

RESEARCH PAPER

General Architecture

Fear of Crime and Individual Factors as Barriers to Leisure Walking in Neighborhoods

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Received: June 2018, Revised: October 2019, Accepted: November 2019

Abstract

Leisure walking is one of the most common forms of the physical activity and is usually performed in neighborhood streets and public open spaces. To create the neighborhood environments that encourage leisure walking, it is important to understand which physical, social and individual factors are most strongly related to this type of the physical activity. This study explored the association of personal barriers (as individual factor) and crime safety (as social factor) with leisure walking activity. The study adopted a questionnaire survey to address research inquiries. 500 questionnaires were systematically distributed among adults residing in four residential neighborhoods of Bandar Abbas city. Of these, 411 qualified samples were used in the study. The findings of the study showed that promoting walking behavior among adults is a public priority in Iran to maintain health. This study showed that fear of crime play an important role in preventing people to walk leisurely in the neighborhoods. In addition, the findings of the study revealed how individual barriers decrease the chance of residents to be outside of their homes to walk for recreation or exercise. The findings of the study might help the local government departments to better identify the current situation of the neighborhoods in terms of the walking behavior and the needs of the residents to promote the leisure walking activity. This is because the walking activity is important for the individuals' health and well-being as well as promoting the social interaction in the neighborhood areas.

Keywords: Leisure walking; Crime safety; Personal barriers; Neighborhood.

1. INTRODUCTION

Walking is an easy mode for being active physically; it is performed as either leisure or a method of transportation. The majority of individuals recognize walking as a good activity for health [1]; although, few people walk regularly in a way to obtain the maximum benefits [2]. Most of the people can do it since there is no need for financial support and this activity can be done until old age. In the research conducted about neighborhood walking in Iran showed that more than 67% of residents did not engage in any type of vigorous-intensity physical activity lasting for at least 10 minutes, besides; the respondents' behavior showed that there is a surprisingly low tendency to walk optionally among residents. It was proven that majority of the reason to walk in neighborhoods were due to travel walking to get a

destination such as for shopping or working [3]. In addition, in another study performed in Iran, the findings showed low level of leisure walking among adult population [4]. Accordingly there is a need to promote various forms of physical activity, with special attention to optional walking such as leisure walking in Iranian societies [5]. In order, to develop strategies for reducing these major issues, it is very important to understand the reason individuals are physically inactive. Personal and social factors have been proposed to influence the level of walking leisurely or optionally in neighborhood areas [6]. These factors such as health problems, negative attitudes, lack of social bonding among neighbors, fear from crime and etc. may limit people to decide to walk. Hence, the current research aimed to explore the association of some negative social and individual factors as barriers to leisure walking in neighborhood areas. The study has two hypothesis as followed.

1. Crime safety positively associates with recreation and exercise walking.
2. Individual barriers decrease intention of recreation and

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exercise walking.

2. BACKGROUND OF STUDY

Decrease in people's walking rate concerns social scientists, planners, and architects since it can have the impact on the individuals' quality of life and their sense of community [7]. A great deal of research has been carried out by scholars in the fields of community medicine, public health, urban planning, and transportation regarding recognize the factors that have impact on the level of people's physical activities [8,11]. Previously-conducted studies have shown a number of factors that contribute to physical activity in both older and younger adults, including built environment features such as neighborhood walkability and the nearness of recreation facilities and parks [12,15], as well as the neighborhood social environment factors such as incivilities and aesthetics [16,19]. Indeed, there is barriers to physical activities in multiple levels, e.g., social, individual, and environmental.

Safety were examined in previous researches in relation to neighborhood walking [20,22]. Environmental quality and social condition of neighborhoods are considered as the main factors which contribute with level of fear of crime among Iranian population [23]. An examined was done by Rhodes et al. on the correlations between psycho-social cognitions and safety regarding the walking behavior [24]. It was revealed that low level of perceived crime had a contribution to the greater impact of attitudes towards the intention of walking compared to those people who perceived a high level of crime. In addition, fear of crime has been recognized as barriers to walking behavior in Iranian neighborhoods [25]. Fear of being assaulted or attacked prevent people to be outside of their households and may decrease social connection and collective efficacy in neighborhoods [26]. Since perceiving a higher level of crime prevents walking by convoking residents with anxiety, tension, and disabilities, and also creates fear and limits socialization. Thus, research is needed to consider the interaction between psycho-social cognitions and neighborhood social factors like fear of crime for leisure walking in neighborhood context.

Crime, itself, is linked with some special conditions or materials, whereas the fear of crime depends on perception of environment. Fear of crime is known as a response to the space attributes and this is more common compared to crime [27]. In fact, this fear is an important social issue, which has potential to damage the social relations and affect the individuals' life quality [28]. Previous studies in Iran also stressed on the significant influence of fear of crime on women behavior [29].

It should be emphasized that urban parks, whose positive psychological effects have been already explored by several researchers, are not-to-go places because of the fear of crime [30]. To diminish the fear of crime, many researchers have suggested factors such as lighting, criminals, robbery, feel safe to walk in the neighborhoods in different times of the days, and maintained overgrown trees and shrubs [31].

On the other hands, in terms of walking behavior, it has

been proposed that the attitudinal factors are stronger determinants of walking in comparison with the social and built environment factors [32,33]. As confirmed by Handy [34], the walking environments quality was not found effective on the choice to walk; however, Moudon et al. showed a high rate of neighborhood walking that was low in terms of accessibility for pedestrians [35]. Such studies did not consider the attitude variables; however, their results suggested that constructed environmental factors may not be important to those who are strongly motivated to walk. These studies have emphasized the factors in personal attitude for governing the decisions for walking. Therefore, Alfonzo suggested that feasibility was the most basic level of requirement in hierarchy of the walking needs. It may influence the process of decision making for leisure walking trips. Alfonzo also stated that if feasibility is not addressed well, walking will not develop normally, regardless of the level of satisfaction of a personal with other levels of social and built environments [36]. The factors that are related to the need for feasibility include the consideration of weather, time, or negative attitudes. Inadequate time may restrict the feasibility; this way, it finally affects a person's decision for walking. However, factors such as shyness, tiredness, or feeling awkward can affect negative attitude. In addition, obligations for the older people, children, or other commitments may be declined. When deciding between driving and walking, several factors associated with feasibility influence the individuals. The house chores or jobs, for example, influence the household's mode of travel [37]. These factors may be associated with the level of responsibility of an individual or the sum of time s/he has for walking; this affects the feasibility of walking for individuals. In addition, the restriction of time is accompanied with the walking level [38]. In case of younger people, motivation, time, and responsibilities for child care hold back the physical activities [38].

To the best of our knowledge, only a few studies have been carried out on social-individual interaction in walking [39]; the majority of them are focused on built environmental factors such as accessibility of sports and shopping facilities, connectivity of streets, and neighborhood aesthetics [40].

3. METHODOLOGY

The present study was carried out in Bandar Abbas, a city that is located on the southern coast of Iran, with a total population of 0.54 million. The city is comprised of 4 administrative regions and 84 neighborhoods that have been developed in three periods including early, middle and recent periods. Four neighborhoods of the town from new, middle and old aged were chosen for the current research. The questionnaires intended for this study were distributed among the residents of these four neighborhoods based on the number of household in each area. The respondents were chosen systematically based on the number of households in the areas. 500 questionnaires distributed among the residents that finally 411 questionnaire were collected and qualified to be used

for the research. The questionnaire survey consisted four parts.

Leisure Walking Activity

In the first part the intention of leisure walking of residents were asked by questing how much the mentioned activities were the reason of residents to walk in their areas in the Likert scale format ranging from 1 (a little bit) to 5 (very much). The leisure walking activity classified in two groups and examined separately. Recreation walking was measured by walking to neighborhood park (R.Park), walking to meet and socialize (R.Socilize) and walking for refreshing (R.Refresh). The exercise walking were measured by asking about the reason for brisk walking (E.Brisk), jogging (E.Jog) and walking slowly in purpose of health (E.Walk).

Personal Factors

In the second part the respondents were asked to rate the items that prevent them from walking in the neighborhood area including, lack of time and house cores (PB1), weather (PB2), feel shy (PB3), tiredness (PB4) and laziness (PB5). The items measured in the Likert scale format ranging from 1(not at all) to 5 (very much).

Fear of Crime

In the third part the condition of crime safety in the neighborhood were asked. The respondents were asked to rate the following items based on the condition in their neighborhoods in the Likert scale format; including rubbery (CS1), presence of lighting (CS2), safety in day time (CS3), safety in night time (CS4).

Socio-demographic Variables

In the last part the demographic questions including gender, age, marital status and the area they lived were presented.

Statistical Analysis

A pilot test was conducted to test for reliability and validity of the items before proceeding to collect data using the final survey questionnaire. Test-retest analysis on the measurement of walking behavior was found to have excellent consistency between items. It was arranged and analyzed after the data was collected. Two computer programs called the Social Sciences Statistical Suite (SPSS) and SmartPLS were used to analyze data for statistical analysis. Using SPSS descriptive and frequency statistics, data was analyzed. SmartPLS was running for the correlation and regression of results.

4. RESULT

203 women and 191 men participated in the study. The mean age was 34.5 from 18 to 70 years old. Most of the subjects were married (62.3%) and 34.5% single. The finding revealed that residents feel safer from crime in day time compared to other safety components in the neighborhoods, while crime safety in night time and presence of lighting in the areas were received lower rate compared to other safety components. In regards to personal barrier it was found that, lack of time and weather were received the higher rates compared to other personal barrier factors, while feel shyness were known as the lowest barrier of respondents to walk in their neighborhoods (Table 1).

Table 1 Description of Crime and Personal Barrier

	N	Mean	SD
Crime Safety			
Rubbery (CS1)	411	2.90	1.14
Presence of lighting (CS2)	411	2.60	1.32
Safety in day time (CS3)	411	3.55	1.26
Safety in night time (CS4)	411	2.67	1.23
Personal Barrier			
Lack of time and house cores (PB1)	411	3.04	1.43
Weather (PB2)	411	3.79	1.24
Feel shy (PB3)	411	1.80	1.26
Tiredness (PB4)	411	2.91	1.47
Laziness (PB5)	411	2.72	1.46

Using the PLS-SEM, the theories proposed in this analysis were tested. Having established the structural model's validity, the path of the recommended structural model was measured through the succeeding step. The analytical results of the model has been demonstrated in Table 2. Higher path coefficient indicated stronger impact exerted by the LVs on the DV. The significance of the path coefficients was calculated by exploiting the bootstrapping function of the Smart-PLS 2.0 with 411

samples (see Fig.1). Accordingly, all the path coefficients were significant (above 1.96); hence the null hypothesis was rejected. As it can be discerned in the Table 2, crime safety had a significant positive impact on the recreational walking (b=0.25, p<0.01) and exercise walking (b= 0.31, p< 0.001). However, the results showed a negative impact of the personal barrier on the frequency of exercise walking (b= -0.18, p<0.001) and recreational walking (b=-0.21, p<0.001).

Table 2 Result of PLS Algorithm and Bootstrapping Properties

Path	SE	T Value	P Value
CS->EX	0.31	6.31	<0.001
CS->REC	0.25	2.57	<0.001
PB->EX	-0.18	2.35	<0.001
PB->REC	-0.21	1.98	<0.01

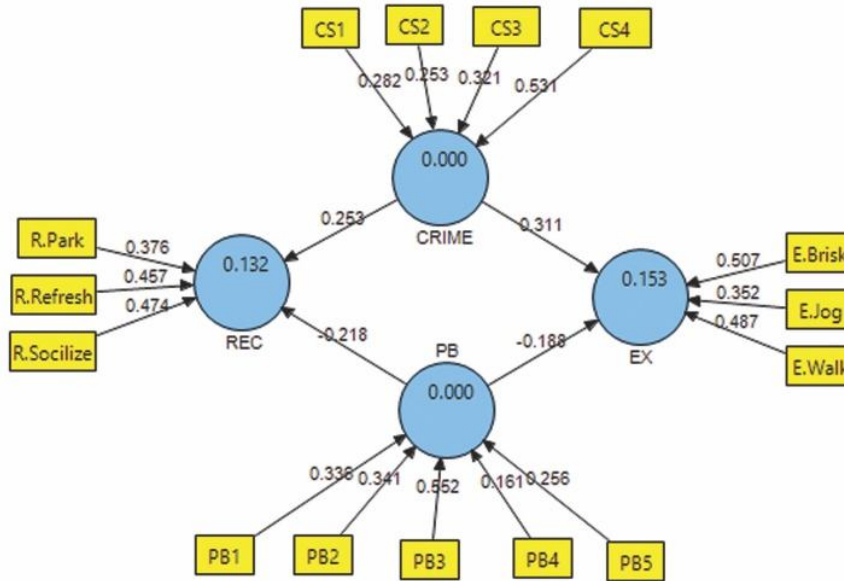


Fig. 1 PLS Algorithm of the model

5. DISCUSSION

Neighborhood walking can be performed for different reasons in the areas as optional and necessary reasons. Previous research in Iran showed lack of optional walking in the Iranian neighborhoods [4]. So it raised the question what is the main reason of resident that prevent them to walk in their neighborhoods. The all factors influence people to walk outside their households can be classified in three categories, individual, social and environmental [41-42]. In the current research individual factors as personal barrier and fear from crime as social factors were examined to find out which factor have the most influence on decision of leisure walking in the neighborhoods. The finding of the current research suggests that crime safety and personal barrier both have significant influence on intention of exercise and recreational walking. In addition based on the result of PLS algorithm at table 2, it was determined that crime safety had the higher influence on both type of leisure walking in comparison to personal barriers. This denotes the important role that fear of crime plays in the intent of optional walking in residential areas. This result can be supported by the other studies who examined the influence of the fear of crime on the walking behavior. For example, in the conceptual model proposed by Loukaitou-Sideris [43], the fear of crime influenced the inactivity in the neighborhood. In addition; the finding is in an accordance with the findings of Paydar et al. who

revealed that the fear of crime in the neighborhood affected the neighborhood walking [44]. Moreover; this finding was in accordance with the findings reported by Omar et al. who found the association between the crime safety and the walking behavior in promoting neighborhood walking [45].

On the other hand, the result of the study revealed that all items of crime safety that examined in the model were contributed with the crime safety. With regards to crime safety, the finding of the study demonstrated a significant negative influence of personal barrier on neighborhood walking. By and large, the finding of the study determined that feeling safe from crime had higher influence on leisure walking rather than personal barrier to do more optional walking activity in neighborhoods.

Strength and Limitation of the Study

This study is one of the first works in Iran on social-individual interaction in leisure walking. Compared to developed countries, there are fewer studies in developing countries that investigated the influence of factors on optional walking. Moreover, the current studies considered factors affecting leisure walking based on different purpose of this type of walking (whether recreation or exercise), which may factors differently effect on different type of walking. The results are generalizable to the adult population of cities in Iran. The situation in Iranian neighborhoods may not be representative of other

neighborhoods in the world. In addition, this study adds to the evidence based on determinants of neighborhood walking behavior by incorporating specification of social-individual factors.

The study has some limitations, as well. The study relies on self-reported perceived neighborhood safety, individual barriers and walking behavior. Such reports might have some bias; people may have difficulty estimating their walking level. However, this method of the survey for PA is still widely regarded as the best and most used tool available to assess the level of walking activity [46]. Safety problems also was measured subjectively. The study chose a subjective measurement because it may be more important to determine walking behavior [47], which is poorly correlated with an objective measurement [48]. In addition, among all social and individual factors, only crime problems and specific individual factors were considered, which may have confounded the link between fear of crime and individual factors with leisure walking activity.

6. CONCLUSION

Promoting walking to maintain health among adults is a public priority in Iran. This study showed that fear of crime play an important role in preventing people to walk leisurely in the neighborhoods. In addition, the findings of the study revealed how individual barriers decrease the chance of residents to be outside of their homes to walk for recreation or exercise. Such findings demonstrate the need to identify successful strategies for reducing community fear of crime and also pay more attention to evaluating the impact of social determinants on health.

For the future studies, the study suggests that other type of walking activity such as travel walking in terms of personal barrier and crime safety can be examined, on the other hands the study only examined personal barriers and the influence of other personal factors such as motivation has not revealed, while other aspects of safety such as disorders and traffic safety has not determined in the current study; hence the researchers suggest that for the future studies all aspects of personal attitudes and safety can be examined.

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HOW TO CITE THIS ARTICLE

Z. Aliyas (2019). *Fear of Crime and Individual Factors as Barriers to Leisure Walking in Neighborhoods*. *Int. J. Architect. Eng. Urban Plan*, 29(2): 269-275, December 2019.

URL: <http://ijaup.iust.ac.ir/article-1-207-en.html>

