

Residential Crowding, Perceived Control and Subjective Well-being among Students Staying in Hostel Dormitory

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The present study investigated the intervening role of perceived control in the relationship between crowding and well-being of the students. The study has been carried out on 448 students staying in hostel dormitories of Pondicherry University. The variables studied were residential crowding, perceived control and subjective well-being. It was hypothesized that residential crowding negatively influences subjective wellbeing, also perceived control positively influences subjective wellbeing. In addition, it was also hypothesized that residential crowding influences subjective wellbeing through perceived control. The findings of the correlational analysis indicate that crowding has a significant, negative relationship with subjective wellbeing and perceived control. Also, perceived control has a significant, positive contribution towards subjective wellbeing. Moreover, the mediation analysis shows that there is a partial mediation by perceived control on the relationship between crowding and subjective wellbeing. The findings have been discussed in corroboration with related literature.

Keywords: Crowding, Control, Subjective Well-being, Mediation

Nowadays, the scientific attention in crowding has increased due to the increase in population density and urbanization. Crowding is the psychological aspect of population density, which causes tremendous influence on the physical as well as mental health of individuals (Gifford, 1987). Nagar (2006) defined crowding as a multifaceted experience of a person in reaction to density related factors. Generally, the experience of crowding depends on the availability of space (Freedman, 1975), previous crowding experience (Jain, 1997), close physical proximity (Worchel & Teddlie, 1976), overload and unwanted interactions (Baum & Valins, 1977). Nagar and Paulus (1997) through factor analysis revealed four distinct components of crowding experience such as space satisfaction, positive relationship, negative relationship, and uncontrolled disturbance. All these four components predict the psychological wellbeing, and affect of the inhabitants (Nagar & Paulus, 1997). The present research also analyzed crowding based on these four components.

Crowding has a negative impact on different aspects of human behavior. Some studies

reveal that crowding is associated with adverse emotional and health problems (Kamal & Jain, 1984; Nagar, 1985), social withdrawal (Lepore, Merritt, Kawasaki & Mancuso, 1990) and poor social relationships (Gove, Huges & Galle, 1979). But, there is not much attempt to examine the role of intervening variables in the relationship of crowding with outcome variables as mentioned above. Therefore, the researchers in the present study have attempted to identify the mediating role of perceived control in crowding-wellbeing relation.

Crowding and Subjective Well-being

Crowding experience in one's residential settings may have a lot of negative impact on an individual's health, emotional state and social behavior (Baum & Valins, 1977; Cox, Paulus & McCain, 1984). Earlier researches conducted in dormitories reported that tenants living in crowded dormitories experience helplessness behavior, social withdrawal (Evans, Lepore, & Schroeder, 1996), social overload (McCarthy & Saegert, 1978), psychological and emotional distress (Giel & Ormel, 1977; Neethu & Sia,

2017), irritability, unhappiness, which can even lead to suicidal ideation (Edwards, Fuller, Sermsri, & Vorakitphokatorn, 1996) and are more prone to anxiety and depression (Dunn & Hayes, 2000; Evans, Wells & Much, 2003).

Crowding is a negative state and a source of chronic stress, which contributes a major risk to the wellbeing of the individuals (Edward et al., 1996). The felt demands of the society and the deprivation of privacy experienced in a crowded residential area has a significant effect on health and wellbeing (Gove & Hughes, 1983; Duckitt & John, 1983). A few Indian studies have been carried out on crowding, which show that the space satisfaction and negative relationship (components of crowding) in the house predict the emotional health and psychological wellbeing (Nagar & Paulus, 1997; Jain, 1997). Similarly, Sunita (2015) reported that crowding is constantly associated with an unpleasant affect, one of the important components of subjective wellbeing. Perceived crowding has a significant negative effect on positive affect, subjective and general wellbeing of the residents (Sunita, 2015). All the studies described above suggest that crowding appears to be a major threat to wellbeing, accordingly we are formulating our first hypothesis as follows,

Hypothesis 1: Residential crowding will have a significant, negative relationship with subjective wellbeing.

Crowding and Perceived Control

Control is extensively recognised as a driving force. White (1959) defined control as a need to exhibit one's superiority, mastery and competence over the environment. "It is a belief that one has at one's disposal a response that can influence the aversiveness of an event" (Thompson, 1981). The link between crowding and control was depicted by many researchers (Fleming, Baum, & Weiss, 1987; Hui & Bateson, 1991). Scarcity of resources, non-availability of space (Altman, 1975), blockage in goal attainment (Stokols, 1976), restricted movement, limited escape from stress sources (Saegert, 1978) and excessive social contacts

(Baum & Valins, 1979) are some of the major constraints imposed by crowded settings on human behaviour. These constraints lower the perceived control of the individuals in crowded settings. Besides these, Dion (2004) identified that, copying strategies, cognition and affective reactions considered to influence the role of control over crowding process.

Studies on dormitory residents reveals that control problems are more frequently found in tripled residents than doubled residents (Gormley & Aiello, 1982). High-density probably lowers our sense of control (Gifford, 1987). Rodin et al (1978) suggested that a high-density situation causes the individuals to lose control over the social interactions, which may lead to crowding experience. According to the researchers' knowledge there is no study on the role of crowding on perceived control in Indian context except one by Jain (1977). He reported that crowding is associated with loss of control. Earlier studies on these constructs depict that heightened perception of crowding leads to lower levels of perceived control (Gifford, 1987 Schmidt & Keating, 1979). Accordingly, we are formulating our second hypothesis as,

Hypothesis 2: Residential crowding will have a significant, negative relation with perceived control.

Perceived Control and Subjective Wellbeing

Researches revealed that control is considered as an important factor, which predicts the physical as well as mental wellbeing (Baltes & Baltes, 1986). Perceived control reflects one's self image, improves personal competency and makes the individual to use effective coping strategies (Miller, 1979). Perceived control has a positive effect on physiological responses (MacDonald & Oden, 1973; Szpiller & Epstein, 1976), pain tolerance, frustration (Sherrod, Drury, Hage, Halpern & More, 1977), anxiety (Staub, Tursky, & Schwartz, 1971), psychological wellbeing (Myers & Diener, 1995; Cummins & Nistico, 2002), life satisfaction and positive affect (Pallant, 2000). Many researchers argue

that control is considered as the positive aspect of subjective wellbeing (Cummins & Nistico, 2002; Myers & Diener, 1995). Earlier researches showed that control reduces the negative effect of crowding on mood and performance, and moreover a low level of control is associated with elevated levels of psychological distress (Lepore, Evans, & Schneider, 1992; Kivima & Lindstro, 1995).

Hypothesis 3: Perceived control will have a significant, positive relation with subjective wellbeing.

Mediating role of Perceived Control

Dormitory settings are mostly individualistic in character, and depend on the social stimulation, its atmosphere ranges from co-operative to competitive in nature (Nagar, 2006). If the dormitory residents are encountered with unwanted social interactions they experience lower control over the environment and exhibit a feeling of in-cooperation and competition with other residents (Baum & Valins, 1977, 1979; Baum & Gatchel, 1980). This lack of control over the environment causes the dormitory residents to experience elevated feeling of crowding (Baum & Valins, 1977). Similar to this, Gove, Hughes, and Galle (1979) reported that objective crowding hinder an individual's capability to control household space, which can create conflicts, negative feelings, and disrupt the preferred and routine activities (Baldassare, 1981).

Studies done on different residential settings revealed that control is an important variable, which mediates the emotional and physical reactions to crowding (Nagar, 2004). Perceived control helps to protect against crowding, while low level is linked with heightened perception of crowding (Dion, 2004). Having a general understanding and control over the situation helps people to adjust as well as cope with the crowding and its consequences (Greenberg & Baum, 1979). Rodin, Solomon and Metcalf (1978) revealed that control mediates the response to a higher density like affect and happiness, and is related to the experience of crowding.

Perceived crowding is a negative and subjective experience of density (Rapoport, 1975), and control plays as a mediator in the relation among density and perceived crowding (Hui & Bateson, 1991). As perceived crowding is a negative experience, it negatively affects the behaviour and emotions of the individual (Stokols, 1972). Perceived crowding is considered as the function of perceived control (Hui & Bateson, 1991), so we can assume that perceived control will mediate the reactions of perceived crowding.

Hypothesis 4: Perceived control will mediate the relationship between residential crowding and subjective wellbeing among dormitory residents.

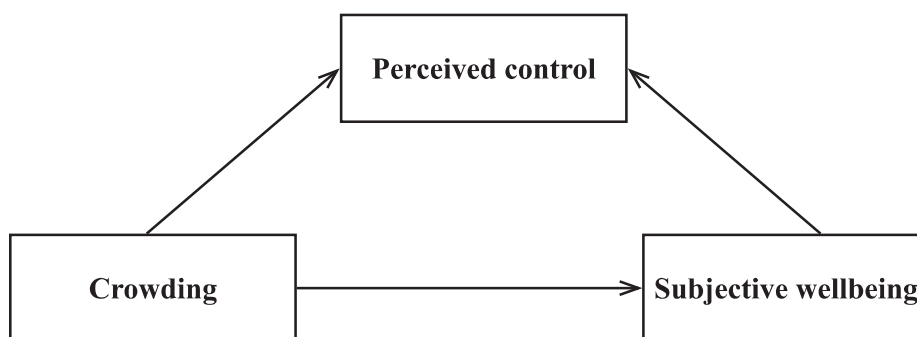


Figure 1: Proposed model with hypothesized mediating role of perceived control on the relation between crowding and subjective wellbeing.

Method

Participants

The study included 448 students staying in a dormitory of Pondicherry University, comprising of 243 males and 205 females with an age group ranging from 17 to 25 years. Initially, questionnaires were administered to 500 students, out of this, 448 completed questionnaires were received. Simple, random sampling was used. The highest numbers of respondents of the study were males (54.2 per cent) and post-graduate students (71.2 per cent) as compared with females (45.8 per cent) and under-graduate students (28.8 per cent) respectively. The average age of the participants was 21 years.

Measures

Three self-reported questionnaires were used to measure the constructs.

Residential crowding: The researchers used Residential crowding experience tool prepared by Nagar and Paulus (1997). It has 26 items that measure four dimensions namely, Negative relationship (NR), Space satisfaction (SS), Uncontrolled disturbances (UD) and Positive relationship (PR). The sample items include, 'How spacious is your dormitory?' (Item of space satisfaction), 'To what extent are the residents of your dormitory the kind of people with whom you can communicate easily?' (Item of positive relationship), 'How often do others in your dormitory make unwanted demands on you?' (Item of negative relationship), 'How often are you disturbed by noise from people and their activities inside the dormitory?' (Item of uncontrolled disturbance). The Cronbach alpha of the scale is .75.

Subjective wellbeing: It was measured by using Subjective wellbeing inventory (Diener, Emmons, Larsen & Griffin, 1985). It is a five-item scale. Sample items include "I am satisfied with my life" and "In most ways my life is close to my ideal". The Cronbach alpha of the scale is .74.

Perceived control: It was measured by using 30 items of Spheres of Control- 3 scale

(Paulhus, 1990), which assesses three domains of control namely Socio-political, Interpersonal and Personal control. Sample items include "I can usually achieve if I work hard on it" (item of personal control), "I have no trouble making and keeping friends" (item of interpersonal control), "By taking an active part in political and social affairs, we, the people, can influence world events" (item of socio-political control). The Cronbach alpha of the scale is .84.

Data analysis

By using SPSS version 20, descriptive statistics and the correlation analysis were carried out. Confirmatory Factor Analysis (CFA) was performed to test the construct validity using Amos v.20. Also, mediational analysis was done by using Amos version 20 and significance of indirect effect was tested using bootstrapping in Amos (Muthen & Muthen, 2007). Mediation was tested with subjective wellbeing as an outcome variable, crowding as a predictor variable and perceived control as a mediating variable.

Structural Model

Figure 3 represents the path diagram of the model analyzing the interactive effect of residential crowding on subjective wellbeing, mediated by personal control. In the present model, we analyze the direct effects of exogenous variable on perceived control and subjective wellbeing; direct effect of perceived control on subjective wellbeing; and indirect effects on subjective wellbeing.

Results

CFA of Residential Crowding Scale

Confirmatory factor analysis of Residential crowding scale was administered to identify how the standardized regression weights of crowding explains the relationship between the latent factors (negative relationship, space satisfaction, uncontrolled disturbances and positive relationship) and indicators (items of the respective latent factors). Table 1 represents the CFA of six models for residential crowding. To get the appropriate model, step by step assessment of each model was carried out by

Table 1: Standardized Regression weight, Cronbach alpha and Goodness of fit measures after performing CFA of Residential Crowding scale

| | Model 1 (26 items/ 4 factors) | Model 2 (22 items/ 4 factors) | Model 3 (20 items/ 4 factors) | | Model 4 (26 items/ 4 factors) | Model 5 (16 items/ 4 factors) | Model 6 (15 items/ 1 factor) | |
|--------------------------------|-------------------------------------|-------------------------------------|--|----------------|-------------------------------------|-------------------------------------|------------------------------------|----------------|
| Space Satisfaction (SS) | β | β | β | Cronbach alpha | β | β | β | Cronbach alpha |
| SS1 | .54** | .69** | .68** | | -.17 | ---- | ---- | |
| SS2 | .70** | .64** | .89** | | .31** | .32** | .31** | |
| SS3 | .89** | .84** | .79** | | .38** | .39** | .35** | |
| SS4 | -.03 | ----- | ----- | | .01 | ---- | ---- | |
| SS5 | -.15 | ----- | ----- | | .41** | .38** | .37** | |
| SS6 | .46** | -.18 | ----- | | -.02 | ---- | ---- | |
| SS7 | .30** | .28 | ----- | | .39** | .35** | .37** | |
| SS8 | -.23 | ----- | ----- | | .28 | ---- | ---- | |
| SS9 | .11 | ----- | ----- | | -.18 | ---- | ---- | |
| Positive Relation (PR) | | | | | | | | |
| PR1 | .45** | .49** | .49** | | .31** | .32** | .30** | |
| PR2 | .46** | .43** | .42** | | -.10 | ---- | ---- | |
| PR3 | .61** | .71** | .39** | | .42** | .35** | .37** | |
| PR4 | .54** | .49** | .71** | | -.15 | ---- | ---- | |
| PR5 | .75** | .68** | .46** | | .42** | .43** | .44** | |
| PR6 | .61** | .55** | .69** | | .52** | .51** | .49** | |
| Negative Relation (NR) | | | | | | | | |
| NR1 | .67** | .57** | .68** | | .33** | .26 | ---- | |
| NR2 | .75** | .77** | .75** | .72 | .49** | .48** | .48** | .75 |
| NR3 | .54** | .54** | .54** | | .29 | ---- | ---- | |
| NR4 | .38** | .38** | .38** | | .25 | ---- | ---- | |
| NR5 | .32** | .66** | .66** | | .40** | .45** | .40** | |
| NR6 | .77** | .75** | .74** | | .69** | .72** | .75** | |
| Uncontrolled Disturbances (UD) | | | | | | | | |
| UD1 | .41** | .45** | .45** | | .46** | .45** | .51** | |
| UD2 | .68** | .68** | .68** | | .68** | .67** | .69** | |
| UD3 | .63** | .68** | .68** | | .68** | .69** | .63** | |
| UD4 | .84** | .84** | .82** | | .78** | .81** | .78** | |
| UD5 | .16 | ----- | ----- | | .24 | ---- | ---- | |
| Goodness of Fit measures | | | | | | | | |
| χ^2 | 2585.78 | 958.12 | 726.77 | | 2585.78 | 437.46 | 71.86 | |
| Df | 299 | 161 | 125 | | 299 | 77 | 27 | |
| GFI | .60 | .73 | .76 | | .53 | .77 | .94 | |
| NFI | .33 | .52 | .58 | | .19 | .52 | .90 | |
| CFI | .36 | .56 | .57 | | .21 | .56 | .93 | |
| RMSEA | .18 | .16 | .15 | | .19 | .15 | .07 | |
| PGFI | .50 | .56 | .55 | | .45 | .57 | .46 | |

β stands for standardized regression weight

** P <.01 level of significance

Table 2: Standardized Regression weight, Cronbach alpha and Goodness of fit measures after performing CFA of Perceived control

| | Model 1 (30 items / 3 factors) | | Model 2 (30 items/1factor) | Model 3 (18 items/1factor) | |
|-------------------------------|--------------------------------------|-------------------|-------------------------------|-------------------------------|-------------------|
| Personal Control (PC) | β | Cronbach alpha | β | B | Cronbach alpha |
| PC1 | .11 | | -.21 | ---- | |
| PC2 | .45** | | .51** | .80** | |
| PC3 | .04 | | .16 | ---- | |
| PC4 | .08 | | .41** | .34** | |
| PC5 | .28 | | .39** | .46** | |
| PC6 | .80** | | .38** | .37** | |
| PC7 | .18 | | .84** | .45** | |
| PC8 | .03 | | -.16 | ---- | |
| PC9 | .19 | | .08 | ---- | |
| PC10 | .13 | | -.13 | ---- | |
| Interpersonal Control (IC) | | | | | |
| IC1 | .13 | | .61** | .60** | |
| IC2 | .19 | | .32** | .73** | |
| IC3 | .07 | | .19 | .40** | |
| IC4 | .30** | | -.05 | ---- | |
| IC5 | -.04 | | .32** | .37** | |
| IC6 | .31** | | .57** | .42** | |
| IC7 | .86** | | .34** | .32** | |
| IC8 | .32** | .72 | .61** | .44** | .77 |
| IC9 | -.01 | | .36** | .35** | |
| IC10 | .10 | | .36** | .32** | |
| Socio-political Control (SPC) | | | | | |
| SPC1 | -.29 | | .14 | ---- | |
| SPC2 | .20 | | -.16 | .48** | |
| SPC3 | .22 | | .12 | ---- | |
| SPC4 | .39** | | .48** | .50** | |
| SPC5 | -.02 | | .02 | ---- | |
| SPC6 | -.18 | | .07 | ---- | |
| SPC7 | -.18 | | .34** | .32** | |
| SPC8 | .05 | | -.21 | ---- | |
| SPC9 | .19 | | .19 | ---- | |
| SPC10 | .89** | | .50** | .43** | |
| Goodness of Fit Measures | | | | | |
| χ^2 | 328.31 | | 258.28 | 37.03 | |
| Df | 405 | | 45 | 15 | |
| GFI | .50 | | .65 | .97 | |
| NFI | .15 | | .71 | .92 | |
| CFI | .16 | | .59 | .95 | |
| RMSEA | .18 | | .15 | .04 | |
| PGFI | .43 | | .50 | .40 | |

β stands for standardized regression weights

** $p < .01$ level of significance

removing items with low standardized regression weight ($\beta \leq .30$). In the measurement model 1 (26 items/4 factors), all the other items except SS4 (-.03), SS5 (-.15) and SS9 (.11) under space satisfaction dimension and UD5 (.16) in uncontrolled disturbances reported less than .30 factor loading. All the GOF measures reported less than .90 (GFI: .60, NFI: .33, CFI: .36).

Again, CFA of residential crowding with four factors was applied after removing all factors with low item loading. In model 2, SS7 (-.18) and SS8 (.28) showed low β weight. The model 3 (20 items/4 factors) showed better GOF measures than model 2 but, still lack the required GOF measures. Then the researcher again conducted the CFA of residential crowding with a single or a core factor to get an improved model. In model 4 (26 items/1 factor), ten items showed less than .30 factor loadings and again model 5 (16 items/ 1 factor) was applied after dropping ten items. Model 5 showed better goodness of fit measures (GFI: .77, NFI: .52, CFI: .56) than model 3. However, it is an unacceptable model.

So, after removing low factor loading items and applying modification indices the model 6 (15 items/ 1 factor) was run. This model showed satisfactory fit measures and RMSEA. All the GOF measures covered the required level of .90 (GFI: .94, NFI: .90, CFI: .93). The RMSEA of the model is .07, which is good for model appropriateness. Thus, the one factor model of residential crowding fit well to the sample than the four-factor model. The internal consistencies of both four-factor and uni-factor models were checked. The uni-factor/single factor residential crowding model reported higher Cronbach alpha (.75) than the four-factor model (.72). Thus, the tool with the single factor of residential crowding was used for the present sample.

CFA of Perceived Control Scale

The CFA of 30 items of the perceived control scale was carried out through three different models (see Table 2). Models were evaluated based on standardized regression weight ($\beta \leq .30$), GOF measures and Cronbach alpha. In model 1 (30 items/ 3 factors) all the items except

PC2 (.45), PC6 (.80), IC4 (.30), IC6 (.31), IC7 (.86), IC8 (.32) and SPC (.39) showed factor loading less than .3. The model also exhibited poor GOF measures (GFI: .50, NFI: .15, CFI: .16). Then the CFA of perceived control with single factor was checked in model 2 (30 items/1 factor). All the items except PC1 (-.21), PC3 (.16), PC8 (-.16), PC9 (.08), PC10 (-.13), IC4 (-.05), SPC1 (.14), SPC3 (-.16), SPC5 (.02), SPC6 (.07), SPC8 (-.21) and SPC9 (.19) showed factor loading more than .3. The model showed better GOF measures and RMSEA as compared with model 1. Again, CFA of the perceived control was performed in model 3 (18 items/1 factor) after removing all items with low factor loadings. Model 3 exhibited to be a good model fit with GFI: .97, NFI: .92, CFI: .95, RMSEA: .04 and PGFI: .4. The Cronbach alpha of the models was also checked. Perceived control as an overall construct (model 3) represented higher Cronbach alpha.

CFA of Subjective Wellbeing

Table 3: Standardized Regression weight, Cronbach alpha and Goodness of fit measures after performing CFA of Subjective wellbeing

| Model 1 (5 items/ 1 factor) | | Cronbach alpha |
|-----------------------------------|---------|-------------------|
| Subjective Wellbeing (SWB) | β | |
| SWB1 | .65** | .84 |
| SWB 2 | .79** | |
| SWB 3 | .77** | |
| SWB 4 | .60** | |
| SWB 5 | .31** | |
| Goodness of Fit Measures | | |
| χ^2 | 12.64 | |
| Df | 4 | |
| GFI | .99 | |
| NFI | .97 | |
| CFI | .99 | |
| RMSEA | .05 | |
| PGFI | .26 | |

β stands for standardized regression weight

** $p < .01$ level of significance

Table 3 shows the standardized regression weights, GOF measures and Cronbach alpha of subjective wellbeing. All the items in the scale showed good β values and GOF measures (GFI: .99, NFI: .97, CFI: .99, PGFI: .26 and RMSEA: .05). The Cronbach alpha (.84) was also checked.

Table 4: Descriptive statistics, Cronbach alpha and Pearson correlation coefficient

| Variables | Mean | SD | 1 | 2 | 3 |
|-------------|-------|------|--------|-------|-------|
| 1 Crowding | 47.81 | 5.17 | (.75) | | |
| 2 Control | 97.16 | 9.51 | -.09* | (.77) | |
| 3 Wellbeing | 7.00 | 1.42 | -.21** | .09* | (.84) |

N= 448; ** $p \leq .01$, * $p \leq .05$

Values inside the diagonal parentheses are Cronbach alpha

Crowding shows a significant and negative correlation with subjective wellbeing (-.21**) and perceived control (-.09*). However, perceived control and subjective wellbeing (.09*) were significantly and positively correlated in the present sample.

Mediational Analysis

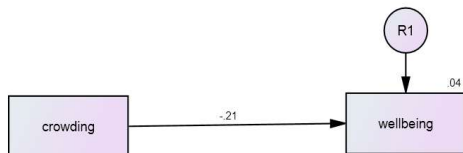


Figure 2: Standardized estimate of direct model showing direct effect of crowding on wellbeing

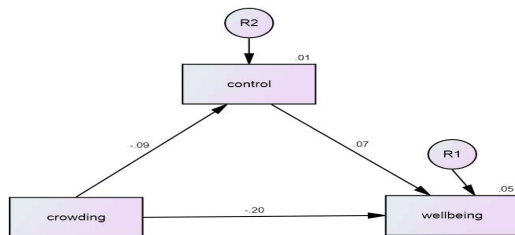


Figure 3: Standardized estimate of indirect model sharing indirect effect of crowding on wellbeing through control

An estimated, direct model between crowding and subjective wellbeing analysed through Structural Equation Modelling is represented in Figure 2. It shows a significant negative path from crowding to subjective wellbeing ($\beta = -.21$).

Table 5: Standardized regression weight, standard error and fit measures of indirect model for crowding and wellbeing through perceived control

| Path | B | SE | C.R |
|---------------------|--------|-----|-------|
| PC \leftarrow CR | -.09* | .09 | -1.99 |
| SWB \leftarrow PC | .07* | .07 | 1.59 |
| SWB \leftarrow CR | -.21** | .01 | -4.36 |

** $p \leq .01$, * $p \leq .05$

$\chi^2 = 8.87$, Df= 3, Normed $\chi^2 = 2.95$, $p = .03$, GFI= .99, NFI= .96, CFI=.97, RMSEA= .05, PGFI= .08

Table 5 represents the estimated direct path between crowding and subjective wellbeing through perceived control. It shows a significant negative path from crowding to perceived control ($b = -.09$) and a significant positive path from perceived control to crowding ($b = .07$).

Table 6: Standardized regression weight and p values of direct effect with and without mediators

| Relationship | Direct without mediator | Direct with mediator | Indirect |
|--------------|-------------------------|----------------------|-----------|
| CR PC | -.21 | -.20 | Partial |
| SWB | (.001) | (.000) | Mediation |

Table 6 shows the p values for the path coefficient in bootstrapped method for direct without mediator and direct with mediator. The β value of direct with mediator is -.21 which is significant at .001 levels. The β value of direct with mediator is -.20 (.000). In the direct effect with mediator the β value has slightly reduced and but, is significant, which indicates partial mediation of perceived control on crowding-wellbeing relationship. The model (Figure 3) is showing good fit measures (GFI: .99, NFI: .96, CFI: .97) as recommended by Kline (2005). The RMSEA is .05, which also indicates good model fit (Browne & Cudeck, (1993).

Discussion

The findings of the correlation analysis as well as regression coefficients propose that the

relation among crowding and subjective wellbeing is significant and negative. The elevated levels of crowding affect the subjective wellbeing of the residents. This result is supported by some previous study findings (Schwab, Nadeau, & Warheit, 1979; Gove & Hughes, 1983). They reported that the deprivation of privacy and excessive demands experienced in crowded residence has a significant effect on health and wellbeing. A few of the Indian studies carried out on crowding shows that space satisfaction and negative relationship (components of crowding) is a major predictor of emotional health and psychological wellbeing (Nagar & Paulus, 1997; Jain, 1997; Neethu & Sia, 2017). Similarly, Sunita (2015) reported that crowding is constantly associated with unpleasant affect, which is one of the significant components of subjective wellbeing. Likewise, findings indicates a negative relationship among crowding and control, that matches with some previous findings (Gifford, 1987). High density probably lowers our sense of control (Gifford, 1987). Corroborating with some previous studies, the result shows that perceived control is a strong predictor of subjective wellbeing (Cummins & Nistico, 2002). Control reflects one's self image and personal competency and it facilitates the individual to use effective coping strategies (Miller, 1979). Thus, loss of control can affect the wellbeing of the individual.

To the investigators knowledge, there were not enough studies in Indian context regarding the mediating role of perceived control on crowding and subjective wellbeing relationship. To verify the fourth hypothesis, structural equation modelling was performed. The result shows a significant and negative path between crowding and subjective wellbeing. The mediation analysis indicated the partial mediation of perceived control on crowding and subjective wellbeing relation.

Studies done on varieties of residential settings revealed that control is an important variable, which mediates the emotional and physical reactions to crowding (Hui & Bateson, 1991; Nagar, 2004). Individuals feel and behave more positively to the situations where they perceive more control over the environment. If the dormitory residents are encountered with unwanted social interactions they experience lower control over the environment and exhibit

a feeling of in-cooperation and competition with other residents (Baum & Gatchel, 1980). This lack of control over the environment causes the dormitory residents to experience elevated feeling of crowding (Baum & Valins, 1977; Baldassare, 1981).

Conclusion

The present study indicates several conclusions. First, students living in crowded dormitories experience low level of subjective wellbeing. Second, crowding lowers the sense of perceived control of the students. Also, perceived control facilitates the subjective wellbeing of the students. Finally, the study found that perceived control mediates the negative impact of crowding on subjective wellbeing. Thus, the present study sheds light on how crowding influences wellbeing of the dormitory students and how perceived control mediates its negative effects.

The findings suggest that it may be beneficial for educational institutions to foster perceived control of the students through programmes and interventions. Counselling and other behavioural interventions should be provided for students living in crowded dormitories with low perceived control, which can help them to overcome the negative effects of crowding, which hinder wellbeing. The research provides an insight about how perceived control mediates the negative reactions of crowding.

However, the limitations of the study includes: the sample was collected only from one place/environment. So, the effects of various environmental factors (e.g.: climate, facilities etc.) could not be identified. The study has not taken into account the socio-demographical variables that may have some effect on perceived crowding and wellbeing of the residents. Finally, the research considered perceived control only as mediator variable in the relationship between crowding and subjective wellbeing, so further studies with perceived control as a moderator variable is also recommended. Future researches may make an attempt to look into these aspects.

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Manuscript submitted on January 28, 2017

Final Revision Received on July 6, 2017

Accepted on July 19, 2017

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