

Mental Health Status in Relation to Perception of Crowding in Dhaka City

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Abstract

The main purposes of the present study are twofold: i. investigating the relationship between mental health and perception of crowding; ii. and finding the effects of perceived crowding on mental health. The data was collected from 140 persons were purposively selected from different areas of Dhaka city. Those who are capable of perceiving their environment accurately. The instruments used in this study were personal information questionnaire, Bangla version of the General Health Questionnaire (GHQ-12) of Goldberg (1972). Crowding Perception Measuring Scale (CPMS) of (vasky&shelby2008) was adapted in Bengali by the present researchers. The result showed that there is a significant correlation between Mental health and perception of crowding, and there are negative effects of crowding (in a room, residential work place, streets, transportation) on mental health.

Keywords

Mental Health, Perception, Crowding, Perception of Crowding

Introduction

Psychology is the scientific study of behaviour and mental processes. To understand human behaviour systematically or scientifically psychologists have conducted many researches or studies in the different fields of psychology. There are many sub-fields of psychology of which environmental psychology is one of the most important

branches of psychology that focuses on the relationship between people's behaviour and physical environment. By conducting many researches, environmental psychologists have found the effects of physical environment on human being's behaviour. They explained that some elements (crowding, population density, polluted environment, etc.) of environment have a negative effect on physical and mental health. Due to unhealthy and unhygienic environment persons cannot cope with their family and work environment properly, they cannot work productively and fruitfully and so on. As a result, they face different types of mental health problems. Considering the importance of the above discussion the present investigator would like to conduct this type of study to investigate the relationship between physical environment and mental health of the inhabitants of Dhaka city.

Mental health is a state of emotional and psychological well-being in which an individual is able to use his or her cognitive and emotional capabilities, function in society, and meet the ordinary demands of everyday life. Mental health refers to how a person thinks, feels and acts when faced with a life situation. It is how people look at themselves, their lives and other people in their lives; evaluate the challenges and problems; and explore choices. This includes handling stress, relating to other people and making decisions. It also implies a large degree of adjustment to the social environment. Mental health has the capacity to think rationally and logically, and to cope with the transitions, stresses, traumas, and losses that occur in all lives, in ways that allow emotional stability and growth. In general, mentally healthy individuals value themselves, perceive reality as it is, accept its limitations and possibilities, respond to its challenges, carry out their responsibilities, establish and maintain a close relationship, deal responsibly with others, pursue work that suits their talent and training, and feel a sense of fulfilment that makes the efforts of daily living worthwhile.

Crowding is a subjective evaluation of a density condition. Crowding is psychological phenomena but density is physical phenomena of population distribution.

Crowding is the one potential source of stress. Environmental psychologists distinguish between the physical measurement of density and the psychological feeling of crowding. Density is defined as the physical area available to the given number of individuals present, while crowding is the psychological feeling of not having enough space available. Paulus (1980) concluded that while high density (numerous individuals per unit of space) is usually necessary for crowding, it does not

always produce the negative feeling of crowding. Crowding is a psychological phenomenon. Most people think of crowding as a negative situation. Crowding is a subjective evaluation of a density condition, including its appropriateness in time or place (Stanky, et al., 1976). Perception of crowding as the individual weighing of the number of people seen or encountered compared to what was expected or desired (Dawson & Watson, 2000). According to Vaske and others 2008 the elements of crowding are generally used as a type of crowding these are In-room crowding, Residential crowding, Work-Place crowding, Street crowding, Transportation crowding.

Perception is a process by which as an organism becomes aware of the Concern stimulus from the environment. Perception is the power, act or state of receiving knowledge of external things by impressions on the senses, cognition, discernment, conception.

Perception of crowding is the ability to understand or to feel about the crowding environment sensitively. And crowding is an essential bottleneck, setting limits on objects perception, eye and hand movement, visual search, reading and perhaps other functions of in peripheral, amblyopic and developing vision. Crowding impairs not only discrimination of object features and contours but also the ability to recognize and respond appropriately to objects in a clutter. Studying crowding might lead to a better understanding about the human beings mental health accurately. Reactions to crowding are conditioned by cultural context and by an individual's subjective experience of crowding (Gove et al. 1979). Even within a given culture, individual reaction will vary depending on age, gender, ethnicity, the composition of the household, a person's hierarchical position in the dwelling unit and life-cycle stage (Edwards et al. 1994). The debate about cultural preferences for and tolerance of different levels of crowding is referred to in the discussion of crowding and mental health. The findings challenge the assumption that members of particular ethnic or cultural groups will respond to household density in a particular way.

Review of the Related Literature

Mitchell (1976) describes a number of spatial measures used by researchers as indicators of crowding. De Lauwe (1959) in Mitchell (1976), for example, suggested two critical density thresholds. One, based on objective observations of children, was for 90 sq ft per person. Madge (1968) in Mitchell (1976) refers to 170 sq ft per person as the lower limit for mental health. The American Public Health Association set the

desirable standard at twice this figure in 1950. Healthy housing is not just concerned with the sanitary and hygienic design of the shelter but with the whole health spectrum of physical health, mental health and social well-being both within the dwelling and the residential environment. (WHO strategy, in Ranson 1991).

One of the most widely quoted studies is that of Gove, Hughes and Galle (1979 in Chicago. This large cross-sectional study revealed a strong relationship between crowding (persons per room) and poor mental health. The authors developed a series of scales to measure mental health, social relations in the home, physical health and care of children. (They subsequently became engaged in a debate with Booth et al. (1980) on the validity of their conceptualizations, but defended their usefulness.) A factor analysis led Gove et al. to conclude that :

Crowding results in physical withdrawal, psychological withdrawal, a lack of general planning behaviour and a general feeling of being "washed out".

The experience of crowding is strongly related to poor mental health and to poor social relationships in the home.

The experience of crowding is strongly associated with a number of characteristics of a poor child care, although it is only moderately associated with poor interaction between parent and child.

Rationale of the Study

Good mental health is crucial to living a long and healthy life. Good mental can enhance one's life, while poor mental health can prevent someone from living an enriching life. But mental health may be affected by many factors (such as population density, traffic jam, temperature, noise, etc.) of our environment that should be studied extensively. Thus, the study will bear important feature understanding the human behavior in terms of crowding environment.

Hypothesis of the Study

The hypothesis of the present study are :

- i. There is a Significant relationship between Mental health and perception of crowding;
- ii. Positivity of the perception of crowding correlates the better Status of Mental health;

- iii. Negativity of the perception of crowding correlates the degradation of Mental health;

Method

Sample and Sampling Technique

A cross-sectional survey design was followed for conducting the present study. A total number 140 (80 male and 60 female) people will be selected purposively from the different areas of Dhaka city. Their age range will be 20 to 60 years. Their educational qualification will be HSC to post Graduate degree. All the respondents will be chosen from normal population e.g. those who are capable to perceive their environment accurately.

Measuring Instruments

Demographic and Personal Characteristics Questionnaire

By this questionnaire, the data on age, sex and education level were collected.

The General Health Questionnaire (GHQ-12)

This scale was originally developed by Goldberg (1972) in 1981 to measure mental health of respondents. This 12 item scale contains 6 positive and 6 negative items. Responses were given weights of 0, 1, 2 and 3. The items were answered on a four-point response format ("not at all", "somewhat" "to a considerable extent" and "to a great extent"). Positive items were scored in 4 points, from 3 to 0 and the negative in the reverse order from 0 to 3. Total scores are the sum of all the items, with a range of 0 to 36. High score in the scale indicates the high mental health problems. The reliability of the Bangla version of the GHQ-12 (Sarker and Rahman 1989) was measured by parallel form a method which was found to be quite satisfactory ($r=0.69$)

Crowding Perception Measuring Scale (CPMS)

The scale consists of 15 items measuring the crowding perception of the adult people who able to perceived their environment accurately, using 4 point likert type of scale. The four responses in this scale are not at all crowded, slightly crowded, Moderately crowded and extremely crowded. The scores for the response categories range from 0 to 3. The not at all crowded = 0, slightly crowded = 1, Moderately crowded = 2 and extremely crowded = 3. The minimum and maximum possible score on this scale are 0-45 respectively Higher scores indicate high perception of crowding and lower scores point out less perception of crowding. cronbach alpha was computed to determine the

internal consistency reliability. The cronbach alpha was found .86, This value is highly significant with an alpha level of .05. The scale was adapted in Bangali by the present researchers.

Procedure

Data of the present study were collected individually. Necessary level of rapport was established before administering the questionnaire. The participants were ensured that this answer will be completely anonymous as well confidential and will be used only for research purpose. The participants are requested to fill up the personal information sheet carefully. Then they are told to leave the first page and please try to give the following questions answer. They were instructed to complete their task according to the instruction. They were asked to give tick (✓) mark in the appropriate box. Then the answer sheets were collected from them. In this way data were collected.

Results

In order to analyze the data Mean, Standard Deviation, Co-relation and stepwise multiple regression analysis were applied on the obtained score. The obtained results are presented in table 1 through 5.

Table 1 Mean and Standard deviation of Mental health and Elements of crowding perception

Variable	Mean	SD
Mental health	20.42	2.14
Transportation	6.42	.56
Street	6.38	.59
Work place	6.26	.78
Residential	6.16	.84
In room	6.04	.98

Table 1 Presents Mean and SD of dependent and independent variable. The Mean and Standard deviation are, 20.42, 6.42, 6.38, 6.26, 6.16, 6.04 and 2.14, .56, .59, .78, .84, .92, respectively.

Table 2 : Correlation matrix among of study variables.

Variable	1	2	3	4	5	6
Mental health	-	-	-	-	-	-
Transportation	.64	-	-	-	-	-
Street	.62	.56	-	-	-	-
Work place	.58	.54	.46	-	-	-
Residential	.51	.52	.51	.48	-	-
In room	.48	.50	.48	.62	.48	-

Dependent Variable Mental health

Table 3

Stepwise Multiple Regression co-efficient of elements of crowding perception on Mental health.

Independent Variable	Standardized Bata (β)	t	Significance
Constant		3.22	.005
Transportation crowding	.401	8.41	.005
Street crowding	.388	7.62	.005
Work place crowding	.298	6.20	.005
Residential crowding	.162	5.41	.005
In room crowding	.142	3.42	.005

Table 3, Show the partial standardized betas (β s) indicated that five elements of perception of crowding in the model were predictor of mental health. These elements were in room crowding $\beta=.142$, $p<.005$, Residential crowding $\beta =.162$, $p<.005$, work-place $\beta =.298$, $p<.005$, street crowding $\beta =.388$, $p<.005$ and Transportation crowding $\beta =.401$, $p<.005$.

Table 4

Selected Statistics from Regression of elements of crowding on mental health.

Independent Variable	R	R ²	R ² Chang	Significance
Transportation	.681	.463	.463	.001
Street	.723	.555	.092	.001
Work place	.780	.642	.087	.001
Residential	.837	.701	.059	.001
In-room	.847	.717	.016	.001

Result of regression analysis indicated that strongest predictor of mental health was transportation, which alone explained 46.3% of variance. The result of the analysis further indicates that street was the second important predictor of mental health. R² change indicated that 9.2% of variance in mental health was accounted for street, 8.7% of variance in mental health was accounted for by the work place, .06% of variance in mental health was accounted for by the residential, .02% of variance in mental health was accounted for by in the room.

R² indicated that these five elements of crowding account for 71.7% of variance in mental health.

Table 5

The Over-all F-Test for regression of perception of crowding on mental health

SV	SS	df	MS	F	Significance
Regression	2138.40	5	427.68	193.52	.005
Residual	296.14	134	2.21		
Total	2434.54	139			

The significant of F-test ($F=193.52$ $df =5,134$, $P<.005$) indicate that variation in the mental health was accounted by joint linear influences of the elements (transport, street, work place, resident and in the room) of crowding.

Discussion

Crowding issue is one of a prime concern of present day environmental debate. Although many steps have been taken to eliminate crowding specially in many city area, but it has never been studied seriously from a psychological view point. Thus the present researcher tried to probe into the matter from a psychological perspective. The main purpose of the study was to understand the different types of crowding situation on the psychological point of view and to investigate effects of perceived crowding on the status of mental health. The area of research is the metropolitan area of Dhaka city. Also the objective of the present study was to explore the relationship between mental health status and the psychology of crowding for those people who lives in such a city entitled in the meantime as overcrowded.

The aimed of the present study was to investigate qualitative and quantitatively both the relation between mental health and the perception towards crowding.

The perception of crowding and mental health of the participants was measured by administering crowding perception measurement scale (CPMS) and General Health Questionnaire (GHQ-12). The plan of analysis were also designed to investigate the score of mental health and the five elements (In room, Residential, Workplace, Street and Transportation) of crowding by descriptive statistical method, correlation method and regression analysis method using SPSS-23 versions.

The hypothesis were formulated on the basis of the purpose of the study. The main hypothesis of the study was there is a significant positive correlation between mental health and perception of crowding and the higher level of perception of crowding degrades the status of mental health. In room, Residential, Workplace, Street and Transportation crowding sequentially higher responsible for the degradation of the status of mental health.

A cross-sectional survey design was used and data were collected at a single point in time. The sample consisted 140 (80 male and 60 female) the sample are selected purposively, chosen from the normal population, who are capable to perceived their environment accurately.

The prime objective of the present study was to investigate the relationship between mental health status and the perception of crowding of the people lives in Dhaka city. Result presented in Table 2 indicate that there is a significant positive correlation between mental health and the elements of crowding (Transport, street, workplace, resident, in the room).

The direct effect of each independent variable on mental health is estimated by the partial standardized regression Co-efficient (β) with all other independent variable in the equation Table-3. Partial standardized regression co-efficient tell us how much of a change we would make in the dependent variable (mental health) by making a one unit change in the independent variable(transport, street, workplace, resident, in the room) while keeping all other variable constant. The partial standardized β indicates that five elements of perception of crowding in the model were predictor of mental health (Table 3).

Conclusion

Overall findings of the study are suggestive of the fact that, Perception of crowding is the ability to understand or to feel about the crowding environment sensitively, on the other hand mental health is a state of emotional and psychological well-bang. The gross study was conducted where five types of crowding perception (In room, Residential, Workplace, Street and Transportation) were tested its effects on the status of mental health of the inhabitant of Dhaka city. Result showed, in short, the overall perceived crowding effects to degrade status of mental health. By the conclusion of this study a new field of applied knowledge is proposed here to be explored entitled "Environmental Mental Health".

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