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

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**Abstract**

Leisure walking is known as one of the most common type of physical activity that perform in purpose of recreation or health, which in turn may affect resident’s health. Built environment, social and individual factors are known as the main factors that affect decision to walk, in this regards, the study aimed to investigate the influence of personal and social factors that prevent residents to walk for recreation or exercise in their neighborhoods. Hence the fear of crime and personal barriers were examined in the current research as social and personal factors respectively.

To collect the required data, 500 questionnaires by using systematic sampling were distributed from March to May 2016 in four residential neighborhoods of Bandar Abbas in Iran out which 411 questionnaire turned out to be qualified to be used in the study. The Smart-PLS was used to analyze the data. The findings of the study revealed that personal and fear of crime both have significant influence on the level of recreation and exercise walking in the neighborhood areas. The finding of this study can help urban and health researcher to know the significant influence of fear of crime and individual attitudes on the level of leisure walking activity, in addition, the findings of the study suggest that urban planners and designers as well as public health promoters need to highly consider the contribution of neighborhoods' social environment variables as well as individual variables to promote walking behavior changes among adult population.

*Keywords*— Exercise walking, Fear of crime, Neighborhood, Personal Barriers, Recreation walking.

# 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; although, few people walk regularly in a way to obtain the maximum benefits. 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 [1]. 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. 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. 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 investigate the influence of some negative social and individual factors as barriers to leisure walking in neighborhood areas.

# 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. 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. 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 [2]-[5], as well as the neighborhood social environment factors such as incivilities and aesthetics [5]-[11]. Indeed, there is barriers to physical activities in multiple levels, e.g., social, individual, and environmental.

To the best of our knowledge, only a few studies have been carried out on social–individual interaction in walking; the majority of them are focused on built environmental factors such as accessibility of sports and shopping facilities, connectivity of streets, and neighborhood aesthetics [4], [12], [13]. Safety were examined in previous researches in relation to neighborhood walking [5]-[7]. An examined was done by Rhodes et al. [14] on the associations between safety and psycho-social cognitions regarding the walking behavior. 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. Today, 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 [15]. In fact, this fear is an important social issue, which has potential to damage the social relations and affect the individuals’ life quality [16]. 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. To diminish the fear of crime, many researchers have suggested factors such as lighting, criminals, rubbery, feel safe to walk in the neighborhoods in different times of the days, and maintained overgrown trees and shrubs.

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 [17], [18]. As confirmed by Handy [19], the walking environments quality was not found effective on the choice to walk; however, Moudon et al. [20] showed a high rate of walking trip in neighborhoods that had been low in terms of pedestrian accessibility. These studies have not considered the attitudinal variables; however, their findings recommended that built environment factors might not be important for those who are motivated intensely for walking. These studies have emphasized the factors in personal attitude for governing the decisions for walking. Therefore, Alfonzo [21] 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 [21] 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. 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. In addition, negative attitude may be affected by factors such as shyness, tiredness, or feeling awkwardly. Furthermore, feasibility may be declined by responsibility for elderly, children, or other commitments. Many factors that are associated with feasibility affect the individuals while choosing between driving and walking. For example, the house chores or working affects the mode of travel for the household [22]. 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 [23]. In case of younger people, motivation, time, and responsibilities for child care hold back the physical activities [23].

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

# 4. Results

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 (see Table 1).

The PLS-SEM was used to examine the hypotheses formulated in this study. 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 II. 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. The result showed that personal barrier and crime safety both have significant influence on intention of exercise and recreational walking in the neighborhoods.

# 5. Discussion and conclusion

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. 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. 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 of crime safety on intention of optional walking in the 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 [24], 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. [25] who revealed that the fear of crime in the neighborhood affected the neighborhood walking. Moreover; this finding was in accordance with the findings reported by Omar et al. [26] who found the association between the crime safety and the walking behavior in promoting neighborhood walking.

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.

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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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 |

TABLE 2

Result of PLS Algorithm and Bootstrapping Properties

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Path | SE | T Value | P Value |
| CS->EX | 0.31 | 0.04 | 6.31 | <0.001 |
| CS->REC | 0.25 | 0.09 | 2.57 | <0.001 |
| PB->EX | -0.18 | 0.08 | 2.35 | <0.001 |
| PB->REC | -0.21 | 0.10 | 1.98 | <0.01 |

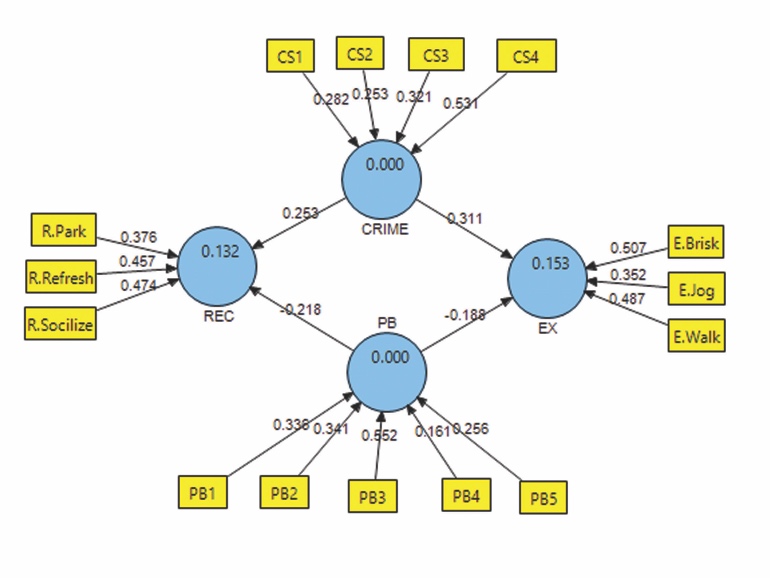


Figure. 1 PLS Algorithm of the model