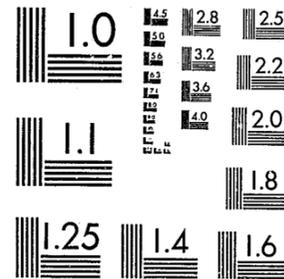


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THE EFFECTS OF CROWDING IN A CORRECTIONAL SETTING: A REVIEW OF THE LITERATURE

Final Report to the National Institute of Justice
US Department of Justice

Jerry R. Grammer, Director of Program Evaluation and Research
Lynn Dawson, Program Evaluator
Texas Youth Council
Austin, Texas

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U.S. Department of Justice
National Institute of Justice

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The Effects of Crowding in a Correctional Setting:
A Review of the Literature

Recent public opinion shifts toward a stronger "law and order" approach to the increasingly growing crime rate in the United States have resulted in a greater number of convicted and incarcerated juveniles and adults and stricter parole policies. The consequences of the resulting high density of these institutionalized juveniles and adults are of critical importance to correctional institutions across the United States. While some disagreement exists among authorities regarding the causes and consequences of crowding, certain conclusions on this topic can be drawn. The following report is a summary of the theoretical and practical study of crowding by psychologists and authorities in the field of corrections.

Definition of Crowding

Numerous definitions of crowding, high density, and distance zones are suggested by authorities in the field. Lawrence S. Wrightsman (1977) describes four distance zones:

- An intimate zone of up to 1 and 1/2 feet,
- A personal distance zone from 1½ to 4 feet for friends,
- A social zone from 4 feet to 12 feet for business purposes,
- And finally a public zone from 12 feet to 25 feet for formal interaction and conversations with important figures.

High population density occurs when a concentration of a large number of people in the same area produces a shortage of space. Consequently, these territories or distance zones are violated.

Andrew Baum and Yakov M. Epstein (1978) suggest that crowding is a state of high psychological stress that sometimes accompanies high population density. Wrightsman (1977) states that during a personal space invasion, or in a situation involving too many simultaneous interaction partners, prolonged interaction leads to coping mechanisms which may or may not reduce stress. After-effects or possible cumulative effects may occur.

Variables Related To Crowding

Numerous variables are related to crowding. Baum, et al (1978) suggest that duration of exposure, predictability of exposure, current desire for social stimulation, perceived origin of interpersonal events, and perception of control over exposure all influence the perception of crowding. Additional physical antecedents of crowding are architectural features that increase the number of potential interactions and complex settings involving numerous pictures on the walls or large expanses of windows.

Wrightsmen (1977) discusses situational effects of crowding such as a primary versus a secondary setting (a bedroom versus a family room), a formal versus an informal occasion, the intimacy of the conversation topic, the location of the person in the room (corner of the room versus center of the room), and a recreational versus a work setting. Individual differences in interpersonal space are also important to the perception of crowding. Men prefer a larger interpersonal distance than women, and people in general stay farther away from men than women. Women may be more sensitive to long-term crowding however. Highly anxious people need a larger interpersonal distance, and people tend to keep a larger interpersonal distance between themselves and those persons perceived as having a personality disorder. Additionally, personality disorders can result in disturbed or abnormal interpersonal distances. Middle and upper socio-economic groups appear to need a larger interpersonal distance than lower socio-economic groups. Research data on group distances between sub-cultures are inconsistent at this time. People are more adversely affected by personally oriented crowding than neutral crowding. Personally oriented crowding would occur when one person sits too close to another person on a park bench even though no one else is near. Neutral crowding occurs when a large number of people crowd into the same elevator. Men and women are more affected by crowding when the intruder is a person perceived as dissimilar culturally or in their beliefs.

Numerous authors suggest that high density per se is not offensive, but that adverse events that sometimes accompany high density tend to result in a perception of crowding. Baum, et al. (1978) suggests that it is impossible to determine when a person will feel crowded simply by looking at the available space. Adverse effects of crowding are minimized when relations among people are cordial, when

their activities are compatible, and when resources are adequate to allow people in this high density area to adjust to the changing situation.

Regional and cultural differences in the perception of crowding are discussed by Wrightsman (1977). He concludes that the presence of regional and cultural differences in response to high density studies are too conflicting to make definitive statements about the differences between groups.

Reactions to Crowding

Attention overload, difficulties of coordination of activities, and reduced opportunities to make choices are consequences of crowding. Baum, et al. (1978) states that population density results in attentional overload and difficulty in coordination of activities. Additionally, people are less likely to try to control the situation even when control is possible, and consequently decrease efforts to make choices and actively affect their physical and social environment.

Wrightsman (1977) describes typical reactions to crowding as withdrawal, a dramatic decrease in motor activity, and signs of distress. Male invaders typically generate faster flight than female invaders. Aggressive behavior is also a common response to crowding. This aggression may be related to competition for resources and frustration from excessive social interaction and curtailment of physical activities. Baum, et al. suggests that crowding leads to a mutual dislike of group members in a high density area. Brief exposure to high density does not appear to affect performance on simple tasks but is detrimental to the performance of complex tasks under some circumstances. People become more punitive and attribute nervousness to other group members.

Coping Behaviors

Wrightsman (1977) suggests that people use laughter as a means of coping with crowded situations. Additionally, people looked less often at their partner's face, used fewer gesturing motions, less head nodding, and were less willing to

discuss personal topics. Baum, et al. (1978) suggests that people who were informed of crowding before a crowded situation were more comfortable and efficient than those who were not so informed. People attempted to cope with a crowded situation by simplification of behavior pattern, adherence to norms, and adherence to the rulings of authority.

Baum suggests providing information about the physical and social environment as well as information about the effects of crowding to those about to enter a crowded situation as a means of helping them cope with the situation. The perception of crowding can also be minimized by supporting historically developed behavior patterns in a high density area, by attempting to insure homogeneity in terms of cultural and sociological backgrounds and beliefs, and providing constant monitoring for conflicts that will inevitably arise from incompatibility within the group members.

Bedding or chairs placed back to back or head to head rather than face to face in a high density area will reduce the participant's perception of crowding. Visual distractions such as pictures on the wall or windows will also have the same result.

Wrightsman (1977) discusses coping behaviors of confined groups in a crowded situation. Patients confined to mental hospitals established their own territories or spaces in relation to the dominance hierarchy of their informal social organization. Disruption of this territoriality was associated with a breakdown in their social organization.

After-effects and Cumulative Effects of Crowding

Baum, et al. (1978) describes poor health, aggression, withdrawal among males, fatigue and low performance levels as common cumulative effects and after-effects of crowding. He further states that the effects of crowding may diminish to an extent over time, but at the same time stress may increase over time under some circumstances. Additionally, the threshold for crowding remains relatively constant in different situations. People who live under crowded conditions within their home are less likely to feel crowded on the street in a high density area than people who are less crowded in their home.

Consequences of Crowding for Children and Adolescents

Baum et al. (1978) concurs with other authorities in the field of crowding that the young are more severely affected by crowding than are adults. This crowding results in increased nervousness, decrements in physical and intellectual development and a decreased propensity to control a situation even when control of the situation is possible. There is speculation that a suspension or general inhibition of maturation may occur if a child is subjected to crowded conditions over extended periods of time.

Crowding in Prison Populations

Studies on the causes and effects of crowding in prison populations indicate that intense inescapable crowding produces high levels of stress that can lead to physical and psychological impairment. The overall density of the population of an environment can have important consequences for the health of the inhabitants.

Social and Spacial Density in Prison

Paulus, McCain, and Cox (1978) suggest that both the amount of space, or spacial density, and the total number of residents within a room, or social density, must be considered in the negative effects of crowding. Paulus and McCain, Cox and Paulus (1976) suggest that in prison crowding, the social density factor of crowding is a more important stressor than spacial density.

McCain, Cox, and Paulus (1980) state that the degree to which an inmate has his or her own space or territory may be the determining factor in the effects of crowding. Adequate territory can serve to reduce social stimulation, to reduce negative social encounters, and finally to increase one's sense of control over interaction with others.

Stress Related Behavior in Prison Crowding

Studies on prison populations suggest that as population density increases illness complaints, psychiatric commitments, and suicide attempts increased. McCain, Cox, and Paulus (1980) suggest that illness complaint behavior increased under stressful conditions in a high density prison population. Paulus determines that crowding is related to the number of illness complaints of a psychosomatic nature. McCain, Cox, and Paulus (In press) find that higher illness complaint rates were found in conditions of limited space and high social density.

McCain, Cox, and Paulus (1976) found that crowding positively related to high illness complaint rates in jail settings. Additionally, as the population density increased, psychiatric commitments also increased. McCain, et al. (1980) found that while inmate's evaluation of the environment were strongly determined by social and spacial densities, mood states of the inmates were found to be more dependent on their custody level and their length of confinement. They also found that suicide rates rose with the number in the population. Paulus, et al. found higher population densities yielded more negative effective response to the physical environment by the inmates.

Physiological Effects of Crowding in Prison Population

Blood pressure rates, death rates and physiological expressions of stress such as the Palmer sweat prints have been studied by authorities in the field of crowding. McCain, et al. (1980) found no consistent density related effect on blood pressure. McCain, et al. (In press) cites an article by Datri which states that blood pressure was higher in prison dormitories than in single cells. McCain concludes that blood pressure is not reliably related to housing, but his findings suggest that under certain circumstances, crowding can result in an elevated blood pressure.

Paulus, et al (1978) suggests that blood pressure was higher in more crowded housing situations. Additionally prisons in high population years yielded higher death rates. McCain, et al. (1980) determined that the larger the institution in total population, the higher the death rate, suicide rate, and psychiatric commitment. McCain, et al. (In press) states that death rates vary with institutional population levels.

Paulus and Cox, et al. determined that high levels of crowding in prisons and on offshore drilling platforms can increase physiological expressions of stress such as the Palmer sweat prints.

Additional Variables Related to Perception of Crowding in Prison Population

McCain, et al. (1980) suggest that while small variations in space are not related to strong effects, space may be an important factor when the inmate is confined for long periods of time to a space during the day. Additionally, inmate ratings may be relative. Inmates may be evaluating housing to other housing in a prison population and not to the outside environment. Males, females, blacks, whites, Mexican-Americans, and Mexican nationals show similar reactions to prison housing. Overall, Anglo-Americans were most negative towards high density population and Mexican-Americans were least negative. In general, once inmates have 50 square feet of territory or more, the number of people the inmate lives with and the space arrangements become the main factors in determining crowding.

Curran, Blatchley and Hanlon (1978) indicate that violent inmates had greater sensitivity to approach than non-violent inmates on both subjective and objective measures.

The above mentioned studies all suggest that the length of the confinement of an inmate within an area and a history of violent behavior contributed to the inmates perception of crowding. While the sex of the inmate and the ethnic or racial background of the inmate did not show a strong relationship to his/her perception of crowding, Mexican-nationals seemed to be the least affected by a high density population.

Adaptation to Crowding by Inmates in Prison Situations

Studies indicate that inmates failed to adapt to a crowded situation within the prison setting and, in fact, become more sensitive to the crowding over time. Cox, et al. found a decreased tolerance for crowding in relation to social density over time. Paulus, et al. (1975) found inmates who were housed under highly crowded conditions exhibited less tolerance of crowding than those who were housed in less crowded conditions.

Statistics on Crowding

Paulus used the Congressional Committee on Federal Prisons statistics to determine square footage of cell space in the Texarkana Federal Correctional Institute. Architects recommend that each person have at least 350 square feet of movement space. Prison systems at this time are moving toward 80 square feet per person. In the federal prison mentioned above, forty-eight percent of the inmates had less than 45 square feet. Eighteen percent of the inmates had 65 square feet or more, while in large maximum security facilities in the Federal Prison System, eighty-five percent had less than 45 square feet per inmate. Eight percent of the inmates had more than 45 square feet. The Huntsville State Prison in Texas had eleven square feet for each inmate. Huntsville dorms housed from 50 to 75 inmates.

Recommendations for Prison Facilities

McCain et al. (1980) suggests that single cells are more desirable than double cells and that open dorms are the least desirable of all facilities. However, dorms can produce relatively favorable reaction if single rather than double bunking is used and the dorms are spacious. Additionally, the perception of crowding in dorms is reduced by the use of bays in the dorms, or by dividing the dorms into small cubicles with partitions. This study indicated that camps at a low security level were rated favorably by inmates even though the inmates were housed four to a cubicle.

Conclusions

The above studies suggest that the regimentation of the prison environment, the small space available to each inmate, the high spacial and social density in the primary versus the secondary environment, the perception of control over exposure to crowding, the lack of architectural features such as large expanses of windows, pictures or other distractors, and the predominance of crowding in both work and recreational settings contributes to an increased perception of crowding.

Other factors contributing to an increased perception of crowding in prisons are the need for males for larger interpersonal distance zones, the existence of high anxiety levels among many of the inmates, the possible disruption of normal interpersonal distance zones by personality disorders in inmate, and the existence of heterogenous groups on ethnic, social, and cultural levels. The result of the above mentioned variables on the inmate's perception of crowding is an inmate of apathic demeanor who fails to make choices for himself/herself. The inmate becomes either immobile or reacts in a violent or excessively aggressive manner.

Stress resulting from the high social and spacial density in a prison environment results in increased illness complaints of a psychosomatic nature such as colds and sinus related problems.

It is concluded that the consequences of crowding in children and adolescents are more pronounced in the above mentioned areas than for adults in comparable circumstances.

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