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**TRAFFIC CONGESTION AND PREVALENCE OF
MENTAL AND PHYSICAL HEALTH ISSUES IN KARACHI**

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ABSTRACT

With increased urbanization and industrialization, nearly all large cities of the world are facing the problems of transportation and traffic congestion. These issues not only have negative ecological and economical outcomes but also affect the mental and physical health of people. The current study aimed to explore the prevalence of psychological and physical health issues associated with traffic congestion. This study is exploratory in nature for which survey design was used. The sample of the study was 79 residents of Karachi who commute through various means of transportation on a daily basis. The age of the participants ranged between 18-45 years; and the data was collected by using purposive sampling technique. Demographic Information Form and Self-Report Survey Questionnaire were employed on individual cases. Descriptive statistics were employed to analyze the data. The results revealed that a substantial portion of the sample faces stress, anxiety and anger issues. Physical outcomes such as backache were also common along with decreased productivity at the workplace. The implications of the findings and future directions are suggested.

Keywords: *Traffic Congestion, Commuters, Mental And Physical Health, Metropolitan City, Pakistan*

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INTRODUCTION

In the past few decades, urbanization and rapid industrial growth has taken over the under developed and developing countries. With this growth more job opportunities have been generated and consequently the vehicle load on roads used as commute towards and from workplace. One of major issues encountered in large cities is related to transportation and traffic and it's not only counterproductive for economic and ecological environment but also negatively affects people's health. Since an individual's psychosocial environment plays a pivotal role in mental and physical health therefore, traffic congestion and transportation issues in big cities are identified as one source of worsening health (Ali et al., 2013).

The Global Livability Index (2022) declared Karachi among the top 10 worst cities to live in terms of quality of life as assessed on five dimensions, the first being infrastructure. Infrastructure and transportation are two pillars of urbanization as they set directions for form and function of city. It also affects the residents of city in terms of their decisions of movement and travelling in their environment and the ability to access resources such as employment opportunities and other services. Some forms of transportation, such as motor vehicles, can have serious negative impacts on health in terms of traffic load and congestion, noise pollution and added burden of stress and compromised emotional well-being thereby affecting physical and psychological health both (Curry, 2016).

Traffic congestion occurs when the number of vehicles running on the roads exceeds the space required for them to move freely. Mental health refers to one's ability of constructive problem-solving, assume responsibility of own actions and obtain satisfaction from life to live effectively with other people. According to Kumar and Varma, (2020) traffic congestion has negative impact on mental health. Traffic Congestion is among the nine major infrastructural deficits which not only reduces overall transit efficiency but also adds to mental stress of commuters.

It is one of the serious problems in all countries of the world including the developing ones. The major cities of Pakistan such as Karachi, Lahore, Hyderabad, and Faisalabad are much vulnerable to the effects of the traffic congestion, which have attracted very less attention and interests of the researchers from academia and traffic management organizations (Ali et al., 2021a). Not only the phenomenon of traffic congestion and lack of proper infrastructure affects people's daily routine activities but the time consumed during traveling hours induces various emotional repercussions as well. Alalool et al. (2016) found that the emotional and physical

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health effects are associated with driving in congested traffic, and long driving hours among Sharjah residents among 414 participants, out of which 66.7% felt that they spend way too much time driving, and 86.5% reported suffering from traffic congestion in Sharjah. Among poor emotional health indicators, stress was found to be highest in prevalence, along with nervousness and aggressiveness. A substantial number of participants also reported headaches, neck pain, back pain, pain in legs and dizziness.

Furthermore, in a similar study, Kumar and Varma (2020) analyzed the psychological implications of traffic congestion among drivers in Chandigarh, India. The study employed a cross-sectional design and sample consisted of 900 drivers. And the results revealed that there exist significant positive relationship between mental health and quality of life. Also, mental health was significantly negatively correlated with depression, anxiety and stress. A recent review of studies (as cited in Ali, et al., 2021b) suggested that there is some relationship between the time taken during commute and commuter's physical health. It also suggested presence of anxious symptoms as the time taken during journey increases.

There is a direct relationship of one's living environment with the quality of life and consequently physical and psychological well-being. When the issues of ecological nature, such as traffic are discussed the context and economical level of that particular area are of prime consideration, as all of these factors interact to produce a combined effect on one's health. Curry (2016) explored the relationship between the exposure to traffic and mental health of residents of Auckland, New Zealand. Poor mental health of individuals was measured the number of visits to doctors and issued prescriptions for mood disorders and anxiety issues in the last 12 month period. The results indicated no detectable effect of traffic volume or traffic density on mental health. However, the volume of heavy commercial vehicles was associated with poor mental health. However the neighborhood was found to be a stronger predictor of mental health as quality of life is impacted by the reduced social capital.

The problem of traffic congestion in major cities of the world like Karachi is a frequent phenomenon. Although, number of efforts have been made on Governmental and Organizational level to accommodate and facilitate the ever increasing traffic but congestion seems to be an unresolved issue so far, and its adverse effects on musculoskeletal and mental health are inevitable (Ali et al., 2013).

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In the past few years a various researches have been conducted to evaluate the effect of traffic on physical and mental health of travelers and also some indigenous studies suggest the wide range of transportation issues. In 2004, a multilevel analysis was conducted which revealed that populations living in areas with high traffic reported more depressive symptoms, arising from unpredictability of traffic and feelings of perceived helplessness (Gee & Takeuchi, 2004). Another Qualitative study which employed semi-structured interviews to examine the impact of traffic and transportation on lives of Sunandaj Urban areas, found traffic congestion as a factor leading to poor quality of life and dissatisfaction ultimately leading to disharmony among family members (Nadrian et al., 2019).

Therefore, in the light of extant evidences presented as above, the present study aimed to explore the prevalence of physical and psychological issues associated with traffic congestion and long hours of journey among the residents of Pakistan's largest and most populous city, Karachi. The Karachi is a Metropolitan city where people from all over Pakistan are living and who unfortunately face many issues related to lack of developed infrastructure as well. This research will fill the gap of knowledge regarding the association between traffic congestion and mental and physical health of people. The dissemination of the findings may lead to change in the infrastructure of the city and making more beneficial for the general population.

METHOD

Participants

The present study employed survey research design. By the use of purposive sampling strategy, 76 residents of Karachi city (*Males* = 55, *Females* = 20) were selected based on given below inclusion and exclusion criteria. The participants' age ranged between 18-45 years. The sample included both married and unmarried participants who traveled on daily basis either by their own car or other means of public transport (bus, auto rickshaw, cab service etc.).

Inclusion/Exclusion Criteria

- Residents of Karachi city were included only
- Those people who travel on daily basis were included
- Job-holders and students both were included

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Measures

Demographic Form

A demographic form including the demographic information related to age, gender, marital status, socioeconomic status, mode of traveling, frequency of traveling and occupation.

Self-Report Survey Questionnaire

A self-designed survey questionnaire was used in this study and the questions related to physical complaints and symptoms such as headache and back aches due to traveling daily were added. Other questions included were designed to evaluate and examine the presence of stress, sadness, anger, reduced productivity and effect on interpersonal relationships.

Procedure

After the development of demographic sheet and Self-Report Survey Questionnaire, participants were recruited via purposive sampling, those who fulfilled the inclusion criteria. Written consent for participation was obtained and the survey questionnaire along with demographic form was administered in one-to-one setting. Ethical principles such as confidentiality of the data, right to withdraw at any stage of the study, it was also assured that there is no harm to any participant during the data collection. At the end the researcher thanks to the individuals for their volunteer participations.

Statistical Analysis

After the completion of data collection, descriptive analysis was performed whereby percentages and frequencies of participants' characteristics were calculated by using SPSS, V-25.

RESULTS

Table 1
Socio-Demographic Information of the Participants (N = 79)

Participant Characteristics	<i>f</i>	<i>%</i>
Gender		
Male	56	73.7
Female	20	26.3
Marital Status		
Single	70	92.1
Married	06	7.9
Family Structure		
Joint	39	51.3
Nuclear	37	48.7
Primary means of Transportation		
Personal automobile	49	64.5
Public Transport / Bus	12	15.8
Cab Service	17	22.4
Private Van Service	07	9.2

Table 2
Prevalence of Mental and Physical Health Issues in the Resident of Karachi (N=79)

Variables	<i>f</i>	%
Stress	61	80.3
Sadness	57	75
Anger	45	59.2
Physical Exertion	64	84.2
Backache	48	63.2
Impact on Productivity at Work	54	71
Impact on Interpersonal Relationships	28	36.9

DISCUSSION

Karachi is the largest and most populous city of Pakistan and among the top most populous cities of the world. Being a metropolitan city and previously capital of Pakistan, Karachi has been the center of urbanization and industrialization. However, lack of developed infrastructure and ever increasing influx of population has the city roads even busier and thereby the busiest roads face traffic jam and congestion nearly every day. The cost of traffic congestion is not only in terms of environmental and ecological issues such as noise pollution and air pollution but also it decreases the overall quality of life of commuters as the time spent during journey increases, the drivers and travelers are likely to experience frustration, stress and anger issues (Kumar & Varma 2020; Nadrian et al, 2019). As the time taken during the journey increases, the travelers also face the physical problems such as back ache, and leg aches. Since, the sample of present study included people traveling by car and by public transport both, all of them reported some kind of physical complaints invariably. Physical exhaustion ranked top of all the indicators, and it is also one of the reasons the emotional well-being is compromised in longer term (Nadrian et al, 2019).

Since both physical and emotional well-being go hand in hand, the participants reported feeling less productive and efficient at their work. However, at the same time very few percentage of them suggested that their interpersonal relationships are being impacted. This could be due to the fact that the survey

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questionnaire employed did not include standardized items. As, the previous literature contradicts with the findings and suggest that the incidence of frustration, anger and helplessness, affects the family functioning, thereby causing some sort of disharmony and dissatisfaction among members. This area needs to be explored more in future researches, whether these indicators directly or indirectly affect the family functioning.

The results of present study showed that a substantial portion of our sample encountered emotional and physical consequences due to traffic congestion and transportation issues. These results are in accordance with previous studies conducted internationally in other busy urban areas of the world. Not only anxiety and stress was the result of traffic congestion but the efficiency and productivity of participants at work was also found to be reduced.

This study highlighted some already known (Falcocchio & Levinson, 2015) impacts of traffic congestion on human health both physical and mental health and on their productivity. The findings of this study would be helpful in highlighting the significant role of human friendly infrastructure and transport facilities in the developing countries like Pakistan and the need for the execution of already established traffic laws to protect individuals from physical and mental health issues. Recently Hegewald et al. (2020), did a meta analyses of 31 studies and investigated the effect of all traffic noise on mental health and found significant results that it leads to risk of depression, anxiety, cognitive decline, and dementia in adults. Ai Huu Tran et al. (2020) they conducted the research on 1000 respondents those affected during rush hours in all major cities of Pakistan. The findings indicated that conditions of traffic affect the productivity of employee and also promotes psychological problems in people. They gave suggestions to have better commuting infrastructure like (low type roads, high type roads, under passes, bridges, and fly overs) can reduce the stress caused by the traffic jam and also save the time to travel by the people.

The present exploratory study employing a sample of the resident of Karachi suggests that a number of people who used to travel by different transportation suffer from physical and mental health issue due to traffic congestion. Hence, it can be inferred from these finding that an additional study is needed to investigate how delays and jams caused by traffic affect the commuters' physical and psychological health in general and human behavior in specific. For this purpose, commuters who encounter traffic regularly in the most congested and populous areas of city or a comparison of different cities should be chosen for investigation. The findings of

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the present study must be interpreted in the light of following limitations. The sample size in the present study was small because of shortage of time. For future researches it is suggested that different samples may be extracted from different areas of city to evaluate the effect of traffic in comparison of busy areas to those less busy areas. Moreover standardized questionnaires for the evaluation of mental health problems can be employed to get to get better understanding of mental health issues in the resident of Karachi, Pakistan.

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