plan on health inequalities.

Initial conclusion

This is a good example of where a city transport policy, a master plan, has had a wider implication for a city to improve active travel, support disabled, less mobile and older citizens, and link with other policies around air pollution, noise reduction, spatial planning, urbanisation and city regeneration.

However, the implementation of evaluation programmes would enable us to make better judgement on reduced inequalities and increased walkability.

Sources of funding/sponsors for project/policy

The master plan was funded by the city council with support from EU funding in other various projects.

References/Studies/Respondents

This case study has been drafted by Dr Helena Korjonen, and Chris Brookes for the UK Health Forum. Helena has worked as an information professional within health and care for 18 years. She has experience of undertaking complex literature reviews in public health. Chris has over 20 years working at a senior level in Public Health.

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