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Determinants of sedentary behaviour and some strategies for reduction

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Abstract

Objectives: To describe identified determinants of sedentary behavior and present strategies previously suggested in order enhancing understanding about sedentary behavior and ways of reducing sitting times through promoting physical activity.

Material and methods: summarizing the current state of understanding on sedentary behavior and major factors influencing people to sit too much time based on surveying previously published studies.

Results: Major interpersonal, environmental and intrapersonal, individual factors that can affect or limit people not to move or to sit for extended hours in their life one of the outcome of this study. Also scholarly suggested advices and practices are scrutinized to provide summarized information on sedentary behavior and physical activity.

Conclusion: Identifying relationships of sedentary behavior with health outcomes and using relevant evidence is very important to inform public health guidelines or policy strategies.

Keywords: intrapersonal, interpersonal, attitudinal, sedentary behavior

1. Introduction

Researches addressing the relationship between sedentary behaviour and the determinants of sedentary behaviour are in its infant stage [37]. Physical activity is an important public health issue that has received increasing attention in recent years [31]. To intervene sedentary behaviour or time spent doing non-exercising, reclining and seated activities investigating and identifying potential influences among the population is the priority task to be considered important step of fighting sedentary behaviour. As Chastin reported that sedentary behaviour become an important public health issue all over the world particularly among the most sedentary groups in the population such as old adults [35], office workers, taxi drivers, truck drivers, bus drivers, aeroplane pilots, highly mechanised trades (such as crane operators, bulldozer operators) are at risk of exposure to prolonged sedentary time [19]. Sedentary time and its associated effect have been increasingly acknowledged in office based work place and need due attention to support and facilitate reduction of sitting too much time in work place [3]. Common risk factors of chronic NCDs the leading causes for mortality or morbidity globally are linked with behavioural risk factors such as smoking, physical inactivity/ sedentary, unhealthy nutrition, etc... are most modifiable, controllable, preventable, if due emphasis given to change of behavioural factors in a given population [13, 35]. Because, emphasis of behavioural factors to enhance a healthy life style is a public concern rather than individual. Health related behaviours can be affected or influenced by several factors such as socioeconomic status, level of education, family, social networks, gender, age and interpersonal influences and the likes should be considered [13]. Studies identified various limiting factors of physical activity or caused reason to sit too much. For example, (PAS) reported factors influenced physical activity involvement in Canadian women and identified External Factors (Built environment, Costs, Climate, Subsidy process, Marketing, Transportation), Personal Influencing Factors (Life transitions, Family influence, Spousal, support, Health issues), Community Influencing Factors (Lack of childcare, Isolation), Internal Factors (Fatigue Guilt, Culture Racism/, Discrimination, Body weight/image, Skill Level, Priority), Organizational Supporting Factors (Family, Partnerships, Professional Support), Interpersonal Supporting Factors (Champions, Friends Spousal, Support) [29].

According to BROCHADO, *et al*, there are number of categories of determinants of physical activity are multifaceted however, as it has been suggested by several researchers it could be classified either of six inclusive category: [1] demographic and biological factors [2], psychological, cognitive, and emotional factors [3], behavioural attributes and skills [4], social and cultural factors [5], physical environment factors and [6] physical activity characteristics [4]. In this review the approach to identifying potential influences of sedentary behaviour relay on categorizing determinants in to various possible levels. This involves basically individual, environment, **s**ocial, and policy. Individual (intrapersonal) determinants include demographic, biological, cognitive, and behavioural factors whereas social influences (interpersonal) include family and peer factors and community or neighbourhood factors included under environmental influences [35, 38]. Concerning strategies to reduce sedentary behaviour, facts, suggestions, experiences, and tips for ensuring movement and reducing sitting during the working day, policy and environmental strategies were incorporated in brief.

2. Individual (Intrapersonal) factors

Intrapersonal factors involves multi-dimensional construct such as attitudes toward physical activity and sedentary behaviours. Attitude is commonly defined as an individual's favourable or unfavourable evaluation of an object or target behaviour which involve emotional, cognitive and behavioural aspects [11]. Individual or intrapersonal factors include cognitive (knowledge), demographic, biological, and

attitudinal (behavioural) aspects [5, 11, 16, 38].

2.1 Knowledge about SB

Countries developed national guide lines advocating reduction of sitting time or sitting behaviour, but there is little knowledge about what determines sedentary behaviour, how to develop interventions which leads them to change their behaviour within this population [35] and people knowledge about sedentary behaviour and its effect does not assessed sufficiently worldwide because evidences are limited explain whether people have adequate knowledge or not about sedentary behaviour and its related consequence.

Trying to implement strategies to reduce sedentary behaviour without understanding population knowledge level will be ineffective, because behaviour cannot be changed only with mechanical practice or recommended orders without attitude or sustained behaviour change through adequate knowledge. Koen's Blog, stated on this regard, to change behaviour, Knowledge is an essential component because knowledge informs us of the probable consequences and outcomes of our choices. "If you *know* that you will burn your hand when you put it on a hot stove, you are less likely to put your hand on a hot stove" [20]. Cognitive factors are key for the initiation, and long-term maintenance, of physical activity [35]. As Krosnick & Petty, cited in Fabrigar, *et al*, "knowledge is a structural property of attitudes that is a function of the number of beliefs and experiences linked to the attitude in memory and the strength of the associative links between the beliefs or experiences and the attitude" [7]. To attain breakthrough and sustainable improvements in human performance, accompanying behaviourally focused solutions through behaviour centred training is essential. Adults for the most part do what they want to do rather than what they told to do. So changing behaviours in one person or entire organization requires tapping in to personal motivation or reasons for doing things differently.

Therefore to change behaviour, the steps one should follow are: Reframing (changing patterned mind setting), Self-motivation, Shaping, Replacing, supporting and owning sustain behaviour change [22]. As several studies have supported, the reason researchers have been interested in knowledge is that it has long been assumed that increases in knowledge are associated with greater influence of attitudes on behaviour [7]. Therefore, education/Information/, awareness, campaigns, are needed to raise awareness, increase knowledge of potential behaviour change to an uninformed unaware audience [32].

2.2 Demographic factors

Socioeconomic characteristics of a population expressed statistically, such as age, sex, education level, income level, marital status, occupation, religion, birth rate, death rate, average size of a family, average age at marriage [4, 38]. A census is a collection of the demographic factors associated with every member of a population. Sedentary behaviour like TV viewing have been examined several times and independent association between age, gender, ethnicity, socioeconomic status, marital status, parental bodyweight, maternal depressive symptoms were found among people [35]. Inverse relationship between age and physical activity (the older the age, the lower in PA or the higher sedentary) and female likelihood of being less active or more sedentary is well studied [6, 8, 28, 30]. Low income association with PA is well known or number of contemporary researches distinguished clearly [1, 18, 23, 28]. The relationship between PA and education is reported by previous studies [7, 23]. For example, Degree educated males and females only have a 12 % chance of being physically inactive, whilst those with no qualifications are three times as likely to be physically inactive [23]. The odds of engaging in PA were higher for individuals with high levels of education compared to individuals with less education (OR = 1.176, 95% CI = 1.137, 1.216) [7]. Most studies examined the association between screen-based sedentary behaviour and weight status [33]. Even though evidences are inconsistence, or disparities are observed in data, demographic factors are necessary factors to influence sedentary behaviour or limit physical activity. So that understanding demographic characteristic of a given population is key factor in the processes of intervention of sedentary behaviour.

2.3 Biological factors

Age, ethnicity, gender, race/ethnicity, body mass index, income, socioeconomic status, marital status are considered as biological and demographic factors having well documented associations with various determinants of physical activity among adults, particularly age and gender are the most reliable associates with physical activities [4]. Evidence shown that sedentary behaviour generally increases consistently with age increase but, the rise is very sharp or high from the age of 70 onwards. Though it may be difficult to setup whether men or women are more generally sedentary, evidences revealed Women are more sedentary than men up the age of 40 years and men are more sedentary than women on the age of 60 and above [9].

2.4 Behavioural Attitudinal Factors

Among intrapersonal factors, behavioural factors are important factors influence to sit too much or to decrease participation on physical activity. As chasten explained, Physical complaints such as Pain felt in the standing position, fatigue experienced while standing and functional limitations which make standing difficult were appeared to be the main personal reasons that people would sit down [35]. As it has been supported by studies, Individual factors such as perceived enjoyment, self-discipline, time and convenience have potential to influence both physical and sedentary activities [37]. If people do not see sitting as an unhealthy behaviour, but rather as a positive coping strategy which enables them to remain functional, comfort and independent, or believe sitting as a way of managing chronic disease symptoms, such as pain and stiffness, renewing or conserving energy levels and making life easier and more enjoyable [35], it will be difficult to participate people in sedentary reducing activities or impossible to implement strategies to reduce sitting time aimed to overcome health effects that can kill people. Therefore working to change the attitude, belief, developed pattern of life style, etc... Of the population should be the priority step in intervention program. According to BROCHADO, *et al*; attitudes, barriers to exercise, control over exercise, enjoyment over exercise, expected benefits, health locus of control, intention to exercise, knowledge of health and exercise, lack of time, mood disturbance, normative beliefs, perceived health or fitness, personality variables, body image, psychological health, self-efficacy, self-motivation,

stage of change, stress, value of exercise outcomes are considered as Psychological, cognitive, and emotional factors whereas activity history during childhood/youth, activity history during adulthood, alcohol, contemporary exercise program, dietary habits, past exercise program, process of change, school sports, skilled for coping with barriers are considered as behavioural attributes and skills [4].

3. Environmental Factors

(Community or neighbourhood factors)

Increasingly, sedentary behaviours are environmentally-driven and ubiquitous [17]. Among various determinants, one of the most important influencing factors of physical activity or sedentary behaviour which is not understood largely is environmental factor that should be focused through public health intervention [25]. The physical or built environment plays a great role which can be levelled number one to influence every kinds of people group and environmental attributes and their associations with PA behaviours were a major research area of public health research in the past decade [6]. Public health goals related to physical activity are achieved by strategies aimed at changing physical and socio political environments, but among other influences, physical environment are the least studied type of influence on physical activity particularly [31]. Studies indicated that participants compliant about their surrounding environment are that it does not offer adequate stimuli to encourage them to stand up or enough facilities to allow them to be active [35]. Every people exposed to the environment are beneficial from the nearby environment. Environmental and policy approaches complement behaviour and lifestyle modification strategies. Therefore focusing on environment rather than changing the behaviour of an individual at a time is more advantageous approach [31].

Environmental factors can be evaluated in Individual Level: **(**Time, Motivation, Health), Social Environment Level: (Culture, Social Connections, Social Access), Physical Environment Level: (Built Environment and Active, Transportation, Physical Access, Natural Environment) that might influence participation in physical activity should keep in mind when developing physical activity programs and opportunities [2]. Under physical environment level, natural environment includes Natural settings: (parks, nature trails, rivers, lakes, and green space), Climate: (temperature, precipitation, and wind) Topography: (landscape, trees, mountains, hills, prairies, and woods), Air and air quality: (clear air, exhaust fumes and pollution, and allergens) are known determinants of physical activity [2]. Socioeconomic, political, cultural, daily living conditions and Individual health are considered as social determinants of physical activity and sedentary behaviours that can influence participation in physical activity and sedentary behaviours. For instance, establishment of attractive neighbourhoods or availability of opportunity to involve in physical activity that can be created by urban design policies can invite or encourage people to participate in activities [21].

3.1 Culture

Culture under social environment is a significant determinant of sedentary behaviour or physical activity in the community. We need to pay attention to how we think or feel about other people and how these beliefs will influence our actions towards them. If we are aware of our biases—which are a part of our own cultural makeup—we can reduce the barriers that keep us from understanding each other. Culturally appropriate programs and messages can be very beneficial. However, be cautious about further segmentation of cultural groups. Every culture and individual is unique; we can't say this is right and that is wrong culture, rather understanding and being strategic full accordingly is advantageous [2].

The following are some cultural practice in respect to physical activity. As Hoebeke, Mansfield, and Caperchione *et al*, sited in Alberta Centre for Active Living 2010, For example, some cultures accept that men participate in sports, but that women do not, rather women are responsible for taking care of the home and children. Taking time away from these tasks for recreational or leisure physical activity is deemed inappropriate or seen as selfish, some types of physical activity are valued more than others (Household chores and physical labour are not considered physical activity in the same way as recreational and leisure activities), In North America, few people walk to do every day jobs, etc... are positive or negative attitudes people already developed [41]. In some cultures, clothing requirements can restrict involvement in physical activity, e.g. Women must wear skirts or a hijab and Men must wear a turban, Some religious practices and holidays may affect an individual's ability to participate in scheduled programs e.g. Many Muslim men and women pray regularly throughout the day. A scheduled physical activity program may not be able to accommodate this time constraint are some expectations from culture Caperchione *et al*., as sited in (ACAL). Frome the perspective of health, still there are misconceptions exists. E.g. to be thin is to be healthy in some culture whereas in other cultures do not associate thinness with health. Also ACAL sited Thompson *et al* and explained that some culture sweating and heavy breathing are considered unhealthy and should be avoided, good health and longevity are left "in the hands of a higher power" [41]

3.1.1 Some traditional sayings and Folktales related to PA in Ethiopia

Physical activity and sedentary behaviours can be largely determined by dominant or pervasive social or cultural norms related to Physical activity, because individuals' behaviour is shaped by what people around them consider appropriate or desirable, should and should not behave [21]. Given that there are some cultural practices, beliefs, narrations, expressive speeches popular in most cultures still in use that discourage movement or encourage sitting in Ethiopia related with physical activity. Due to fast development traditional beliefs and thoughts about physical activity seems improved, however still its influence on physical activity is significant or not simple. Even though it may not convey original meaning as cultural usage, tried to translate massages by professionals and explained.

- In any occasion at home or at office, gusts or anybody interning from outside are Invited to sit after greeting with hidden obligation. This is not the only practice or culture of Ethiopia but also familiar in most part of the world. That is why researchers say "we are sitting culture".
- "Butter extracted from curd" meaning that as milk needs to coagulate to give butter, you need to sit or you better to remain sited to be useful rather moving here and there. So that active people are thought to have no substance.

- "The house has pillar" meaning that you are not a pillar who supposed to hold the house by standing, so that you must sit down. Standing at home or office is not accepted culture in all over the country.
- "Is there needle in his buttock?" When someone moves here and there frequently, others say there must be needle in his buttock that does not allow him/her to sit down. Culturally moving frequently or being active is considered as bad habit or not encouraged by the society.
- "Why did you move as penis of tanner?" Meaning that traditionally when tanner was tanning the leather, he produce back and forward movement in stationary position and simultaneously his penis moves like pendulum. Mostly they are observed without proper wearing or bare body due to climate or poverty. So that the message is why do you move here and there? Implies traditionally movement is not supported by the culture of the society.
- "Things tighten while running will spares while running" this traditional speech implies that things should not be done while moving or discouraging movement while doing something.
- In most Ethiopian culture standing is related with curse, for example, if somebody especially women are not married in early age, people says "she remained stand" and some old people use this speech to curse someone who disagrees or dishonour them. Even though the meaning may be beyond this, standing is not considered as good thing.
- "Restless" The word given for those frequently moving, it is negative feeling of somebody. Culturally this restless people are not issued to leadership and their social value is reduced.
- There are so many beliefs or wrong understanding in our culture related to physical activity. For example, if somebody seen walking or running on the street early in the morning, people think as he/she perform ritual activity hidden. However, today physical activity comes to be recognized in most people especially in urban dwellers.

Hence, cultural influence could be the important determining factor for physical activity and sedentary behaviour which needs intervention through education and information in the country.

4. Inter personal or social factors

(family and peer factors)

In addition to physical environmental supports, the family and peer environment affects levels of physical activity or sedentary behaviour at large. Family factor refers to the verbal or nonverbal forms of encouragement for physical activity directly and indirectly. Direct support involves logistic supports such as facilitating (providing transportation, paying enrolment fees for activities) whereas indirect support involve encouragement by increasing perceived competence [11]. Physical activity and sedentary behaviour can be determined by both structural (socioeconomic, political and cultural contexts) and individual (motivation, self-efficacy, perceived barriers such as cost, lack of time) factors. Influences are multi factorial across social, individual and environmental [21]. Also class size, exercise models, group cohesion, past family influences, physical influence, social isolation, social support from friend/ family are basic social determinants of physical activity and sedentary behaviour that many studies explored positive relationships between physical activity behaviour and social support from family, friends, peers and program staff in supervised settings [4].

5. Strategies for reduction of sedentary behaviour

Reducing sedentary behaviour become burning global public health issue in this decade and disparities and lack of knowledge about determinants of sedentary behaviour across human developmental stages limited the process of intervention [34]. Ergotron stated that global studies show we sit up to 15 hours a day on average. In a 65-year life, we will have sat in front of a No for over 9 years [15]. Findings support sedentary time occupies more than two-thirds of employees' working days which needs due consideration to testing and evaluating initiatives to facilitate and support the reduction of sitting time in the workplace [3]. Unlike office workers, Transportation workers, (such as taxi drivers, truck drivers, bus drivers, aeroplane pilots) and highly mechanised trades (such as crane operators, bulldozer operators)are highly exposed to prolonged sitting and having very less opportunity to intervene at work place [19].

Ergotron media posted scholars and different media statement towards sitting behaviour: "Sitting is Deadly" (ABC TV, August 2012), "Less Sitting May Lead to Longer Life" (CNN Health, July 2012) "Kill Your Desk Chair – And Start Standing" (Bloomberg Business week, June 2012). "It is now irrefutable that sitting down is not a good thing. People die sooner."*(James Levine),* "Sitting disease has a direct correlation to all-cause mortality. We are essentially moving from chair to chair."*(David dunstan),* It isn't the act of sitting that is the problem –it is how much of it we are doing. Consider the amount of sitting you do each day. Physiologically when we sit for an extended period of time, our body starts to shut down at the metabolic level (*Marc hamilton*)**,** our hip flexors and hamstrings shorten and tighten, while the muscles that support your spine become weak and stiff (*Douglas lentz*), key fat-burning enzymes drop by 50% (*James levine***)**, lost productivity from increased sick days (*Gallup heal*) [15].

In recent years effects of prolonged sedentary behaviour has noticeably increased and attracted the interest of media across the business community and its bad effect demanded the need for education and awareness within domestic and global corporations [24].

Strategies often include providing access to facilities and programs not currently available and supporting social environments that favour activity. Examples of environmental and policy approaches designed to increase physical activity include walking and bicycle trails, funding for public facilities, zoning and land use facilitating activity in neighbour hoods, mall walking programs, building construction encouraging activity, policies and incentives promoting physical activity during the workday, and policies requiring comprehensive school health programs [31].

Scientific findings revealed that light-intensity exercise involving the use of the postural muscles (think standing) or use of bigger upper thigh muscles, as in the use of a fitness ball in place of a chair throughout the workday can increase metabolic health and reduce all-cause mortality. The research points to small, incremental changes in the large-group muscles such as quadriceps and gluteal muscles (front thigh and seat muscles) in addition to the large erector spine muscles (large postural muscles of the back). This differs from

past thinking that only "exercise" was the antidote to too much sitting. By contrast, the message is that just ever slightly increasing your daily output (total energy expenditure) by intermittent standing and changing of position can have potential, beneficial health outcomes [24].

Standing at work for three or four hours in a day is equivalent to run about 10 marathons a year *(John buckley)*, You can burn 30-60 more calories in an hour by standing! [15]. David Dunstan in his presentation stated that to reduce the effect of sedentary behaviour, focusing on reducing prolonged, unbroken sitting ≥ 30 minutes is the most important [12] and also Lockton Companies reported breaking up sedentary time can be beneficial, and strive for new governmental recommendations that reduce sitting time [24]. Breaks in sedentary time that lead to increased number of "bouts", typically with shorter duration have been shown to lead to improved health outcomes [16]. Carson *et al*. conducted the study on 4,935 Canadian adults and found that increased numbers of breaks in sedentary time are associated with: lower waist circumference, lower systolic blood pressure, higher HDL-cholesterol levels, lower blood triglycerides levels, lower blood glucose levels, lower blood insulin levels [36].

Sedentary behaviour is independent of physical activity so that meeting the recommended amount of physical activity cannot grant one from being sedentary or negative impact of sitting for prolonged period of time can affect even active people [9, 24, 33, 39, 40].

The following are some possible suggestions that can be simply implemented ideas that help foster more movement into the work environment. Adults aged 19 to 64 are advised to try to sit down less throughout the day, including at work, when travelling and at home.

5.1 Tips for ensuring movement and reducing sitting during the working day

- Habitually conduct brief meetings
- Use a standing desk for everything that doesn't equire you to sit down! [10].
- Promote regular breaks and movement pauses during meetings or initiate standing meetings.
- Stand or walk around while on the phone.
- Call or walk to colleagues in the office in place of e-mailing or calling them.
- Use the height adjustment of standing-sitting desks alternatively as often as possible!
- Use the stairs instead of the lift or escalators!
- Take a walk break every time an opportunity to move you take a coffee or tea break [10, 24, 27, 36].
- Promote a work culture where "standing is OK."
- Multilevel leadership cheerleading and role modelling of non sitting alternatives [24, 36].
- Stand on the train or bus
- Set a reminder to get up every 30 minutes
- Swap some TV time for more active tasks or hobbies 187NHS Choices, 2016
- If possible, cycle to work!
- If you go by car, park a little way away and walk to the office or to home!
- Remove whatever you use frequently out of your reach!
- If you have to sit, do it actively and dynamically [10].

In addition to the listed practicable suggestions forwarded by different scholars, the researcher proposed to practice the following considering the present trend of office workers.

- Remove TV from office, If TV is the must in office, stand or have a chair with pedal.
- Establish or organize "walk day", "On your feet day", "Sit not half day" etc just like "Mother Day", "may day" on job on organization basis within a week or a month, or a year.
- Prepare and putt your mobile on the height of reaching standing in your office or in your home rather putting in pocket or nearby desk.
- Changing comfortable chairs.
- Finding files by yourself instead of commanding facilitators.
- Don't use messengers within the working organizations.
- Be at least a member of one or two health club or establish such team and be active participant.
- Have at least two or three equipments at home used to perform physical activity.
- Have chair with pedal at home.
- Have at list 20 – 30 minutes' walk each day by any means regardless of work pressure.
- Stand while any customers inter to your office to see you. (Culturally acceptable trend).
- Stand while taking opportunity to speak or suggest on meetings (Culturally acceptable).
- Suggest or demand facilities used promoting physical activity in any opportunity.
- Ask yourself "For how long I spent sated today"?
- Think how you can reduce sitting time in your life every day.

As WHO cited in E. Paulik *et al*, to minimize the global burden of NCDs and Promoting healthy lifestyle thereby reducing sedentary behaviour and increasing physical activity is not only the responsibility of health sector but also the responsibility of health, food, agriculture, environment, education sector etc. [29]. That is the reason why government shall work with to achieve increased health status of the population in desired period of time. Hence, Business, health, education etc... Organizations, Government, Policy approaches, Individuals, etc... should work to address too much sitting as a public health challenge in any way thereby:

- Involve innovations and use of innovative technologies on multiple levels that can provide more opportunities to reduce sitting time.
- Campaigns might emphasize reducing sitting time as well as increasing physical activity.
- New regulations in workplaces to reduce or break-up extended periods of job-related sitting.
- Promoting active transport modes not only as opportunities to walk but also as alternatives to prolonged sitting.
- Providing non-sitting alternatives at community entertainment venues or events
- Implementing innovations and systematically evaluate, particularly of approaches that have the potential for broader dissemination etc...[26].

(AMA) The American Medical Association conference held on June 2013 in Chicago underlined sitting for extended periods of time is really bad for personal health! And they adopted policy that recommending business organizations offer sitting alternatives, including standing desks [15]. Policy approach can extend to recommend such extent.

5.2 Policy and Environmental strategies

Participation in physical activity and sedentary behaviours can be greatly determined by socioeconomic, political and cultural norms. As Sallis & Glanz cited in Ball, *et al*, physical activity opportunities can be shaped by policies governing urban design and neighbourhood development, such as the establishment of safe, aesthetically pleasant and walk able neighbourhoods For example, one key component of urban design is land-use mix, which has an inverse association with physical inactivity in both children and adults. In areas where residences and commerce are co-located, there is greater utilitarian walking or run. Conversely, in areas where there are distinct residential and commercial zones, commuting distances tend to be longer and, consequently, car travel is more prevalent than active transport. So that observational evidence and reviews shown to correlations of physical activity with urban design and neighbourhood environmental features [21].

The major aim of environmental and policy strategies relay on changing the physical and socio political environments. Change of physical and socio political environments refers to behaviour and lifestyle modification strategies providing access to facilities and programs not currently available and supporting social environments that favor activity such as walking and bicycle trails, funding for public facilities, zoning and land use facilitating activity in neighbourhoods, mall walking programs, building construction encouraging activity, policies and incentives promoting physical activity during the workday, and policies requiring comprehensive school health program [31].

Policy is a key factor for the cultural and socioeconomic development in any sovereign country. People health, living status, life style etc... are determined by policies convenient or harsh for population living in. When Policies fall to target physical activity, urban designs luck gyms, play fields, parks, recreational places, walking or running spaces etc... that can encourage people to participate in physical activity. As the result health status of population health declines and consequently health care cost and absenteeism from work raises, proficiency, productivity of people reduced that can adds for overall development of the country. The long run effect of Ignorant of policy focusing physical activity may cause irreversible public challenge.

Due to an emerging demand to reduce sedentary behaviour, the primary target for policy should be meeting an increasing demand of population. For example, Access Economics for Fitness Australia (2012) reported that there are approximately 30,000 people were fitness industry professionals engaged in trade as fitness trainers in Australia which is one for 750 ratio of the population in the country and estimated as many as 5.4 million Australians will require fitness training services by 2020 compared with 3.3 million in 2012 [21]. If the policy fails to plan to meet this need, the effect consequently will be unmanageable for the country.

Therefore Promoting healthy lifestyle thereby reducing sedentary behaviour and increasing physical activity to minimize the global burden of NCDs is not only the responsibility government or health sector but also the responsibility of health, food, agriculture, environment, education sector etc as a hole [29].

Research provoke sitting too much is bad for health certainly but still what amounts and intensities of activity might be protective in the context of prolonged sitting time is yet not answered clearly. Therefore, identifying relationships of sedentary behavior with health outcomes and using relevant evidence is very important to inform public health guidelines and policy [26].

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