

Neighborhood Disorder and Health-Related Work Absences: Perceived Control and Neighborhood Trust as Explanatory Mechanisms



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ABSTRACT: The current research argues that people residing in disordered neighborhoods will tend not to trust their neighbors and perceive less control over life, which will in turn increase the risk of health-related work absences. Researchers also suggest that lower trust in neighbors and perceived control will strengthen the association between living in disordered neighborhoods and risk of health-related work absences. To address these questions, we examine a national study of Canadian workers gathered at the individual level in September of 2019 (N=2,524). Multinomial regression models show that perceptions of neighborhoods as disordered are associated with a greater likelihood of frequent health-related work absences. Reduced trust in neighbors and perceived control largely explain this association, but these factors do not moderate the association. This research contributes to the study of neighborhoods and health by showing that adverse health effects of disordered neighborhoods can have subsequent socioeconomic implications through increased health-related work absences.

KEYWORDS: Health, Work Absences, Neighborhood Disorder, Neighborhood Trust, Perceived Control.

INTRODUCTION

Research shows that neighborhoods beset by signs of social and physical disorder have critical impacts on numerous health outcomes, including cognitive impairment (Hill and Maimon 2013), psychological distress (Carbone 2020), allostatic load (van Deurzen et al. 2016), obesity (Burdette and Hill 2008), chronic conditions (O'Brien, Farrell and Welsh 2019), physical capacity (Samuel et al. 2015), physical health (Ross and Mirowsky 2001), self-rated health (Wen, Hawkey and Cacioppo 2006), and less use of preventative medicine (Latham-Mintus, Vowels and Chavan 2020). Neighborhood disorder indicates both social and physical cues reflecting the loss of social control in the community, such as the presence of people addicted to drugs, vandalism, and abandoned buildings (Ross and Mirowsky 1999; Raudenbush 2003). Despite the wealth of attention to the health impacts of neighborhood disorder, research has not considered the extent to which living in disordered neighborhoods is associated with the degree of absences from work due to sickness, which we call "absenteeism" for short. This lack of attention is surprising because absenteeism tends to reflect a broad panoply of individuals' physical and mental well-being (Collins et al. 2005; Bültmann et al. 2006; Laaksonen et al. 2009), suggesting that the numerous health consequences of social inequality related to neighborhood contexts will cumulate into absenteeism. Moreover, absenteeism can have substantial negative economic repercussions, as frequent work absences can result in an average additional cost equal to approximately half of a worker's wage (Strömberg et al. 2017), and also harm firm productivity (Grinza and Rycx 2020), thereby creating a substantial toll on a nation's economy (Asfaw, Chang and Ray 2014). In addition, long-term absences from work are associated with a loss of social participation which may elevate a sense of loneliness, in turn further deteriorating health (Henderson et al. 2012; Avdic et al. 2019). The potential consequences of neighborhood disorder for absenteeism are therefore important to consider due to not only economic ramifications of work absences but also its harmful influence on health.

Guided by a sociological perspective on stress and well-being contained within a stress process perspective (Pearlin and Bierman 2013), we suggest that psychological resources will play a crucial role in structuring the consequences of neighborhood disorder for absenteeism. Research on neighborhood disorder coheres with this perspective, identifying that both perceived control, an expectation that one can control over outcomes, and neighborhood trust, residents' trust toward their neighbors, can act as mediating mechanisms for the health effects of neighborhood disorder (Aneshensel 2009; Gilster 2014; He Len and Docherty 2011). Moreover, perceived control and neighborhood trust may also interact with neighborhood disorder to reduce the harmful consequences of disorder in a process of "stress buffering" (Schieman and Meersman 2004). Previous research on neighborhood health effects has termed the dual mediation and buffering roles of psychosocial resources "structural amplification," which occurs "when conditions undermine the personal attributes that otherwise would moderate their undesirable consequences" (Ross, Pribesh

Neighborhood Disorder and Health-Related Work Absences: Perceived Control and Neighborhood Trust as Explanatory Mechanisms

and Mirowsky 2001:569). Neighborhood disorder thereby tends to enhance its adverse health consequences by depleting psychological resources that would otherwise offset adverse health consequences, suggesting that neighborhood disorder will influence risk of absenteeism through a process of structural amplification involving perceived control and neighborhood trust.

This research therefore focuses on examining whether neighborhood disorder is associated with risk of health-related work absences, and the roles that neighborhood trust and a loss of perceived control play in facilitating this association. We address these questions by examining a national probability sample of working Canadians from the first wave of Canadian Quality of Work and Economic Life Study, collected in late September of 2019. This research contributes to the study of neighborhoods and health by alerting researchers and public policy makers to the greater risk of absenteeism among individuals living in disordered contexts, as well as identifying reductions in neighborhood trust and perceived control as playing an essential role in contributing to these risks. Given that work-related factors, such as work-place environments and job-related psychological resources have been mainly considered as the predictors for absenteeism (Løset et al. 2018; Mastekaasa and Melsom 2014; ten Brummelhuis et al. 2013), our findings draw on new perspectives in explaining absenteeism.

BACKGROUND

Figure 1 presents the overall conceptual model examined in the current research. As this figure shows, perceived control and neighborhood trust are both expected to ward off the risk of absenteeism. Moreover, given that neighborhood disorder depletes both of these resources, reduced protective resources under chaotic living contexts can end up increasing work absences. Both types of resources may also moderate the influence of neighborhood disorder on absenteeism, with the result that the depletion of these resources will further increase the impact of neighborhood disorder on absenteeism. In the sections below, we outline the theoretical and empirical basis for these expected associations in greater detail.

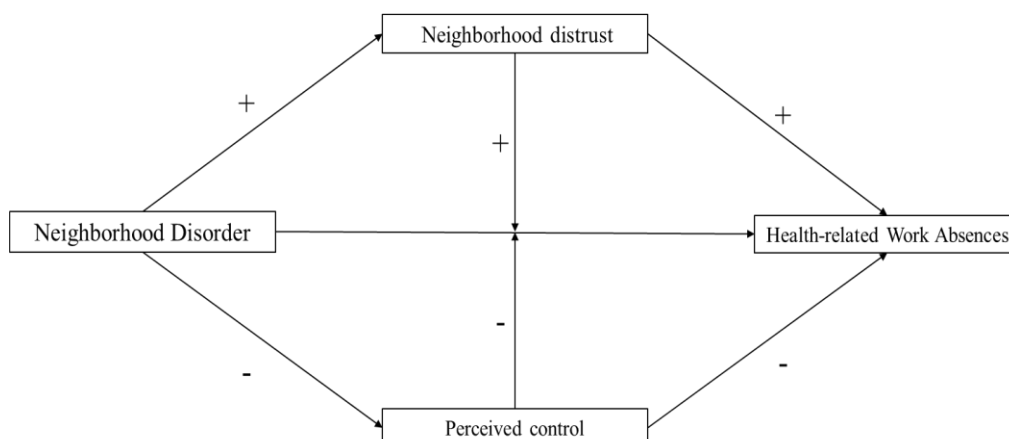


Figure 1. Conceptual Model of the Indirect Association between Neighborhood Disorder and Health-related Work Absences

Perceived Control as Mediator

A primary psychological resource implicated by previous research on neighborhood disorder is that of perceptions of control. Following earlier research in the stress process, we frame perceived control in terms of a sense of control, which is “a set of beliefs held by individuals regarding the amount of control they have over what happens in their lives” (Skaff 2006:188). A sense of control is a key factor in health because people with greater perceived control tend to engage in more effective problem-solving (Wheaton 1983), take responsibility for themselves, and act on their own behalf, thereby potentially avoiding risky activities and using preventive measures (Oi and Alwin 2017; Drew and Schoenberg 2011). Perceived control can also generate positive emotions, such as a hopefulness and optimism, which in turn have beneficial impacts on individuals’ perception of health (Gallagher et al. 2019; Krokavcova et al. 2008). In addition, people with greater perceived control tend to be better adapted to stressful contexts because they are aware of internalized means to deal with uncertainties and threats from stressors (Gallagher et al. 2019). A greater sense of control, therefore, will promote individuals’ health, in turn preventing absenteeism.

Neighborhood disorder tends to be related to reductions in perceived control because people who view their neighborhoods as disordered consider their environment chaotic and full of uncontrollable threats (Aneshensel 2009; Ross and Mirowsky 2009). The breakdown of social order that is inherent to neighborhood disorder facilitates fear and a sense of threat that lowers perceived control (Ross 2011; Ross, Pribesh and Mirowsky 2001). Moreover, given that perceptions of disconnectedness between actions and consequential outcomes can deprive individuals of perceived control, beliefs that their neighbors are incapable of improving surrounding environments and that one’s living context is unpredictable can both undermine perceived control (Bierman 2009;

Neighborhood Disorder and Health-Related Work Absences: Perceived Control and Neighborhood Trust as Explanatory Mechanisms

Ngwenya et al. 2018). Furthermore, a disordered neighborhood can heighten loneliness (Kowitt et al. 2020; Wen, Hawkley and Cacioppo 2006), which in turn can degrade perceived control (Ben-Zur 2018). Thus, neighborhood disorder is likely to reduce perceived control.

Previous research further supports the arguments for the role of perceived control in explaining the health effects of neighborhood disorder. Perceived control has accounted for the impacts of neighborhood disorder on numerous health and health-related outcomes, including depressive symptoms, physical functioning, and harmful health behaviors that increase health risks (Gilster 2014; Feldman and Steptoe 2004; Reitzel et al. 2013), all of which may elevate work absences. Given that perceived control is a central mechanism for the health impacts of neighborhood disorder, a lower sense of control is also likely to link the effects of neighborhood disorder to absenteeism.

Neighborhood Trust as Mediator

A second psychological resource highlighted in research on neighborhood disorder is neighborhood trust. Neighborhood trust refers specifically to trust in residents of the same community in which individuals live (Bierman and Schieman 2020). Neighborhood trust can be a powerful resource for health by bolstering interrelationships among neighbors that provide emotional, instrumental, and informational support (Sung and Son 2020; Glanville and Story 2018). Neighborhood trust can also promote the willingness of residents to act for the common good and enhance solidarity among neighbors (Collins, Neal and Neal 2017), such as a sense of being accepted within communities and perceived empowerment (Fujiwara and Kawachi 2008; Carpiano 2006). Given these broad positive effects, we can generally expect that neighborhood trust will be beneficially associated with health, and this beneficial association is documented in previous research (Fujiwara and Kawachi 2008; Sung and Son 2020), suggesting that neighborhood trust will be inversely associated with risk of absenteeism.

Disordered neighborhoods can deter neighborhood trust by signifying a lack of social order in one's living conditions (O'Brien, Farrell and Welsh 2019; He Len and Docherty 2011). Observable signs of social and physical disorder in neighborhoods represent a breakdown of social control, reflecting the loss of willingness to maintain social order (Hill and Maimon 2013; Ross 2011). As social order tends to influence the expectations of others' behaviors, neighborhoods in which social order is lost are likely to increase uncertainties in social relationships, thereby facilitating a reduction of trust (Ross 2011; Bjornstrom, Ralston and Kuhl 2013). Moreover, as a threatening atmosphere prevails in disordered neighborhoods, residents are less open to vulnerability which is fundamental in building trust in members of the community (Bierman and Schieman 2020). Therefore, individuals in disordered living contexts are likely to experience greater lack of trust towards their neighbors.

Scarce previous research has directly examined the role of neighborhood trust as a mediator for neighborhood disorder on health outcomes. However, the well-defined links between neighborhood disorder and generalized trust (Intravia, Stewart, Warren and Wolff 2016; Ross 2011), as well as between generalized trust and health (Kawachi 2018), strongly supports the putative role of neighborhood trust as a mechanism for the association between neighborhood disorder and absenteeism. Therefore, the current research further contributes to the neighborhood and health literature by examining neighborhood trust as an additional mechanism for the consequences of neighborhood disorder for absenteeism.

Perceived Control and Neighborhood Trust as Moderators

Both perceived control and neighborhood trust are also likely to buffer the health effects of neighborhood disorder, with the result that a loss of these resources will strengthen the association between neighborhood disorder and absenteeism. Perceived control is likely to buffer this association in part because people feeling high levels of control over life are more likely to draw on active problem-solving coping strategies (Ben-Zur 2002), which in turn may encourage oneself to offset deleterious contextual impacts on health. Also, people with a greater sense of control are more likely to build on opportunities to shape their immediate living contexts favorably, thus offsetting the adverse impacts of neighborhood disorder (Bandura 2000; Gilster 2014). The buffering effects of the perceptions of control are supported by previous research showing that perceived control can weaken neighborhood disorder's influence on psychological distress (Schieman and Meersman 2004; Gilster 2014), alcohol use (Scheier, Botvin and Miller 2000), and health-related quality of life (Gibson et al. 2011). Therefore, perceived control is likely to moderate the association between neighborhood disorder and numerous health outcomes, in turn weakening the risk for absenteeism.

Trust in neighbors is also likely to buffer the health impacts of neighborhood disorder, leading decrements in neighborhood trust to further amplify the consequences of neighborhood disorder for absenteeism. Trust in neighbors may weaken the effects of neighborhood disorder on psychological and physical health by fostering a sense of safety and solidarity, as well as by increasing the likelihood of receiving emotional, instrumental, and informational support (Choi and Matz-Costa 2018; Dawson et al. 2019; Uchino et al. 2018; Robinette et al. 2013). Although there is a paucity of research directly testing the degree to which neighborhood trust buffers the effects of neighborhood disorder, supportiveness of one's neighbors does appear to act as a modifier (Kim and Ross 2009). This finding supports the argument that trust in one's neighborhoods is also likely to buffer the association between neighborhood disorders and overall well-being by enhancing social support, in turn weakening the association between

Neighborhood Disorder and Health-Related Work Absences: Perceived Control and Neighborhood Trust as Explanatory Mechanisms

neighborhood disorder and risk of absenteeism.

Summary of Aims

In summary, this research has three related aims. The primary aim is to test whether neighborhood disorder is related to absenteeism in a national sample of Canadian workers. The second aim is to investigate whether lower levels of perceived control and lack of neighborhood trust explain the association between neighborhood disorder and absenteeism. The third aim is to examine whether a perceived control and neighborhood trust buffer the association between neighborhood disorder and absenteeism, thereby constituting structural amplification.

DATA AND METHODS

Data

The individual-level data employed in this research come from the Canadian Quality of Work and Economic Life Study (C-QWELS), a national survey conducted to examine social conditions and well-being among currently-employed Canadians. The C-QWELS sample frame is based on the employed Canadian population 18 years of age or older from the 2016 Canadian census; thus, it is representative sample of all working individuals in Canada (Glavin and Schieman, 2022). Data were gathered by the study authors in cooperation with the Angus Reid Forum, a Canadian national survey research firm that maintains an ongoing national panel of Canadian respondents. The C-QWELS 1st was gathered from September 19th to September 24th, 2019, and was an online survey conducted among a representative sample of 2,524 working Canadians. The response rate was 42%, but results were statistically weighted according to the most current education, age, gender and region Census data to ensure a sample representative of working Canadians. Among the 2,524 total cases in C-QWELS 1st survey, 2,339 were retained in the current analytic sample with a retention rate of over 92%.¹ To test the degree of bias due to a listwise deletion, we conducted additional t-tests and chi square tests of focal variables to examine whether there are significant differences between included and dropped cases in the following analyses. We did not find significant differences between two groups, suggesting that there is no critical bias in our analyses.

Focal Measures

Health-related work absences. Health-related work absences were measured at the individual level by asking: “In the past year, how many days were you not able to work because of illness? Please state all the days, not just those for which you had an official note from your doctor.” Participants indicated the frequency of health-related work absences in the past year, with response choices: 0 (1), 1-5 (2), 6-10 (3), 11-15 (4), 16 or more (5). By relying on previous research that defined over 16 days of physician certified absences as a long-term absence (Madsen & Kittelsen Røberg, 2021; Dahl & Vignes, 2015), we recoded responses to this measure into a tripart categorization of low absences in terms of 10 or less (coded as 1), moderate absences in terms of 11-15 (coded as 2), and 16 or more as a high number of absences (coded as 3). Although the measurement we used includes both certified and non-certified absences, the category of high-absent group (coded as 3) is accorded with a threshold of long-term absences that earlier studies designed.

The low absences group includes people who are absent from work less than once a month, the moderate absences group indicates absences from work approximately once a month, and the high absences group refers to absences from work more than once a month. In ancillary analyses, we also examined a finer level of differentiation of absences by comparing a group comprising no absences to a low-absent group (1-5), a moderate group (6-10), often absent group (11-15), and high-absent group (16 or more). However, there was no substantial difference in results by specifying additional categories of low and moderate absences.

Perceived neighborhood disorder. Three items are used to measure individual-level perceptions of physical and social dysfunctions within neighborhood: “My neighborhood is clean,” “My neighborhood is safe,” and “My neighborhood is noisy.” Respondents reported agreement with each statement from strongly agree (1), somewhat agree (2), somewhat disagree (3), and strongly disagree (4). Although brief, this measure addresses key components of neighborhood disorder in terms of social disorder, physical disorder, and a lack of sense of safety in the environment that have been examined in previous measures of neighborhood disorder (e.g., Bierman et al. 2018; Ross et al. 2001). Yet, it could be the limitation of this research because simple measurements tend to measure various aspects related to disordered living contexts. Despite of such a problem, however, the measurement assessed in this research captures the concept of neighborhood disorder in an appropriate manner as earlier studies did. Moreover, while based on subjective evaluations of the neighborhood, previous research indicates there are strong associations between respondent and observer ratings of neighborhoods (Perkins and Taylor 1996). However, it is needed to be aware that perceived neighborhood measure could inflate its impacts on absenteeism via both neighborhood trust and perceived control.

All responses were coded so that higher values represented greater neighborhood disorder. A principal components analysis of these items showed one component with an eigenvalue above 1, which explained almost 60% of the variance in the items, and all items loaded on this component at 0.66 or higher. Thus, responses were averaged to generate a scale of perceived neighborhood disorder (Cronbach’s alpha = 0.673).

Neighborhood Disorder and Health-Related Work Absences: Perceived Control and Neighborhood Trust as Explanatory Mechanisms

Neighborhood trust. Similar to previous research (e.g., Sung and Son 2020; Fujiwara and Kawachi 2008), neighborhood trust was measured at the individual level using a single item that asked, “Thinking about the people in your neighbourhood—that is, the local area in which you live” how much respondents agreed or disagreed with the statement “My neighbours can be trusted.” Response choices were strongly agree (1), somewhat agree (2), somewhat disagree (3), and strongly disagree (4). Because of skewed distribution of responses, we created a measure of neighborhood trust by combining responses of “strongly disagree” and “somewhat disagree” into an overall “distrust” category (1) and responses of “strongly agree” and “somewhat agree” into an overall “trust” category (0).

Perceived Control. Perceived control was measured at the individual level using four items from the Pearlin and Schooler (1978) mastery scale. Questions include: “You have little control over the things that happen to you,” “There is really no way you can solve some of the problems you have,” “You often feel helpless in dealing with problems of life,” and “Sometimes you feel that you are being pushed around in life.” Response choices were strongly agree (1), somewhat agree (2), somewhat disagree (3), strongly disagree (4). All responses were coded so that higher values indicated greater perceived control. Responses were averaged to create a perceived control scale (Cronbach’s alpha = 0.833).

Covariates

Generalized trust. To control for broader social trust, participants were asked a question on general social trust: “Generally speaking, would you say that most people can be trusted, or that you can’t be too careful in dealing with people? Please tell me what you think, where 1 means you can’t be too careful and 5 means most people can be trusted.”

Employment conditions. As analyses were based on samples of working Canadians, employment conditions were taken into account to control the effects that occupational experiences may affect health-related work absences. Occupational class was measured using a five category classification—professional, clerical, service, skilled worker and others—with a professional category used as a reference group. Working more than one job was controlled by a dummy variable with having more than one job coded 1 and having one job coded 0. Employment status was operationalized using a four category classification—full time employed, part time employed, business owner, and self-employed—with a full time employed category used as a reference group. Also, scales of job-related autonomy, voicelessness in the workplace, and job-pressure were included as covariates because these factors can act as workplace stressors, leading to absenteeism (Goh et al. 2015). Voicelessness at work was measured using two items: “When decisions are being made, all of the people who will be affected are asked for their ideas” and “Managers make sure that all employees’ concerns are heard before decisions are made.” Job autonomy was measured using three questions: “I have the freedom to decide what I do on my job,” “It is basically my own responsibility to decide how my job gets done,” and “I have a lot of say about what happens on my job.” Job-pressure was also measured with three items: “How often did you feel overwhelmed by how much you had to do at work?” “How often did you have to work on too many tasks at the same time?” and “How often did the demands of your job exceed the time you have to do the work?” Response choices for the voicelessness and autonomy items were strongly agree (1), somewhat agree (2), somewhat disagree (3), strongly disagree (4), while response choices for the pressure items were very often (1), often (2), sometimes (3), rarely (4), and never (5). All responses were coded so that higher values represented greater stress exposure, and the items for the respective scales were averaged to create the three measures (Cronbach’s alpha=0.786 for voicelessness, 0.766 for autonomy, and 0.926 for job pressure).

Familial statuses. Familial statuses that can provide social and economic support were also taken into account. Living with a romantic partner was measured as dichotomous variable that higher value indicated living together with a romantic partner. The presence of children was also measured as dichotomous variable with the higher value indicated living with at least one child under the age of 18.

Social and economic statuses. Social and economic statuses that can contribute to living in disordered neighborhoods and health were also controlled, including income, economic hardship, education, age, gender, and minority status. We operationalized education as a set of categories that includes a category of high school degree, some university or college/trade school, graduated from college or trade school, and a university degree with high school degree as reference. A category of high school degree included individuals who were not high school graduates because few respondents reported less than a high school degree. Income was measured as a set of categories by asking for total household income before taxes in the past year. Response choices were categorized into 5 categories with “under \$25,000” (1), “\$25,000-less than \$50,000” (2), “\$50,000-less than \$100,000” (3), “\$100,000- less than \$150,000” (4), and “over \$150,000” (5), with “under \$25,000” as reference. We take a missing income category into account as an additional analytic category because people who do not disclose income often are situated in high income categories and including non-response is likely to help control for biases in self-reports. Furthermore, as previous research on neighborhood disorder considered financial strain as an important aspect of socioeconomic status (Hill, Ross and Angel 2005), we controlled for economic hardship. Responses to three items were averaged together to create an index of economic hardship: difficulty in paying bills, difficulty buying food, clothes or other household needs, and whether finances worked out at the end of the month (Cronbach’s

Neighborhood Disorder and Health-Related Work Absences: Perceived Control and Neighborhood Trust as Explanatory Mechanisms

alpha = 0.857). Age was measured in years of age. Gender was coded as 0 for men and 1 for women. Racial and ethnic minority status is measured in Canada using the term “visible minority” (Schieman and Narisada 2021). According to this convention, visible minority status was measured by asking respondents, “Would you say you are a member of a visible minority here in Canada (in terms of your ethnicity/race)?” Responses were indicated by a dichotomous variable in which the higher value represented “visible minority.”

Plan of Analysis

All analyses were conducted in Stata 16.1. Although the measure of health-related work absences was ordinal in nature, preliminary analyses showed substantial differences in associations across the three response categories, thereby obviating the use of an ordered logistic regression model (Hoffmann 2016). Consequently, we utilized multinomial logistic regression models in examining predictors of absenteeism.

In the first stage of analyses, we estimate how neighborhood disorder is associated with moderate and high absences, as compared to a low level of absences. As a part of these analyses, we report the relative risk ratio (RRR), which is similar to an odds ratio, and expresses how a one-unit increase in a predictor is associated with the proportional difference in the odds of moderate or high absences, relative to low absences (Hoffmann 2016).

In a second stage, we then introduce neighborhood trust and mastery as additional covariates. Although a common approach in multivariate analysis is to examine whether a focal association (in this case, the association between neighborhood disorder and the categories of work absences) decreases in strength and significance when mediators are included in a model, this approach is not advisable for logistic regression coefficients or associated RRRs. Methodological research underscores that both the multinomial logistic regression coefficient and the associated RRR are adjusted by a scaling factor that depends on the degree of explained variance in the model (Karlson, Holm and Breen 2012). As a result, comparing nested models can result in changes in the logistic regression coefficient and associated RRRs simply due to the changes in this scaling factor (Breen, Karlson and Holm, 2018).

Because of these methodological issues, we additionally report average marginal effects (AMEs) which are not as affected by the changes in the scaling factor across models (Breen et al. 2018). Average marginal effects are the predicted change in the probability of an outcome (such as moderate or high absences, relative to low absences), when averaged across the values of each respondent in the sample (Wooldridge 2012). The AME is especially useful in a logistic regression context, as Long and Freese (2014) argue that because the AME “averages the effects across all cases in the sample, it can be interpreted as the average size of the effect in the sample” (Long and Freese 2014:245). Thus, in addition to being more robust as comparative across nested models, the AME also presents a clearer indication of effect size than the RRR.

These rescaling issues also lead to biases in more common approaches to tests of mediation (Karlson et al. 2012), such as observing the degree of change in coefficients between models. As an alternative, we formally test mediation using the Karlson-Holm-Breen (KHB) method (Kohler, Karlson and Holm 2011), which can provide decompositions of total effects into direct, indirect, and total effects that are not biased by rescaling or changes in error variances (Kohler et al. 2011). The indirect effect refers to the portion of the association between neighborhood disorder and absenteeism that is explained by the mediators, the direct effect is the portion of the associations that remains, and the total effect is the sum of the indirect and direct effects (Kohler et al. 2011). By utilizing the KHB method, correct AMEs of the direct and indirect effects of neighborhood disorder through each of the hypothesized mediators can be estimated.

In the final stage of analyses, we test interaction terms between neighborhood disorder and both neighborhood trust and perceived control. These interaction terms serve to demonstrate whether the impacts of neighborhood disorder on absenteeism are contingent on a degree of both psychological resources.

RESULTS

Table 1 shows weighted descriptive results for all measures used in the analyses. The low absent group occupies about 89% of the analytical sample, the moderate absent group holds 4.57%, and the high absent group takes up 6.54%.² There are significant differences in the mean levels of neighborhood disorder among absenteeism categories, with the high absent group reporting the greatest levels of disorder (mean = 2.053). The levels of neighborhood trust also significantly vary across the absenteeism categories, with the high absent group denoting the most frequent distrust toward neighborhood (26.95%). Perceived control does not vary significantly across the absences categories in bivariate analyses. An ancillary multinomial regression analyses which included background controls showed, however, that higher levels of perceived control are associated with the lower risk of high absences. Ancillary correlation analyses also showed that neighborhood disorder is significantly related to the greater in neighborhood distrust ($r = .378$) and lower levels of perceived control ($r = -.206$), suggesting that reduced trust and perceived control are likely to explain

Neighborhood Disorder and Health-Related Work Absences: Perceived Control and Neighborhood Trust as Explanatory Mechanisms

the impacts of perceived disorder. Thus, the following multinomial logistic regression models examine whether this possibility is supported when we take covariates into account.

TABLE 1
Sample Descriptives

	Low (88.88%)	Moderate (4.57%)	High (6.54%)	All (100%)	
	M or %	M or %	M or %	M or %	p
Neighborhood Disorder	1.853	1.905	2.053	1.868	*
Neighborhood Distrust					
Trust	85.83%	82.48%	73.05%	84.83%	***
Distrust	14.17%	17.52%	26.95%	15.17%	
Perceived Control	2.822	2.662	2.467	2.791	
Generalized Trust	2.987	2.973	2.650	2.963	
Gender					
Men	52.19%	42.83%	50.94%	51.98%	
Women	47.49%	57.17%	49.06%	48.02%	
Age	41.402	38.180	44.435	41.463	
Education					
High School	9.38%	12.12%	11.22%	9.62%	
Some University or College/Trade School	20.46%	13.56%	25.75%	20.51%	
College/Trade School	23.37%	17.44%	20.42%	22.92%	
University Degree	46.79%	56.89%	42.61%	46.96%	
Income					
Under \$25,000	5.82%	9.19%	5.39%	5.94%	
\$25,000 to Less than \$50,000	14.06%	13.06%	19.25%	14.36%	
\$50,000 to Less than \$100,000	30.51%	29.88%	31.27%	30.53%	
\$100,000 to Less than \$150,000	22.75%	24.88%	19.32%	22.62%	
\$150,000 and Over	18.07%	16.44%	13.40%	17.69%	
Missing Income	8.79%	6.55%	11.37%	8.87%	
Living with Romantic Partner					
Partner	65.59%	66.07%	53.70%	64.82%	*
No Partner	34.41%	33.93%	46.30%	35.18%	
Employment Status					
Full-Time	71.50%	74.38%	80.84%	72.25%	
Part-Time	17.64%	17.75%	11.16%	17.21%	
Business Owner	4.31%	4.32%	3.26%	4.24%	
Self-Employed	6.56%	3.54%	4.75%	6.31%	
Economic Hardship	2.240	2.584	2.762	2.290	**
Multiple Jobs					
One Job	78.02%	73.43%	79.14%	77.89%	
More than One Job	21.98%	26.57%	20.86%	22.11%	
Occupational Class					
Professional	40.14%	43.43%	32.35%	39.76%	
Clerical	15.84%	14.09%	14.93%	15.71%	
Service	18.09%	22.19%	23.41%	18.63%	
Skilled-Worker	18.85%	12.50%	19.79%	18.63%	
Others	7.08%	7.78%	9.52%	7.27%	
Job-Pressure	3.246	3.415	3.382	3.262	
Job-Autonomy	2.351	2.540	2.734	2.385	
Voicelessness	2.657	2.915	3.046	2.694	
Any Child in Household					
No Children	66.51%	69.75%	78.54%	67.45%	**
Children	33.49%	30.25%	21.46%	32.55%	
Racial/Ethnicity					
Not a Visible Minority	87.05%	82.50%	88.45%	86.94%	
Visible Minority	12.95%	17.50%	11.55%	13.06%	

N=2,339

Note: Descriptives are weighted. Means are presented for continuous measures, proportions for categorical measures. Significance tests indicate significant mean differences among low absences, moderate absences, and high absences groups. One-way ANOVA is conducted to test mean differences of continuous measurement across absenteeism categories. Chi-square tests examine significant differences in the categorical measurements across absenteeism categories.

*p<0.05; **p<0.01; ***p<0.001

Table 2 displays the results of the multinomial logistic regression models estimating the association between neighborhood disorder and absenteeism, while controlling for all background factors. To assess multicollinearity among independent variables, we assessed VIF indicating a mean of VIF is 1.21. Thus, we assure that independent variables in the models are barely correlated.

Neighborhood Disorder and Health-Related Work Absences: Perceived Control and Neighborhood Trust as Explanatory Mechanisms

TABLE 2
Multinomial Logistic Regression Analyses of Health-related Work Absences

	Model 1								Model 2							
	Moderate Absences				High Absences				Moderate Absences				High Absences			
	b	SE	RRR	AMEs	b	SE	RRR	AMEs	b	SE	RRR	AMEs	b	SE	RRR	AMEs
<i>Focal Predictors</i>																
Neighborhood disorder	-.048	.169	.953	-.003	.348	.137	1.416*	.023	-.085	.183	.919	-.004	.202	.152	1.224	.013
Neighborhood distrust									.136	.342	1.146	.004	.495	.249	1.640*	.032
Perceived Control									-.073	.179	.929	-.002	-.425	.160	.654**	-.021
<i>Covariates</i>																
Women	.312	.234	1.366	.013	.003	.196	1.003	-.001	.309	.236	1.363	.013	-.003	.197	.997	-.001
Age	-.017	.010	.982	-.001	.022	.007	1.023**	.001	-.017	.010	.983	-.001	.025	.007	1.025***	.002
Some University or College ¹	-.651	.451	.521	-.026	.364	.333	1.439	.023	-.643	.453	.526	-.026	.432	.338	1.541	.027
College/Trade School ¹	-.501	.417	.606	-.020	-.089	.341	.914	-.003	-.499	.428	.607	-.020	-.052	.349	.949	-.001
University Degree ¹	-.020	.390	.980	-.002	.284	.344	1.328	.016	-.013	.397	.987	-.002	.343	.348	1.410	.019
\$25,000 to Less than \$50,000 ²	-.521	.530	.594	-.025	.454	.489	1.575	.025	-.515	.527	.597	-.025	.571	.516	1.770	.028
\$50,000 to Less than \$100,000 ²	-.372	.501	.689	-.019	.342	.466	1.408	.018	-.362	.498	.696	-.019	.482	.496	1.620	.023
\$100,000 to Less than \$150,000 ²	-.233	.521	.792	-.013	.362	.491	1.436	.018	-.221	.519	.801	-.013	.516	.519	1.676	.024
\$150,000 and Over ²	-.319	.558	.727	-.017	.394	.504	1.482	.020	-.297	.550	.743	-.017	.611	.535	1.844	.030
Missing Income ²	-.588	.699	.556	-.028	.845	.529	2.327	.053	-.573	.693	.564	-.028	1.036	.560	2.821*	.061
Has Romantic Partner	.260	.246	1.297	.011	-.297	.199	.743	-.019	.265	.245	1.304	.012	-.289	.199	.748	-.018
Part-Time ³	-.135	.337	.874	-.004	-.598	.290	.550*	-.029	-.135	.329	.873	-.004	-.606	.290	.545*	-.030
Business Own ³	.540	.567	1.717	.027	.252	.541	1.287	.014	.536	.568	1.710	.027	.214	.529	1.239	.012
Self-Employed ³	-.328	.610	.720	-.012	-.114	.447	.893	-.006	-.337	.611	.713	-.012	-.147	.447	.863	-.008
Financial Hardship	.285	.113	1.329*	.012	.360	.094	1.433***	.023	.274	.120	1.316*	.011	.297	.100	1.346**	.018
Generalized Trust	.035	.110	1.036	.002	-.122	.084	.885	-.007	.045	.111	1.047	.002	-.069	.083	.933	-.004
Works More than One Job	.181	.269	1.198	.008	-.055	.255	.946	-.004	.176	.265	1.193	.008	-.052	.246	.949	-.004
Clerical ⁴	-.251	.353	.778	-.009	-.227	.296	.797	-.011	-.248	.351	.780	-.009	-.185	.293	.831	-.009
Service ⁴	.039	.299	1.040	.001	.144	.278	1.155	.009	.039	.304	1.041	.001	.191	.274	1.211	.012
Skilled-Worker ⁴	-.368	.391	.692	-.014	-.042	.333	.958	-.001	-.373	.388	.689	-.014	-.019	.301	.981	.000
Others ⁴	-.004	.420	.995	-.001	.114	.308	1.120	.007	-.007	.419	.993	-.001	.109	.345	1.115	.006
Job-Pressure	-.015	.103	.984	-.001	-.004	.090	.996	.000	-.025	.099	.975	-.001	-.066	.089	.936	-.004
Job-Autonomy	.184	.152	1.202	.006	.425	.126	1.530***	.028	.173	.153	1.189	.006	.374	.127	1.454**	.024
Voicelessness	.255	.151	1.290	.011	.216	.106	1.241*	.013	.253	.152	1.288*	.011	.186	.107	1.204	.010
Child in Household	-.337	.235	.714	-.012	-.475	.216	.622*	-.025	.308	.298	.714	-.012	-.480	.217	.618*	-.025
Visible Minority	.311	.298	1.364	.015	-.224	.273	.800	-.013	.308	.298	1.362	.015	-.216	.271	.805	-.013
Constant	-3.767	1.090	.023**		-6.636	.914	.001***		-3.495	1.195	.030**		-5.226	1.040	.005***	

N = 2,339 * p < .05, ** p < .01, *** p < .001

1. High school is reference.
2. Under \$25,000 is reference.
3. Full-time is reference.
4. Professional is reference.

Model 1 shows that neighborhood disorder is significantly associated with increased risk of high absences, as compared to low absences. Yet, neighborhood disorder is not associated with the risk of moderate absences. The AME of neighborhood disorder for the risk of high absences (AMEs = 0.023) indicates that the average probability of being high absences is 2.3 percentage points higher with a one-unit increase in perceived neighborhood disorder.

Model 2 introduces perceived control and neighborhood trust as additional predictors. This model shows that lower neighborhood trust is significantly associated with a high level of absences, but not moderate absences, as compared to low absences. The AME for this association indicates that people who were less trustful of their neighbors were, on average, about 3% more likely to report a high level of work absences. Similarly, perceived control was associated with a high level of work absences, but not a moderate level of work absences, with a one-unit increase in control associated with an average marginal decrease of about 2.1% risk in high absences. In addition, with both perceived control and neighborhood trust included in the model, the AME for neighborhood disorder for a high level of work absences is almost halved, from 0.023 in Model 1 to 0.013 in model 2. That the association between neighborhood disorder and high work absences declined in Model 2 suggests a substantial degree of mediation through perceived control and neighborhood trust, but we next formally test this mediation using the KHB procedure that addresses rescaling across models.

As for the results of SES related measurements in Model 2, only financial hardship was associated with a high level of work absences, with one unit increase in financial hardship associated with an average marginal increase of 1.8 % risk in high absences.

TABLE 3
Mediation of the relationship between neighborhood disorder and health-related work absences by neighborhood distrust and perceived control using KHB method

	Total Effect				Direct Effect				Total Indirect Effect				Specific Indirect Effect						
	Coeff	SE	RRR	SE	AME	SE	Coeff	SE	RRR	SE	AME	SE	Coeff	SE	RRR	SE	AME	SE	
High Absences																			
Neighborhood Disorder	.348*	.139	1.416	.197	.020	.008	.202	.152	1.223	.186	.012	.009	.146**	.056	1.157	.064	.008		
Neighborhood Distrust																	.100**	.051	.006
Perceived Control																	.045**	.020	.003
Moderate Absences																			
Neighborhood Disorder	-.049	.168	.951	.160	-.003	.007	-.084	.183	.918	.168	-.004	.008	.035	.067	1.036	.069	.000		
Neighborhood Distrust																	.027	.069	.000
Perceived Control																	.007	.000	.000

N=2,339 * p < .05, ** p < .01, *** p < .001.

Neighborhood Disorder and Health-Related Work Absences: Perceived Control and Neighborhood Trust as Explanatory Mechanisms

Table 3 shows the results of KHB method decomposing the total, direct, and indirect effects of neighborhood disorder on absenteeism. In this table, we report logistic coefficients, RRRs, and AMEs, but we focus on the AMEs here because they are generally indicative of the strength of associations. We find that both mediators explain the association between neighborhood disorder and a high level of work absences. The total indirect effect is significant and explains approximately 42% of the total AME of neighborhood disorder on high absences. Moreover, the association between neighborhood disorder and high absences is reduced to non-significance with the inclusion of these factors, indicating a case of “total mediation” (Aneshensel 2009). We also find no evidence of mediation in the case of moderate absences; this is to be expected, though, as the overall association between neighborhood disorder and moderate absences was not significant.

When it comes to the explanatory power of the specific mediators, the indirect path between each mediator is statistically significant. However, lower neighborhood trust can account for approximately 28.12 % of the total AME of neighborhood disorder on high absences, whereas perceived control can explain around 13% of the total AME of neighborhood disorder on a high degree of absenteeism. These analyses therefore show that neighborhood trust plays a more central role than perceived control in explaining the effects of neighborhood disorder on high absences.

TABLE 4
Moderation Effects of Neighborhood Trust and Perceived Control
between Neighborhood Disorder and Health-related Work Absences

	Model 1					
	Moderate Absences			High Absences		
	b	SE	RRR	b	SE	RRR
Neighborhood disorder	.667	.586	1.948	.497	.532	1.644
Neighborhood Distrust	1.939	.887	6.954*	.929	.772	2.531
Perceived Control	.340	.420	1.405	-.232	.422	.793
Neighborhood disorder × Neighborhood Distrust	-.821	.410	.440	-.190	.321	.827
Neighborhood disorder × Perceived Control	-.213	.214	.808	-.094	.185	.910

N=2,339 * p<.05, ** p<.01, *** p<.001.

Note: Models include all covariates shown in Table 2

To examine whether neighborhood trust and perceived control moderate the association between neighborhood disorder and absenteeism, we test interactions between neighborhood disorder and both psychological factors in Table 4. The coefficients for these interactions are not significant. These analyses therefore show that both neighborhood trust and perceived control mediate the association between neighborhood disorder and high levels of health-related absences, but neighborhood trust and sense of control do not moderate the association between neighborhood disorder and absenteeism.³

DISCUSSION

Myriad research has indicated that chronic exposure to stressful conditions deteriorates psychosocial resources, leading to numerous health problems (Lei and Simons 2021; Gilster 2014). Consistent with previous research, our findings revealed that people seeing their neighborhoods as disordered exhibited a significantly greater likelihood of frequent health-related work absences. Moreover, as hypothesized, lower neighborhood trust and perceived control accounted for the relationship between neighborhood disorder and high absences. However, neither neighborhood trust nor perceived control modified the association between neighborhood disorder and absenteeism.

The present study elaborates on past research on neighborhood disorder and health by examining the under-studied outcome of health-related work absenteeism. Given that work absences are linked to the nation’s economic burden (Asfaw, Chang and Ray 2014), we add vital dimensions to the study of neighborhoods and health by suggesting that neighborhood disorder not only influences individual well-being. The ramifications of neighborhood disorder for well-being also increase the drag on the national economy. Decreasing exposure to poor neighborhoods may therefore have macro-structural benefits beyond that of individual well-being.

Our analyses also point to the processes through which neighborhood disorder may operate in processes of reproduction of inequality. Individuals occupying disadvantaged social positions are more likely to live in neighborhoods beset by signs of disorder (Schieman and Pearlin 2006), and a high number of work absences are also a substantial risk factor for unemployment and earnings penalties (Ichino and Moretti 2009; Koopmans, Roelen and Groothoff 2008). Consequently, socioeconomic disadvantages lead to residency in living conditions that serve to reinforce socioeconomic risks through increased workplace absences. This is especially the case because neighborhood disorder was specifically associated with a high degree of absenteeism, and not a moderate number of absences. Interventions that aim to prevent health decrements due to poor living conditions may therefore also have an

Neighborhood Disorder and Health-Related Work Absences: Perceived Control and Neighborhood Trust as Explanatory Mechanisms

added benefit of aiding individuals in escaping economic disadvantages.

One concern regarding these results may be that the overall effect size observed in this study, as indicated by the AME, was a 2.3% increase in the risk of a high number of work absences for everyone one-unit increase in neighborhood disorder. This may appear to be a relatively weak association, but it should be noted that across the range of the neighborhood disorder scale, the AME for the increase in risk of a high number of absences was 0.137. That individuals living in highly disordered neighborhoods would experience almost a 15% increase in a high number of work absences due to a single factor that is not directly a part of work conditions underscores the diffuse nature of the adverse consequences of living in a disordered environment. Furthermore, this is likely a conservative estimate of the effects of neighborhood disorder on workplace absences, because people who had a very high number of absences in the previous year were likely to be terminated or on disability leave. Longitudinal research that tracks a working sample to examine the consequences of poor neighborhoods for work absences and unemployment is likely to obtain even stronger associations.

Our research also illustrates some of the mechanisms that likely explain the impacts of neighborhood disorder in increased risk of absenteeism. These mechanisms are of importance because they offer potential ways to intervene in the risks for absenteeism presented by neighborhood disorder, even when people still live in disordered neighborhoods. These findings suggest that both reduced neighborhood trust and sense of control play a role in explaining the consequences of neighborhood disorder for a high number of absences, but greater neighborhood distrust plays a stronger role in explaining the association. These findings are especially notable because research on the health consequences of disordered neighborhoods has especially emphasized reduced sense of control as a mechanism for these effects (e.g., Ross et al. 2001), and also examined overall levels of trust (e.g., Intravia et al. 2016), but less attention has looked specifically at neighborhood trust as a mechanism. Generalized trust indicates one's attitudes or beliefs about the larger social world, whereas neighborhood trust captures individuals' perception of the degree of social solidarity in their more immediate living environment (Carpiano 2014; Yang and Moorman 2019). It is therefore likely that neighborhood trust is an especially powerful mechanism because neighborhood trust refers specifically to social relationships in one's general living situation, and is therefore a much more proximal influence on the quality of social bonds and social support availability than a more distal measure of generalized trust. This finding is in line with recent research on the COVID-19 pandemic that showed that loss of trust in neighbors was especially detrimental for mental health (Bierman and Schieman 2020). This research therefore suggests that community activities that help to build trust among neighbors may be an especially potent means of combatting negative effects of poor neighborhoods. Moreover, although more empirical evidence would be needed, these results also suggest an important area of theoretical refinement, in terms of emphasizing trust in neighbors rather than generalized trust in conceptual development of the pathways of effects of neighborhood disorder. Future work in studying the health effects of neighborhoods should likely consider whether it is specifically neighborhood trust, rather than generalized trust, that is a key mechanism for the health effects.

Our findings also failed to support the hypotheses based on the framework of structural amplification suggesting that trust and a sense of control would buffer the association between neighborhood disorder and absenteeism. These results are especially surprising in light of research showing that a sense of control does appear to buffer the effects of neighborhood disorder on mental health outcomes, as do social support resources related to neighborhood trust (e.g., Kim and Ross 2009; Schieman and Meersman 2004). A lack of moderation by both psychological resources may have to do with the multi-faced features of absenteeism. Numerous health conditions contribute to absenteeism. It is likely that, even if these psychological resources help people cope with neighborhood effects on specific health outcomes, the sum of the health effects of disordered neighborhoods still can have cumulative consequences for an aggregate outcome such as work absences. This research therefore suggests that models of structural amplification that emphasize stress buffering may be relevant to specific health outcomes, but less so the cumulative effects numerous health decrements due to poor neighborhoods.

An additional issue that may raise concern is that neighborhood trust was measured with a single-item measure. However, our findings are consistent with previous studies that measured neighborhood trust with a single question (Carpiano and Fitterer 2014; Fujiwara and Kawachi 2008), suggesting that these results are not biased by unreliability of a single-item measure. In addition, our findings based on the cross-sectional data may not provide evidence of a temporal relationship between exposure to neighborhood disorder and absenteeism. However, previous longitudinal research underscores the negative effects of neighborhood disorder (Ross et al. 2001), including analyses using advanced analytic techniques that substantially address possible confounding to examine effects of neighborhood disorder on perceived control (Bierman et al. 2018). Moreover, as noted above, it is quite likely that longitudinal studies which adjust for selection out of the workforce due to terminations will find even stronger associations than those observed here.

Neighborhood Disorder and Health-Related Work Absences: Perceived Control and Neighborhood Trust as Explanatory Mechanisms

CONCLUSION

Neighborhood disorder is associated with high degree of absenteeism, while neighborhood trust and perceived control explain this association. These findings underscore the importance of interventions to prevent the deterioration of neighborhoods, as well as help individuals in disordered neighborhoods build community trust. Doing so is likely to not only help individual resist the effects of poor neighborhoods on health, but also have larger structural benefits by preventing a drag on the economy due to lost productivity incurred by a high number of workplaces absences.

ENDNOTES

¹ 185 cases are missed from our sample. The voiceless scale, yielding 135 missing cases, is responsible for the majority of missing.

² The raw data for absenteeism measurement showed that 28.13% of our analytic sample are in the 0 absences group, 48.87% in the 1-5 absences group, 11.89% in the 6-10 in the absences group, 4.57% in the 11-15 absences group, and 6.53% in the 16 or more absences group.

³As an additional test, we examined whether the association between neighborhood disorder and absenteeism is moderated by occupational class. Given that there are different cultures around absenteeism across occupations, general levels of absences may vary across occupational classes (Virtanen, Vahtera and Nygård 2010). However, we did not find significant moderation role by occupational class.

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