

Scared Sick: Relating Fear of Crime to Mental Health in Older Adults

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Abstract

The factors that determine the health and well-being of older populations are increasingly recognized as critical public health issues. The focus of this review article is to provide evidence for the role of fear of crime in determining the mental health of older populations. The fear of crime is a complex construct, as the vast majority of fear is not related to actual rates of victimization. Here, we synthesize the literature on fear of crime and how the physical and social environment can profoundly affect mental health outcomes. The review presents some plausible physiological mechanisms by which fear of crime may directly or indirectly affect the life span development of the brain to modulate mental health in an effort to aid further development of research in this area.

Keywords

mental health, fear of crime, aging, review article

Introduction

As the mean age increases around the world, the factors that determine the health and well-being of older populations are increasingly recognized as critical public health issues (Mawby, 2004). Within this research area, one can find two broad lines of inquiry—a literature investigating how the physical and social environment affects mental health outcomes, and a body of research showing how fear of crime (FOC) and victimization affects the way older adults live and behave. The current article aims to synthesize these diverse literatures for the interested reader, and presents some plausible physiological mechanisms through which FOC may directly or indirectly affect the life span development of the brain to modulate mental health in an effort to aid further development of research in this area.

The Environment and Mental Health

The impact of both the physical and social environment on an individual's mental health has long been appreciated (Faris & Dunham, 1939; Srole et al., 1962). In particular, a great deal of research has shown that an older adult's neighborhood of residence is an important determinant of his or her mental health. Neighborhood characteristics such as affluence, inequality, and residential stability can significantly affect health even after controlling for a number of individual-level factors (Beard et al., 2009; Boardman, Finch, Ellison, Williams, & Jackson, 2001; Chaix, Rosvall, & Merlo, 2007; Diez, 2001; Subramanian, Kubzansky, Berkman, Fay, &

Kawachi, 2006). A number of theories have been proposed to explain the association between neighborhood characteristics and mental health outcomes. Researchers have proposed that neighborhoods with greater disadvantage and/or inequality inherently have lower levels of social cohesion and weaker capacity for social control (Sampson, Morenoff, & Gannon-Rowley, 2002). The lack of cohesion often results in poor social organization and lower levels of trust, which both provide a chronic stressor and inhibit the ability of social networks to buffer stress (Lin, Ye, & Ensel, 1999; Ross & Mirowsky, 2001; Sampson, Raudenbush, & Earls, 1997; Sampson & Raudenbush, 2004). A critical mediator in this relationship between neighborhood and mental health may be FOC. Since the term first emerged in the late 1930s, widespread discourse concerning FOC emerged among professionals and academics, quickly turning FOC into an established social scientific concept (Lee, 2007). Furthermore, data indicate that increases in the rate of crime coverage may be driving the growth of FOC (Critcher, 2008; Ericson, 2007; Lee, 2007; J. Taylor, Eitle, & Russell, 2009). As such, this article attempts to provide a timely synthesis of the evidence for the role of FOC in determining the mental health of older populations.

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Fear of Crime as a Key Environmental Determinant of Mental Health

FOC is a complex construct used to explain a range of both psychological and social reactions to perceived threats of crime and/or victimization. Adding to this complexity is the fact that FOC can be measured in many ways (Hale, 1996; Pain, 2001). When asking participants about their FOC, some studies (for instance) distinguish between the cognitive assessment of the risk of being victimized and the affective state of fear (e.g., Cossman & Rader, 2011; Killias, 1990). Moreover, some studies use a binary forced choice, while others allow participants to rank their fear on a continuum. In addition, respondents may be asked about fear of crime in general, about one or more specific crimes (e.g., mugging), and/or in one or more specific circumstances (e.g., while walking alone at night). It is possible for any of these methodological differences to have a profound impact on the results that are obtained. Despite these differences, the vast majority of studies find that FOC is unrelated to actual rates of victimization (Hale, 1996). This is because perceptions are what drive the FOC, rather than objective measures of risk (Brunton-Smith, 2011; Brunton-Smith, Jackson, & Sutherland, 2014). It is logical to include in this discussion that the constant exposure to constructions of the criminal Other and finding people who match those depictions within their neighborhood can also manipulate this subjective sense of risk. Thus, it is not surprising to find that substantial literature exists which demonstrates that marginalization, particularly marginalization based on race, and FOC are linked (Greer, 2007; Larson, 2006; Miller, Like, & Levin, 2006). A relationship between FOC and the racial composition of place has been widely assumed in social science literature (Chiricos, McEntire, & Gertz, 2001), as studies have shown that the presence of minority groups in a neighborhood affects fear levels far more than actual crime statistics (Chiricos, Hogan, & Gertz, 1997; Liska, Lawrence, & Sanchirico, 1982; Rader, May, & Goodrum, 2007; Skogan, 1995).

Factors affecting social disorder may also play a role in the production of fear and perceived risk. Incivilities, or physical signs of social disorder such as litter, graffiti, and abandoned buildings, have been shown to correlate with local FOC (Covington & Taylor, 1991; R. B. Taylor & Covington, 1993; Sampson & Raudenbush, 2004). This variable, however, is inextricably tied to race. Neighborhoods with a vast majority of ethnic minorities tend to have high unemployment rates and tend to receive less investment in their maintenance from civic and governmental bodies.

In addition, incivilities may be closely tied to another form of social capital referred to as collective efficacy. Sampson et al. (1997) broadly define collective efficacy as the ability of “. . . neighborhoods to realize the common values of residents and maintain effective social controls” (p. 919). In general, people with stronger ties to their neighbors and neighborhood experience less FOC (Aneshensel &

Suoff, 1996; Chaix et al., 2006; Ferraro & LaGrange, 1987; Latkin & Curry, 2003; Robinson & Keithley, 2000; Ross & Mirowsky, 2001; Stockdale et al., 2007; Wandersman & Nation, 1998; Warr, 2000; White, Kasl, Zahner, & Will, 1987). Much of this same research has shown that people living in neighborhoods with less collective efficacy and higher crime rates have a higher prevalence of many negative measures of mental health, including depression, anxiety, substance abuse, and psychoses, as well as general psychological distress. These relationships hold true even when controlling for other neighborhood characteristics such as economic context. Unfortunately, one of the key factors analyzed in many studies of the relationship between FOC and a persons' mental health is often estimates of the reported local crime rate—likely because statistics such as uniform crime reports are relatively easy to obtain across large geographical areas. There may be several problems with this approach. First, there are methodological issues, such as under reporting crime due to incomplete reports on the part of officers and individuals who often do not report crimes committed against them. Second, there are conceptual problems with measuring “real” victimization risk. The approach to victimization risk inherently assumes that FOC and victimization are the product of a rational and largely accurate assessment of relative risk. Large amounts of data, however, show this is not the case particularly for older persons. Variation in self-reported levels of FOC generally do not reflect local crime rates, particularly when individual-level factors such as social class are controlled for (DuBow, McCabe, & Kaplin, 1979; Taylor & Hale, 1986; Taylor & Shumaker, 1990). Research has shown that levels of FOC are in fact inversely related to real-world estimates of victimization risk (Akers, La Greca, Sellers, & Cochran, 1987; Covington & Taylor 1991; Lebowitz, 1975; Yin, 1980, 1985). This phenomenon, often referred to as the paradox of fear, has been the subject of much research. Although the cause for this paradox is beyond the scope of this article, its existence establishes that FOC can affect the lives (and health) of individuals, despite the fact that most people have low victimization risk, such as older individuals.

Research has also shown that a person's perceived risk of victimization and his or her subsequent FOC may be related to his or her physical strength and perceived ability to defend oneself, and his or her socio-economic status, size of social networks, and feelings of control (Hale, 1996; Mawby, 2004; Powell & Wahidin, 2008; Stafford, Chandola, & Marmot, 2007; Stiles, Halim, & Kaplan, 2003). This perceived vulnerability tends to have the greatest effect on older people and women. Women in general have higher rates of fear than men but have less risk of victimization than men (Hilinski, Kindsey, Pentecost, & Andrews, 2011). According to Hilinski et al. (2011), much of the fear that women experience relates to sexual aggression, and women are 10 times more likely to be sexually assaulted than men (Reid & Konrad, 2004). However, older persons in particular have disproportionately high FOC relative to their risk of victimization (De Donder,

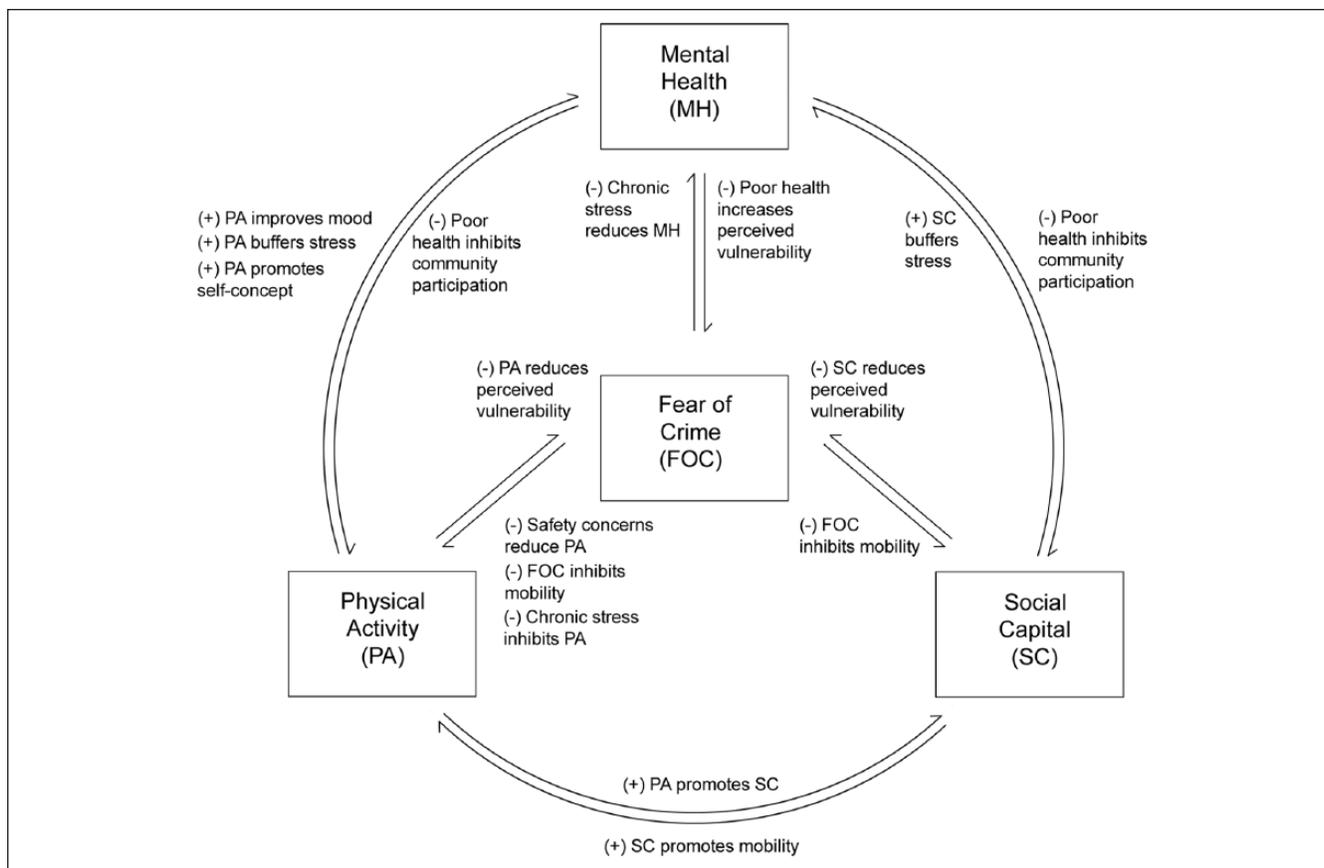


Figure 1. Links between fear of crime and mental health.

Note. A schematic diagram depicts most of the major pathways between mental health and fear of crime (FOC) described in the article, either directly or mediated by social capital (SC) and physical activity (PA). As the relationships are bi-directional, the nodes in the figure contain arrows running in both directions. In addition, an abbreviated description of the mechanism is shown nearest the appropriate line along with a positive (+) or negative (-) symbol to indicate the direction of the relationship.

Verte, & Messelis, 2005; Killias & Clerici, 2000; Oh & Kim, 2009; Scarborough, Like-Haislip, Novak, Lucas, & Alarid, 2010; Quann & Hung, 2002; Wittebrood, 2002; Yin, 1985), particularly in large cities (Lee, 2007), as crime is often associated with the rise of cities. This is not a surprising result given that almost every key socio-demographic feature known to be associated with higher levels of FOC is also a feature that increases in prevalence with age. Moreover, these individual-level variables and other known neighborhood-level variables often interact in synergistic ways to amplify FOC in older people. For example, older neighborhood residents are more likely to live in neighborhoods experiencing rapid turnover, as one generation vacates nearby properties due to mortality or movement to assisted living arrangements, while younger residents replace them (see Taylor & Covington, 1988). This heterogeneity and high turnover both inhibit the formation of social networks and amplify FOC.

Although the relationship between age and FOC is contested (e.g., Ditton, Bannister, Gilchrist, & Farrall, 1999; Kury, Oberfell-Fuchs, & Ferdinand, 2001), the need to understand FOC in older populations remains important even if they are not disproportionately afraid. One reason for

this need is the fact that pre-existing health conditions can drive FOC. Although there is evidence to support the direction of causation (e.g., Stafford et al., 2007), a more complex feedback model has been proposed (e.g., Jackson & Stafford, 2009). That is, although poorer health may increase FOC due to perceived vulnerability, FOC may also act to subsequently promote changes in both physiology and lifestyle that further deteriorate health. This review will focus on the plausible mechanisms by which FOC is coupled with mental health in older individuals, both directly and through physical activity and social interaction (see Figure 1).

Mechanisms for FOC to Alter Life Span Brain Development

Exercise

Physical activity is a very potent modulator of both physical and mental health (Nocon et al., 2008; Tanasescu et al., 2002; Warburton, Nicol, & Bredin, 2006). A large body of evidence suggests that older adults are more likely to engage in physical activity if they perceive their neighborhoods to be safe

(Booth et al., 2000; Brownson, Baker, Housemann, Brennan, & Bacak, 2001; Centers for Disease Control and Prevention [CDC], 1999; Stafford, Marmot, Eley, Stansfeld, & Marmot, 2006; Van Cauwenberg et al., 2013). However, research has also shown that FOC is associated with sedentary behavior including reduced outdoor activities (Ross, 1993) and increased car use (Lauer, 2005). More importantly, physical activity in older adults is consistently linked with improved mental health across multiple measures, including decreased prevalence of depressive symptoms (Emery, Schein, Hauck, & MacIntyre, 1998; Penninx et al., 1998), improved cognitive functioning (Chang, Pan, Chen, Tsai, & Huang, 2012; Hindin & Zelinski, 2012; Tseng, Gau, & Lou, 2011), and decreased risk of dementia (Flicker, 2010; Lee et al., 2010).

The link between mental health outcomes and physical activity is complex and bi-directional, and several non-exclusive mechanisms have been proposed to mediate the relationship (Erickson, Gildengers, & Butters, 2013; Mattson, 2012). Many studies support the argument that exercise has anti-depressant effects in older adults, yet the mechanism of action remains unclear. Many psychosocial factors are implicated, including increased social contact from participation in group exercises (Cooney et al., 2013; discussed further below). Other non-mechanistic factors have been suggested as well, such as increased self-efficacy and enhanced self-concept as a result of exercise interventions (Erickson et al., 2013). Consistent with the feedback model of Jackson and Stafford (2009), the above factors also decrease FOC and provide another example in a very complex feedback cycle in which there are many opportunities for bi-directional interaction between FOC and health via exercise.

There are also clear biological mechanisms for exercise's effects on mental health that cannot be accounted for by psychosocial factors, in part because they also occur in multiple mammal species with prolonged exercise. These mechanisms include enhancement in both volume and functional connectivity of brain circuits involved in mood and memory function, such as the prefrontal cortex and medial temporal lobe (Vivar, Potter, & van Praag, 2013). Exercise also exerts effects on a wide range of brain systems in many species, including the biological stress response, a vascular perfusion of many brain regions (Black et al., 1990; Kerr, Steuer, Pochtarev, & Swain, 2010), neuromodulator systems that are known to affect both cognition and mood (Chen et al., 2008; Ransford, 1982), and the production of protective trophic factors (Rothman & Mattson, 2013).

In addition to the direct influences, exercise also exerts protective effects on many age-related physical ailments that affect mental health. This is particularly well established in the case of exercise's ability to reduce the risk of cardiovascular diseases (e.g., Dunn et al., 1999; Fried et al., 1998), which in turn are major risk factors for cognitive decline and dementia. Higher levels of physical activity are also associated with a reduction of falls (DeSure, Peterson, Gianan, &

Pang, 2013; Faber, Bosscher, Chin, Paw, & van Wieringen, 2006; Hausdorff, Rios, & Edelberg, 2001; Tinetti, Doucette, Claus, & Marottoli, 1995), which are a major contributor to injury among older adults. The moderation of injury risk is relevant here because of the feedback model of FOC, which states that pre-existing health problems increase a person's sense of vulnerability, thus amplifying FOC, which further curtails physical activity. Although a full discussion of the potential for these factors to affect life span development is beyond the scope of this review, the above description is sufficient to illustrate that the biological and psychosocial factors provide powerful mediators of successful brain aging and mental health that both affect and are affected by FOC. An equally complex dynamic emerges when examining another behavior pattern associated with both FOC and successful aging—the maintenance of social networks.

Social Activities and the Maintenance of Social Contact

The effects of social support and isolation on mental health have long been recognized (Heaney & Israel, 2002; Kawachi & Berkman, 2001). In the context of older adults, increased engagement in social activities and larger social networks has been associated with decreased risk of cognitive decline and dementia (Bassuk, Glass, & Berkman, 1999; Fratiglioni, Wang, Ericsson, Maytan, & Winblad, 2000; Saczynski et al., 2006; Wang, Xu, & Pei, 2012; Williams, Plassman, Burke, & Benjamin, 2010) and depression (Aenchenbacher et al., 1991; Dean, Kolody, & Wood, 1990; Glass, De Leon, Bassuk, & Berkman, 2006; Oxman, Berkman, Freeman, & Barrett, 1992; Oxman & Hull, 1997). Faris and Dunham (1939) were among the first to link mental health to neighborhood factors. Social integration played a prominent role in their work, as it was argued that neighborhoods high in "social disorganization" promoted social isolation, which in turn negatively affected mental health outcomes. This seminal finding has given rise to a wealth of literature on the social stress model, which is arguably the dominant analytic model for the social determinants of health (Silver, Mulvey, & Swanson, 2002). The model points to at least two distinct mechanisms by which FOC may play a critical role in mediating the relationship between social integration and health. The reduction in social contact associated with higher FOC may affect (and be affected by) health directly. In addition, reduced social integration may negatively affect the ability of social networks to buffer chronic stressors that include stress about FOC. Skogan and Maxfield (1981) recognized the impact of negative behavioral changes such as avoidance behaviors and their impact on social life. It was found that people who avoided certain places or did not ride public transit due to FOC (Box, Hale, & Andrews, 1988) also had smaller social networks and had less engagement in social activities (Geis & Ross, 1998; Pain, 2000; Ross, 1993; Stafford et al., 2007).

Consistent with the feedback model (e.g., Jackson & Stafford, 2009), there is evidence that the relationship between FOC and social isolation is bi-directional. For instance, FOC is affected by many factors, including perceived vulnerability. In parallel to physical vulnerability, FOC is equally affected by perceptions of social vulnerability derived from lack of access to support networks. That is, although physical vulnerability potentiates fear through a person's perceived lack of ability to defend himself or herself, social vulnerability does so through perceived inability to recruit others to aid in his or her defense. In fact, social vulnerability has been argued as an explanation for neighborhood-level variation in fear, as neighborhoods with closer social ties between neighbors report lower FOC, perhaps because they perceive each another as more likely to come to their aid (Covington & Taylor, 1991; Franklin, Franklin, & Fearn, 2008; Oh & Kim, 2009), particularly in older adults (De Donder, De Witte, Buffel, Dury, & Verté, 2012; Lebowitz, 1975; Sundeen & Mathieu, 1976). In this context, social ties have been almost exclusively studied at the neighborhood level. To the authors' knowledge, no study to date has clearly examined the individual impact of intra-versus extra-neighborhood social ties on FOC and health. This is unfortunate, given that older adults are more likely to utilize extended social supports from friends and family for informal health care and financial aid (Penning, 1995; Van Houtven & Norton, 2004).

Although no scholar can dispute the wealth of data showing neighborhood-level ties in mediating FOC, the extended informal care network of older individuals may suggest that extra-neighborhood social ties will also have great impact on perceived vulnerability and subsequently on FOC in older adults. Among older adults with chronic health problems, these social supports may be as important as neighborhood-level ties in determining fear levels. Further investigation is clearly needed in this area.

In addition to the direct effects of social isolation and mental health mentioned above, a great deal of evidence shows that social networks have positive effects on mental health by acting as stress mediators (Aneshensel 1992; Kawachi & Berkman, 2001; Wenzel, Glanz, & Lerman, 2002). This research focuses on the amount of available functional social support (often referred to as social capital) at both individual and neighborhood levels. The research consistently shows that support systems can provide a stress-buffering mechanism and, as a result, reduce biological markers of chronic stress and associated disease. Although chronic stress may originate from a wide array of sources, one potential stressor is FOC. These stressors can have direct physiological and behavioral consequences for health. It has been proposed that chronic exposure to threat (whether perceived or actual) stimulates physiological responses that over long periods can compromise the function of both the nervous and immune systems (Lupien, Maheu, Tu, Fiocco, & Schramek, 2007; Ross & Mirowsky, 2001) and may make

the brain more vulnerable to subsequent insults (Russell, Zigmond, Dimatelis, Daniels, & Mabandla, 2014). Moreover, chronic stress increases the likelihood of other health-deteriorating activities such as heavy drinking (Hill & Angel, 2005) and may also decrease the health-promoting effects of exercise (Howells, Russell, Mabandla, & Kellaway, 2005). Finally, evidence suggests that older adults may be particularly susceptible to the effects of chronic stress, as aging is associated with a more pronounced physiological stress response to the same stressor (Lupien et al., 2007; Sindi, Fiocco, Juster, Pruessner, & Lupien, 2013).

Conclusion

It is clear that FOC affects mental health at a population level. Moreover, FOC shows complex reciprocal relationships with both mental health and health-promoting behavior. Many of these factors are independently associated with age. These factors conspire to put older adults at greater risk of being negatively affected by FOC and its determinants. Therefore, FOC should be a public health focus as a potential community-level mediator of mental health and well-being, particularly those focused on compression of morbidity in older adults.

However, one point bears mentioning. Although it is clear that the FOC exhibited by older individuals is disproportionate to their victimization risk, the question of whether they are in fact more fearful than their younger counterparts remains debated. The fact that this question has been the focus of such a large proportion of the research is unfortunate in the opinion of the authors. This question is not the most productive one to ask. This is because it can provide limited insight beyond showing that FOC is linked to factors in the social and physical environment rather than true victimization risk, and by extension that reduction of actual crime rates is not sufficient to reduce the FOC and its subsequent effect on mental health. Rather, it would be more impactful to clarify the relationships between physical and mental health, the social environment, and FOC, as these are likely to change with age. A wide array of unique physical and mental health concerns emerge during the third and fourth ages of life, and it is reasonable to hypothesize that their relationship to the physical and social environment of an individual is similarly evolving over time. Understanding how they are affected by (and in turn affect) FOC over the life span can provide unique opportunities to promote health and prevent disease. Indeed, data show that changes made at a neighborhood level can reduce FOC. In a recent systematic review, Lorenc and colleagues (2013) isolated several key features of the built environment that can modulate anxiety about safety such as gates, street lighting, visibility and "openness" in the environment, and physical incivilities (i.e., signs of neglect such as dirt, graffiti, and litter). This list provides a clear starting point for interventions aimed at reducing FOC. Moreover, evidence shows that changes to the

physical environment can positively affect the perception of neighborhood safety and subsequently lead residents to increase their physical activity (Jongeneel-Grimen, Droomers, van Oers, Stronks, & Kunst, 2014).

Although these data provide a starting point, few studies have examined how the relationship between the physical and social environment change with age. Instead, age is often treated as a variable to be controlled for, and while this approach is useful for isolating universal trends, it misses an opportunity to target those individuals who are likely to derive the most benefit from interventions. It is also important to note that in planning such interventions, the synergies among the factors being manipulated must be taken into account. For instance, recent data show that increases in the amount of retail space within walking distance of a resident not only tended to increase walking but also increased FOC (Foster, Wood, Christian, Knuiman, & Giles-Corti, 2013). The paradox highlights that any intervention program needs to consider the balance between community growth and a resident's FOC. In a similar vein, many approaches that have been used in the past to enhance some environmental factors associated with reduced FOC have been criticized for promoting a "bunker mentality" that reduces social cohesion, which is also a powerful mediator of FOC (Cozens, Saville, & Hillier, 2005). As such, these interventions should not be undertaken without reservation. There remains great untapped potential, however, in programs to curb FOC in an age-sensitive manner to improve mental health and well-being.

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