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Experiences, Barriers and Facilitators to Walking as a form of Physical Activity among Residents of a Large Urban Area in Nepal: A Qualitative Study

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Abstract

Introduction

Walking is a common activity and an affordable form of exercise feasible for people of all ages and circumstances. Given the onslaught of non-communicable diseases, strategies to promote physical activity such as walking should be based on good quality evidence. This study explored the experiences, and the barriers and facilitators towards walking among urban residents.

Methods

An exploratory qualitative study method with one-to-one in-depth interviews were carried out with participants aged 22 to 80 of both sexes to explore the experiences, facilitators and barriers faced by participants.

Results

Participants had a positive attitude to walking and had incorporated it in their daily lives, but only few participants did it as an exercise. Role models, availability of public transport, negative reinforcement due to health condition, mental well-being, and walking being a social and enjoyable activity were the facilitators. Vehicle ownership, poor infrastructure, dangerous roads, social norms and stigma and lack of willpower were main barriers.

Conclusion

In order to promote walking as a form of physical activity the social aspects of walking such as walking as a form of socializing, taking measures to incorporate walking into people's daily lives or commute, and highlighting the mental health benefits of walking have to be carried out rather than promoting walking just as a form of physical activity.

Keywords: Barrier, Facilitator, Experience, Walking, Physical Activity, Urban

Introduction

Walking is a natural way of getting about and the commonest physical exercise. It is a simple and affordable form of exercise which is feasible for people of all ages, living in almost any habitable climate, and following any set of lifestyles or cultures. It requires little equipment and can form a part of day-to-day activity for people from almost all walks of life. Walking is feasible for everyone regardless of their level of physical fitness except for the very young, the frail, and those with serious health conditions or conditions that limit mobility. In short, walking is the nearly perfect form of physical exercise [1].

Walking offers numerous health benefits. As a form of aerobic exercise, it helps to prevent cardiovascular disease, obesity and diabetes [2]. The benefit of walking for ensuring mental well-being are also known [3]. Walking in the form of hiking in the countryside or wilderness, or even in the city-streets is also a pleasurable form of recreation and can be done alone or in groups and gives the opportunity to enjoy beautiful sights, adventure, company or conversation.

The increasing rates of chronic non-communicable diseases (NCDs) such as obesity, hypertension, diabetes which lead to diseases of the coronary arteries, stroke, and chronic kidney diseases are an important concern all over the world. Globally, 80% of the NCD deaths are due to cancers, cardiovascular diseases, chronic respiratory diseases and diabetes and the highest risk of dying from NCDs is observed in low-income and middle-income countries [4].

Although previously only noted as a problem of the industrialized economies, this is a problem now also seen amongst the developing countries. Increasing urbanization accompanied by unplanned urban spaces, mechanization and industrialization, change in the nature of work and occupations, and increased access to motorized transport all have a role to play in decreased physical activity which is an important risk factor for many chronic diseases.

Globally, 81% of adolescents and 27% of adults do not attain the recommended levels of physical activity leading to increased incidence of non-communicable diseases and this in-turn affects everyone from the individuals and their families including society and health services [5].

Walking briskly has been shown to play a role in decreasing obesity and hypertension, increasing high density lipoproteins, and when coupled with other physical activities, decreasing the risk of bone fracture [6]. Walking has also been linked to lower mortality from cardiovascular diseases and cancer. The simple act of walking has been linked to increased life expectancy and lowered medical expenditure [7].

In recent years urban spaces in Nepal have witnessed a massive growth and lots of people have migrated to the cities in search of employment or education. The public health community is greatly focused on the ways to increase physical activity in populations. The promotion of walking can form an important means of achieving physical activity goals [8]. A nationwide survey on the risk factors for NCDs revealed that low levels of physical activity was a common risk factor present in almost eight percent of the population [9].

Although the health benefits of physical activity and walking as an acceptable form of physical exercise are known, little research is done on how walking can be promoted and what are the facilitators and barriers to walking. Walking being the main mode of physical activity, there is a need to determine what are the facilitators and barriers to this mode of physical activity. There have been no studies carried out to explore the facilitators and barriers specifically to walking in urban spaces in Nepal, although there are studies which looked at overall barriers to different kinds of physical activities [10, 11]. Moreover, such studies have only targeted specific demographic groups in non-urban locations. Most of such studies use the technique of focus group and none have used direct one-to-one interviews where participants can freely related personal stories and experiences. Therefore, this exploratory qualitative study was done to understand the experiences, facilitators and barriers to walking among individuals dwelling in a large urban area.

Methods

This was an exploratory qualitative study. Qualitative studies completed by quantitative methods are said to be important for developing complex interventions because understanding the underlying processes is important [12]. If walking per se has to be implemented as a primary or secondary prevention intervention against chronic non-communicable conditions, the experiences of walkers in a city are important considerations. Hence the design of this study.

Participants were adults of all ages and genders who lived in the urban space in Kathmandu Valley. Participants were selected purposively. A diversity of participants were included in the study including those with NCDs such as diabetes, hypertension and chronic artery disease as well as healthy participants. Full-time employed professionals, part-time employed, retirees, as well as students were sought. The initially intended sample size was 12 based on the recommendation by Guest *et al* [13] that data saturation can be reached in 6-12 interviews. The focus of the qualitative interviews was narrow (walking) and all the participants were from the same, albeit large, urban area. Therefore it was expected that data saturation would be reached within this limit.

Grounded theory was employed to determine the underlying factors that motivate people to walk. For this purpose a wide range of participants were sought. The author, a male public health researcher, conducted all the interviews after introducing himself and his profession to the participants. Initially rapport building and explanation of the purpose of the interview including possible benefits to the participant was carried out. This was followed by request for time commitment which was then followed by permission to audio-record the interview. Informed consent was obtained from all the participants. The interviewer confessed their interest in the topic of the interview and expressed the desire to find ways to control non-communicable diseases. The in-depth interviews were centered around the participants experiences of walking, their attitudes to physical exercise and walking as an exercise form, their modes of daily activities like commuting and shopping, and the issues of perceived barriers and facilitators to walking as a form of exercise, walking for transportation and recreation and participation in lifestyle activities. The findings are reported adhering to the Consolidated Criteria for Reporting Qualitative Research Checklist [14].

Interviews were conducted in two formats. Direct face-to-face (5 interviews) in a quiet location, usually the participants home, or through an online meeting application (4 interviews). All interviews were conducted in the Nepali language. Interviews with the older participants (the retirees) were all face-to-face and not online and conducted in the comfort of their home. All online interviews were conducted with the participant staying at their homes comfortably. Non-participants were not present at the time of the interviews. All interviews were digitally recorded, transcribed and translated into the English language from Nepali. At the time of interview note-taking was also carried out during the online interviews as videos were closed to ensure participant comfort. During one of the interviews a technical problem with recording was encountered in the initial part so note-taking was done. No note-taking was done in the in-person interviews. The interviews lasted from 25 mins to just over one hour. Since this was an initial exploratory study done as a preparation for a possible larger study, transcripts were not returned to the participants nor was member checking done.

Analysis was carried out following Braun and Clark's six steps of thematic analysis [15]. Familiarization with the data was carried out by reading and re-reading both the transcripts and translations to not lose the sense in translations. Textual data were arranged in the form of diagrams, they were then streamlined, summarized and coded into subthemes and subsequently themes. Some of the themes were generated beforehand while some of the themes emerged from the study. Data was analyzed manually as there were only a limited number of participants. Data are presented in the form of interpretations with illustrative quotes. Major themes were clearly presented and diverse cases or discussion of minor themes was also carried out.

Results

A total of 12 participants were approached for this interview and 9 consented to participate. Three participants also

consented but could not find enough time for the interviews. The list of participants is given in Table 1. Of the nine participants, three were female. The ages of the participants ranged from 22 to 80 years. Three had retired from government jobs while the rest were either actively working or college students. Of the three students, one held a part-time job. Five of the participants had some type of chronic non-communicable disease. One participant with osteoarthritis on both knees was almost fully confined inside of his home due to his knees and only occasionally went out.

Table 1: List of Participants

Participant	Age(years), Sex	Occupation	NCD Presence
1	48, female	Part-time job	Type II DM
2	79, male	Retired Govt Officer	Hypertension
3	80, male	Retired Govt Engineer	Type II DM, Osteoarthritis
4	22, male	Student, Bachelor level, IT	-
5	22, female	Student, Bachelor level, IT, part-time job	-
6	59 male	Retired Govt, High Level, Engineer	-
7	52, male	Scientist, Entrepreneur	Coronary Artery Disease
8	49, male	Self-employed Engineer	Hypercholesterolemia
9	21, female	Student, Bachelor level, Sciences	-

NCD non-communicable disease

Themes

Table 2: Lists the themes and associated subthemes

Themes	Subthemes
Experiences	Historical recall
	Daily activities
	Walking to work or school
	Walking as exercise
Facilitators	Role models
	Beneficial for the mind
	Walking as a way of socializing
	A form of enjoyment
	Negative reinforcement due to health condition
	Availability of public transport
	Footwear
Barriers	Weather
	Presence of danger due to vehicles
	Ownership of own vehicles
	Lack of public spaces or parks
	Poor quality of footpaths and streets
	Air pollution
	Clothing and sweating associated barriers
	Gender based harassment
	Social norms and stigma
	Lack of willpower

Experiences

Most of the participants expressed a positive attitude towards walking and expressed that they enjoyed the activity very much. The participants were aware of the need for physical activity and also used walking as a form of exercise. Although most of them did not walk specifically to exercise. Some participants said that walking should be a form of entertainment and is best enjoyed when there are social benefits like spending time with friends.

Historical recall

Older participants related their experience of walking when they were younger.

> 'I am originally from Pokhara(my hometown). When I was about twenty I walked to Butwal(another town) about 150 kilometers away on foot. It took three days. There was no option of roads back then. On the way back I also walked from Narayanghat to Pokhara through dense jungle which is a slightly longer distance.' (Participant2: 79yrs, male).

One participant who did not walk much currently recalled that it was amazing that he walked for about an hour to school when he was young.

> 'I used to walk to school and walk to visit my maternal uncles home just beyond Patan, Lalitpur from my home in Kathmandu. I stayed there. It was over an hour each way.' (Participant3: 80 year old, male).

Daily activities

Some participants reported that walking was one of their daily activities.

> 'I still walk 6-7 kilometers daily.' (Participant2:79yrs, male).

> 'I find time to walk daily in the morning except on the days when I feel a bit lazy.' (Participant1).

Walking to work or school

It was noted that there was no culture of commuting on foot for nearly all of the office goers included in this study. It was notable that those who worked in government jobs did not use walking as a form of exercise to go to work at all. Those who worked also did not think walking or using public transport was feasible as they had to visit multiple offices during the day and going from one place to another would not be feasible without private transport. Going from college to the part-time workplace or going from one office to another for meetings would not be feasible by walking.

> 'I was a team leader at my job. I had the facility of a vehicle from my office since the early part of my career. There is no question of walking when you have the facility of vehicle which comes to pick you up. In my initial days of my job as an engineer I used take the public bus but since I got promoted I had the facility of vehicle, so there is no question of walking when you have that facility.' (Participant3, retired government engineer, now working privately).

> 'It is unthinkable to go to office by walking, thinking it will serve my exercise needs.' (Participant6, retired govt worker).

> 'We need to go to multiple meetings on most of the days, it will not be possible on foot or on public transport. Therefore, I need to take my motorcycle to work. If I know I do not have a meeting on a given day I can walk to work as it is about 20-25 minutes away, or I can leave my bike at work and do the commute on foot. But I have not done that.' (Participant8, Self-employed engineer).

> 'I live very near to my college so I do not need to walk long to get there.' (Participant4).

However one of the participants who had his own private vehicle and ran his own company said that on the way back from his office which was about seven kilometers from his home, he got off at the halfway mark and walked for about an hour or more through various routes each day to complement other forms of exercise that he did at home.

> 'My office hours are 10-5 and, on the way, back home, I have time for myself in the evenings, I walk through various routes after getting off at about the halfway mark. I have a driver who brings the car back home. I like to observe what the crowds of people are doing, I look at the types of people on the street and look at the views in the city. It also helps to refresh and entertain my mind.' (Participant7, scientist, entrepreneur).

The fact that children do not have to walk at all on the way to school was noted by the same participant and a cultural shift back to the old ways may be necessary.

> 'School children should be taught about walking.' (Participant7).

Walking as exercise

In addition most of the participants did not walk just for the sake of exercise, they had other exercise that they did although they also walked. Or the walking that they did served other purposes than exercise. The group of college students probably had a greater capacity to exercise than just walking.

> 'Three-four times a week I do exercise at home, stretching and some running outside. When I have not walked that is the way I get exercise.' (Participant5).

> 'I feel walking doesn't fulfill my exercise needs, I'd rather get back from college on the bus and use that saved time to do my exercise at home like HIIT(High Intensity Interval Training) and weight training with small weights like water bottles at home, than walk back from college.' (Participant9).

> 'I feel walking is not enough as an exercise form for me. One needs also to do strengthening with weights and stretching.' (Participant7).

> 'I play badminton almost daily and walk for grocery shopping, that gives me enough exercise. I use my motorcycle for travel elsewhere.' (Participant6).

> 'I go for a walk almost daily but other than that I do not do much exercise. Once in a while we play futsal. In my village we used to running in the morning with my running group.' (Participant4).

An interesting finding was that a participant said that when they have not walked they feel like they haven't obtained enough exercise. Young people in this study generally were very positive about walking as an exercise form although they did not consider it sufficient exercise.

Facilitators

Many facilitators to walking as a form of exercise were identified. Public health messages explaining the need to walk was not though of being of much benefit, rather social norms and pressures and friends and family members telling people to walk was perceived to be more effective.

Role Models

Some of the participants, particularly the older ones, cites examples of role models in society who walk around every day and related that their walking must have been the reason behind their survival and quality of life in old age. They even cited examples of such old people.

> An uncle of mine who is 92 years old walks a few kilometers from his home to the big temple (Pashupatinath) every afternoon. I think that is the reason for his good health.' (Participant 2, 79y, male, Retired Govt Officer).

> I know a 90 year old relative who walks for two hours every day. Even when he comes to visit me he takes the public transport and then walks from the bus station to our home.' (Participant 3, 80y, male, retired govt engineer).

One participant said that role models could play a role even for family members to promote walking, while the older participants cited examples of older people in their nineties who had maintained their health through their daily walking habit.

> 'Family members say that if even someone who is so educated is walking then it must be beneficial for health.' (Participant7, scientist, entrepreneur).

Beneficial for the mind

Participants consistently reported that walking has many mental health benefits. Many participants, including the young participants in their twenties, who were all students, said that walking benefited their mental health greatly, helped relieved stress and worry about work and freed the mind from thinking about many things.

This was more of a motivating factor for walking and participants implied that such walking could serve as a kind of medicine. Participants who used several modes of travel for their daily commute to college could compare and contrast the effect of walking with other modes of transport.

> 'Compared to the scooter, when I go home on foot I am tired, so it helps to relax my mind. But on the scooter, I keep on thinking so many things. When I go

to college by walking I feel more alert in class, when I take the bus I am more dull.' (Participant5, 22yr female Bachelor student, IT).

'I walk more to refresh my mind rather than a form of physical activity. After several hours of studying my mind is quite tired, then I go out for a walk with a friend for about 45 mins and it refreshes me.' (Participant4).
'I feel that one should walk quickly for about 45 minutes to refresh your mind. Walking for a shorter time won't work' (Participant1).

'I have also used the treadmill at home. In the treadmill after getting used to balancing in the first few instances, I keep thinking about work or other things, whereas while walking there are a lot of distractions to keep my mind away from worries. I can go and figure out why a crowd is gathered somewhere or look at other interesting things in the street. Thus, I have no worrisome thoughts. I think the mind refreshment part of walking is more due to the other distractions rather than the exercise itself.' (Participant7, Scientist Entrepreneur).

Walking as a way of socializing
The presence of friends and acquaintances with whom one could walk. Thus, rather than walking being solely a form of exercise it was seen by participants to be also a form of socializing or even carrying out important official conversations.

'Rather than walking for the sake of it, if I had a friend we could motivate each other and walk while having a conversation, that way it would be fun. We could say let's go there on foot. We could go somewhere with office colleagues and have our conversation (meeting) while walking to somewhere.' (Participant6).

'I have a friend from college and we go for a casual walk almost every evening. Although I do not intend it to be a vigorous form of exercise it benefits me greatly.' (Participant4).

A form of enjoyment
Many participants cited walking as a form of enjoyment and socializing. This theme cross-cut with other themes on the benefit of walking on mental health and relaxation and a way to divert the mind from day-to-day cares and concerns.

'I enjoy it more when I go to college which is a distance of four kilometers from my home rather than go on a bus. I have to start about 20 minutes earlier for that but I have done it.' (Participant5).

Negative reinforcement due to health condition
One participant shared his observation that people hardly walk for fitness or health benefits before disease strikes. Most of the walkers in the morning do so because they do not want their health condition to worsen after something had been discovered such as increased glucose levels or hypertension. Thus, it was a form of secondary prevention. This was also reported by some of the participants.

'I am a diabetic so I am conscious of the need to walk.' (Participant1).

'After I received triple vessel angioplasty (for coronary artery disease) about four years ago, I have incorporated aerobic activity in the form of walking. Before that I only did strength training.' (Participant7).
'When I go out in the morning it is easy to tell that most of the people walking are doing so after they have had a certain condition. You do not see that many fit and young people doing morning walk as exercise.' (Participant6).

"Walking has to be a part of daily life. You cannot tell people: 'walk or you will die'." (Participant8).

Availability of Public Transport
Although this was not identified as a facilitator by the participants, it can be induced that many of the participants used public transport to go to school or work. They often reported walking one way, or getting off a few stops ahead when journeys were long and could not be entirely completed on foot. The simple act of walking one or two kilometers to and from the bus stops to their destination also helped add up the distance walked. Thus public transport served as a facilitator to walking.

'Sometimes I go to college on the bus when I am in a hurry and get back on foot. Whereas if I take the scooter I will not have that option.' (Participant5).

'I need to walk a kilometer to reach the bus and when I get off it, I have to walk a similar distance to reach my college. So, on a normal day even if I take the bus I end up walking three to four kilometers. If we make buses not-crowded in non-rush hours it will promote walking more.' (Participant9).

Footwear
Although not many participants admitted the role of footwear, when probed, some highlighted its role. Participants admitted that good footwear was not difficult to find in the market. But one of the participants highlighted the problem of duplicate goods in the market.

'Footwear is very important. Now there are very good brands available too. There are shoes which can be used for walking and also walking shoes of various designs which you can wear for official dresses. One should not try to save money when it comes to footwear. Rather, they should save money on other stuff and prioritize footwear.' (Participant1, 48 year female, diabetic).

'In colleges where the uniform is compulsory, the dress shoes do not allow walking well. These shoes easily hurt the foot.' (Participant4, Bachelor level student, IT).

'I wear sport shoes to college. Those are easy to walk on. It is not difficult to find good quality shoes in the market.' (Participant5, Female).

> 'Wearing the uniform and the formal shoes to the offices where I worked before also mean that walking becomes almost impossible.' (Participant6, retired government engineer).

> 'You get the same stuff for a range of prices, it is difficult to tell which is genuine and which is not. Maybe due to the poor condition of the streets my shoes get damaged very quickly.' (Participant9).

Barriers

Weather

Weather was identified as a barrier by several participants. Even in the city of Kathmandu the rainy season with torrential downpours could be a barrier to walking. The effect of such rains could also be linked with the infrastructure. Inclement weather was also identified as a barrier by one of the participants who thought that other barriers were just excuses.

> 'During the rains when we walk on the footpaths water from the rooftops pours directly over us.' (Participant1).

> 'When it rains you need the treadmill.' (Participant7).

Presence of danger due to vehicles

The danger posed by vehicle and lack of safe streets were reported by most of the participants as barriers to walking but some of the participants said that is just an excuse, as such dangers are not stopping us from doing other activities. Some participants also reported that if there was a will to walk there were ample inner streets which were relatively vehicle free. Provision of vehicle-free streets were also seen by some participants as a good option when probed and prompted. Participants also have the example of walkers who were grievously harmed or killed in accidents.

> 'I fear the vehicles on the streets. The vehicles are always in a hurry, including trucks and the water tankers, that makes it very unsafe.' (Participant7).

> 'People even ride or park motorbikes on the footpath. I fear that I will be hit by vehicles, I specially fear the trucks.' (Participant5).

> 'Cycles and buses are dangerous. Even the footpaths are not safe as the cycles and motorcycles even ride on the footpaths.' (Participant2).

Ownership of vehicle

Some of the participants reported that once they started owning a vehicle such as a scooter or motorbike their habits have changed. Vehicle ownership was seen as a barrier to walking in those participants who had a habit of walking previously. Personal transport led to very little walking compared to public transport which promoted it to some degree.

> 'I started riding the motorbike after retiring. I learned how to ride it and do so with passion. I have not thought of going somewhere on foot by leaving my motorcycle.' (Participant 6, retired govt engineer).

> 'My brother gave me his scooter once he went abroad. Since then I go to college on a scooter nearly 50% of the time whereas before I went to college by walking most of the time and only occasionally went there by public transport. Walking one way was nearly a 40-min walk. But with the scooter you take it right inside the campus. I also work part-time. There also you can take the scooter right inside and then come home. So, there is no walking at all when I use the scooter.' (Participant5, 22 year old, female).

Lack of public spaces or parks

Some participants said that if there was a public park, walking track or ground nearby where they could go to, it would greatly aid walking.

> 'In my hometown(another small town) there was a school near our house which had a large ground. I often went running in that ground. Such facilities are not available here. Here we have to walk on the street without footpaths with motorcycles and cars. We raise money and play futsal sometimes that is the only ground we can access.' (Participant4).

Poor quality of footpaths and streets

The poor quality of footpaths was also noted by many participants, with broken footpaths, trees planted right on the narrow paths. Participants also related instances of grievous injury or even death to pedestrians who were out walking. But some participants thought that was an excuse as there were always side streets and less busy quiet streets where people could walk. Despite this one participant noted that footpaths had become better in recent years compared to the past.

> 'The footpaths are narrow and on top of that they have planted trees right on the paths. The footpaths are so narrow that I have to get off them multiple times, and after having to give way to another pedestrian many times it makes you annoyed. Sometimes if one person doesn't give space to the other there might even be a conflict.' (Participant7).

> 'Once I fell into the sewer. Luckily there was no water inside. We have to keep ourselves safe. I have not much expectation from the government.' (Participant2).

> 'Footpaths are often broken, they are narrow and you often have to get onto the street because of that. There is a danger of getting run over by vehicles.' (Participant1).

> 'Footpaths are in very good condition recently compared to previously.' (Participant9).

Air Pollution

Air pollution, the presence of dust and dirt on the streets was also said to be a barrier by some of the participants although it was not emphasized much. Many participants mentioned that walking in the inner streets where there is less pollution could be done to avoid this problem. Air pollution.

> 'There is pollution too, there are vehicles with black smoke and the authorities have not done anything to control them.' (Participant1).

'If we say air pollution is a barrier to simply walking, there are people who live or work near the busy streets. Also, have we stopped our other activities because there is pollution? Then why should it apply to walking.' (Participant8).

> 'One day, a few months back, during the time of forest fire, I think, the air quality was very bad and I couldn't go out. In my hometown even in the time of forest fires we didn't face that problem.' (Participant4).

> 'Air pollution is a problem in the city-center where my college is but not in the outskirts where I live.' (Participant9).

Clothing and sweating associated barriers

Participants, particularly those that went to offices to work, said that incorporating walking in their commute would be next to impossible because of the lack of changing rooms to change to their work-clothes and the near impossibility of walking in workclothes. In addition there were issues of sweaty clothes at the time of reaching office and the impracticality of having changing rooms in the government office which made walking long distances to work almost impossible.

> 'I sweat a lot and by the time I would reach the office I would be drenched in sweat. There is no concept of changing room here. But then again I think that people are coming to the office in their rain-coats or rain-suits and are able to manage it. Why shouldn't it happen for walkers? But then again, if they have set up breastfeeding and infant care center here why can't they build spaces for changing after walking to work?' (Participant6, Retired Govt, High Level, Engineer).

Gender based harassment

A barrier reported by only one of the participants was related to sexual harassment. This was not expected and was not used as a probe for the other female participants in order to avoid a leading question. None of the other female or male participants raised this issue.

> 'I am nearly always harassed by cat-calling on the street when I walk. I have resorted to wearing a mask all the time. People of all ages resort to cat-calling.' (Participant 9).

Social norms and stigma

Walking was associated with social stigma by some of the participants. This could be inferred from the statement of at least two participants who said that walking instead of using the office vehicle was out of the question. The age group of young college students in our study did not see walking as much of a stigma and no one was shy about having to walk.

> 'In our society any type of physical work is looked upon as being of low status. This is also the case with walking.' (Participant6).

> 'We hardly see anyone who is well dressed walking on the street. It is as if the well-bred (*sukila-mukila*) people should not walk on foot.' (Participant8).

Lack of willpower

One of the participants was of the firm view that the barriers that are said to be around are not real. He identified that the main and probably only barrier to walking was willpower. Lack of motivation as a barrier to walking was also consistently cited by other participants.

> 'I do not think lack of time is a barrier. Nor do I think infrastructure such as lack of footpaths or air pollution is a barrier. Yes, those do not exist, but that is only an excuse. If they are not hindering all our other activities, we are all going about our ways, then how can we say that those barriers exist. There are many of these constraints from drinking water, to electricity and we are satisfied with those that are not the best … so we should not take it that the lack of infrastructure is not excellent therefore I do not walk. Even for the safety question, we can wear reflective clothing to increase safety. Even when it comes to air pollution, we can walk in the evenings or mornings or walk on the inner streets where there is less. Does air pollution prevent us from conducting our other activities?' (Participant 8, Engineer).

At the end of the conversation all the participants were asked what role the government or local authorities could play in promoting walking. Most of them expressed that urban infrastructure could be improved and air pollution could be controlled. But they had little expectation from the government. On the question of whether government making walking mandatory for employees or promotion programs work, most were of the view that examples from society and motivation from friends and family members and social role models would work more than government efforts.

Discussion

This exploratory qualitative study among residents of an urban area in Nepal found that walking is viewed upon positively by most of the participants as an acceptable form of physical activity but many of them have not been able to incorporate it in their daily lives. Role models in society, past pleasant memories of walking, walking as a form of strengthening friendships was viewed as facilitators while the role of negative reinforcement due to the fact that a disease condition made walking mandatory was also noted. Most of the walking was done as a form of travel and enjoyment and less as a form of exercise alone. The barriers that were identified were lack of motivation, lack of adequate infrastructure such as footpaths or walking trails, the need to reach the workplace in uniform and lack of safety on the streets.

The findings of this study concur with that of Paudel *et al* [16] who report that lack of motivation was a factor for low levels of physical activity in their study. But unlike that study the participants of our study did not so much cite lack of time a barrier. It may not be appropriate to directly compare the findings with the Paudel study as it encompassed all types of physical activity from housework

to farm work and active travel. Moreover that study was conducted in adults over 40 years of age. The method was focus group discussion which may not allow for all participants to openly express themselves or tell their stories or experiences. It was located in a slight distance from the city center whereas the present study involved participants who lived in all the parts of the city including the city center.

This study found that may participants said walking as a form of exercise was initiated as a form of negative reinforcement when there was the presence of a certain health condition. This finding can be associated with that of the report by Kadaria *et al* [17] who reported that walking and travel related work was the main mode of exercise for diabetics. While all physical activity is grouped together in this study, and since walking is the predominant form of physical activity, it may be more useful to determine the facilitators and barriers to walking alone like the present study has done.

The participants were skeptical of the role of government in promoting or encouraging walking and some of them said that it had to come from within. This fact is corroborated by the WHO report on physical activity which states that less than half of the WHO member nations have a national policy to promote walking [5].

In this study nearly all the participants, except the students, who went to work said that they hardly took to walking when a vehicle was available. They cited various reason for this such as need to take vehicles to the meetings or need to reach the workplace in uniform. Walking to work has been shown in other studies to be associated with over-all higher levels of physical activity in young and middle-aged adults [18]. This highlights the need for undertaking active interventions to promote the walking commute.

For those of our participants to whom walking to work or school was prohibitive due to time-crunch or due to the large distances covered, even taking public transport facilitated walking unlike personal transport. This was because going to and from the bus-stops would involve walking. A similar finding has been reported in a large study carried out in France involving participants in an urban area which claim that use of public transport is associated with more physical activity [19].

In this study the participants particularly those of young or middle age nearly always reported that mental freshness, relaxation or alertness was associated with walking. A large systematic review concurs with these findings [20].

There are various factors associated with walkability such as walking facilities, traffic safety, pedestrian infrastructure and safety, safety from crime and aesthetics [21]. In this study one participant reported sexual harassment in the form of cat-calling although no one reported concerns regarding blatant crime. Another reason could be that the urban areas from which the participants in this study are selected are generally safe. Aesthetics of the cityscape were also not focused on. Future studies on walking could incorporate these probes.

One of the participants in this study was an 80-year-old with severe osteoarthritis who was unable to walk without much difficulty and used a walker for support at home. He reported that the large number of vehicles and bikes on the street on the way to the park was one of the reasons that stopped him from going there for morning walks. There is a difference in the perceived infrastructural barriers to walking in those with disability compared to those without [22]. Although in this study even young and able-bodied participants reported that infrastructural barriers such as the poor conditions of the sidewalks hindered walking although they did not discontinue it, for the older participant this might be a reason for discouraging walking altogether.

One of the participants also brought up the issue of children not walking to school at all with many of them not even walking to the nearest bus stop. Although the cause for this phenomenon was outside the scope of this study. The feasibility of walking to school for urban children has been studied and walkability indices have been developed for urban areas with measures such as the number of crossings and intersections [23]. Future studies can be carried out focusing on active commuting to school in order to determine the associated factors.

This study also encompassed discussions on the use of public transit and the relationship with walking with the participants. Except students, those who were in active jobs with multiple meetings did not see it as a viable option. The way communities are built and the relationship of the built spaces with public transit and the efficiency and reliability of public transport have a role to play in whether community members decide to walk or not.

There are a few strengths of this study. This study was able to reach a wide range of participants. Ten participants were interviewed but data saturation was reached to some extent rendering some reliability to the findings. All the participants were very happy to relate their stories and all except one of the interviews exceeded the initially sought 30 mins from the participants which shows that they were willing to share their experiences and concerns. The interview of two of the older participants exceeded an hour as they related their experiences and stories. The willingness of participants to participate in online interviews and interviews such as done in the present study also opens up the possibility of large such studies in the future with multiple types participants.

There are several limitations of this study. The small sample size is a limitation as well as the number of female participants. A number of female participants who were approached for the interview could not find a half hour slot to undertake the interview. This group may have differing perspectives on obstacles and barriers. Time could be an important issue for full time working women who also have to juggle household chores. Also the wide diversity of participants was only united by the fact that they all live in the same city. Different demographics such as the older population, those with disabilities or those with varying working or socioeconomic circumstances could also be assessed in future studies.

At this juncture it may be useful to dwell on the importance of study such as this one. While a lot of focus goes on to identifying and treating NCDs the conversations must shift to creating more health promoting environments. Barriers to physical activity such as vigorous exercise are different to that of walking. The psychosocial and environmental factors related to vigorous physical activity have been amply described in the literature, while walking has received less attention. Rather than focusing on just exercise and formal exercise interventions which tend to relapse as soon as the intervention ends or pressure is lifted after initial control of the disease condition, intervention must be chosen which are an easier choice and part of one's daily life. Walking can

offer all these benefits therefore the experiences and perceptions of people matter. Rather than a simple prescriptive angle, there is also a need to look at the problem with a socioecological angle which this study found aplenty. As Nepal becomes more urbanized, as people transition towards a less active lifestyle, and as the power to purchase private motorized transport increases, so does the risks of diseases linked to inactivity. In such a context it is important to determine factors that promote physical activity which is a routine part of the day.

Conclusion

Walking is a great form of physical activity. Despite this not everyone who can walk, walks. There are many reasons for this. The attitudes to exercise and the perceived importance of physical activity such as walking may be some of the most important causes. The promotion of walking as a form of physical activity can be carried out by focusing on the social aspects and mental health benefits of walking, publicizing local role models, and fixing the urban infrastructure and public transport. Developing motivational programs and tackling the social stigma aspect may also be important. Determining the most common barriers to walking may have important implication for interventions that target walking as a physical activity such as changes in urban design, changes to cultural norms and behavioural patterns, changes in public health education and other policy and implementation changes.

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