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FINANCIAL STRESS, NEIGHBORHOOD STRESS, AND WELL-BEING: MEDIATIONAL AND MODERATIONAL MODELS

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Abstract

This study explores whether high quality neighborhoods or social integration have protective effects on psychological well-being, especially in the face of financial challenges. Previous research suggests that low levels of financial stress, lower neighborhood stress, and social integration are each associated with greater levels of well-being; few studies, however, investigate these contextual variables in confluence. Data from the Notre Dame Study of Health and Well-Being were used to investigate whether (a) neighborhood stress mediates the relationship between financial stress and psychological well-being and (b) social integration moderates the relationship between neighborhood stress and psychological well-being. Results were consistent with both hypotheses and were replicated in data from Successful Aging in Context. These results suggest that proximal contextual variables, such as social integration and neighborhood stress can arbitrate the effect that less proximal contextual variables, such as economic conditions, have on individuals' psychological well-being.

Financial concerns can represent potent stressors, especially at times when the economy experiences a prolonged downturn. It is commonly said that “money doesn’t buy happiness,” but stress, including financial hardship, has been shown to negatively affect psychological well-being (Bergeman & Wallace, 1999). Some people cope better with financial stressors than others, and risk and resilience researchers investigate this process whereby people faced with the same obstacles in life experience different outcomes—some people who go through difficult life events continue to succeed, whereas others suffer from their difficult circumstances.

The factors underlying these differences in the appraisal and management of stress are both genetic and environmental (Rutter & Rutter, 1993); protective factors shield individuals from the detrimental sequelae of risks (Rutter, 1987) and contribute to well-being. These protective mechanisms come in two varieties: individual (dispositional factors) and family

and community factors (Masten, Best, & Garmezy, 1991). According to Bronfenbrenner's (1977) Ecological Systems Theory, individuals exist within a nested system of social interactions. Bronfenbrenner and Morris (2006) assert that development takes place within these nested layers of context; systems at different levels interact with each other and ultimately shape the individual that they surround. The current study examines the relationship between financial stress, which is often influenced by macro-level socioeconomic conditions, and individual well-being; furthermore, in keeping with the ecological systems perspective, we identify some aspects of the community environment that might arbitrate the risk conferred by economic status on psychological well-being.

Ryff and Keyes (1995) use a multidimensional approach to defining psychological well-being, and suggest that self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery, and autonomy together comprise psychological wellness. They take care not to equate well-being with happiness, contending, instead, that the discipline required to achieve certain goals may not facilitate positive affect. Furthermore, Ryff and Keyes (1995) note that individual differences in social class and ethnicity may influence psychological well-being; these findings suggest that researchers interested in individual well-being might do well to devote attention to the wider social context in which individuals are embedded.

Although many studies suggest that income is associated with well-being, the nature of this association is not well understood. Some scholars have hypothesized that income and well-being are related only when people do not have enough money to meet basic needs; other researchers, however, have found that when basic needs are satisfied, this relationship nonetheless persists (Mullis, 1992). Islam, Wills-Herrera, and Hamilton (2009) found a direct link between income and well-being such that higher income is associated with higher levels of well-being. In another study, across all levels of income, several different dimensions of economic well-being, including income and net worth, directly related to psychological well-being (Mullis, 1992). The author also reported, however, vast individual differences in the degree to which individuals' well-being was influenced by their financial resources. Likewise, Diener and colleagues found that income predicted subjective well-being, but that the relationship between the variables differed according to race and educational attainment when income was held constant (Diener, Sandvik, Seidlitz, & Diener, 1993).

Financial stress, because it is generally chronic, can pose a particularly pernicious threat to well-being. Landreville and Vezina (1992) found that daily hassles posed greater threat to physical and psychological well-being than did frequency of major life events. These day-to-day stressors are often called *demands* (Reich & Zautra, 1983). Demands include financial obligations, such as paying rent and purchasing food; they also include things that indirectly require money, such as car repair and home maintenance. An increase in the number of demands is associated with a more negative mood (Reich & Zautra, 1983). Risk factors such as low income exacerbate already-stressful circumstances; in particular, Jerusalem (1993) found that unemployment and substandard housing were associated with additional stressors, like vulnerability to illness. Thus, if a stressful situation occurs in a disadvantaged

person's life, he or she may have fewer resilience resources to facilitate coping (Lazarus & Folkman, 1987).

Although the available data are consistent with Ryff and Keyes' (1995) contention that individual differences in social address may influence well-being, the existing literature suggests that additional work is needed to disentangle the complex relationship between financial circumstances and well-being. The current study, therefore, uses a risk-and-resilience framework to examine whether and in what manner community-level variables intervene in this relationship.

In his Ecological Systems Theory, Bronfenbrenner (1977) asserts that individuals develop within a set of nested systems, with more proximal systems (e.g., social support networks) exerting a more direct influence on the person than distal systems (e.g., culture; Bronfenbrenner, 1977; Bronfenbrenner & Morris, 2006). According to the Ecological Systems model, neighborhoods are *microsystems* because they include interactions between an individual and proximal others. *Mesosystems* are the linkages between microsystems, such as the relationship a person's family has with his or her friends. Communities, on the other hand, are *exosystems* because they encompass several sets of microsystems, including families, neighborhoods, schools, and churches. Exosystems have a more distal effect on individuals, via policies and regulations rather than direct contact (Anderson, Carter, & Lowe, 1999). Finally, economic conditions and society are part of the broader *macrosystem*, which is the furthest removed from direct contact with the individual. In other words, the effect that the current economic climate has on an individual will likely be mitigated by community factors, most proximally through relationships within the neighborhood.

A sense of community with neighbors and peers likely contributes to psychological well-being by augmenting perceptions of social support. Neighborhoods often comprise groups of people with a similar socioeconomic status. Within neighborhoods, residents can find social support, which has been shown to mediate the relationship between one's community environment (such as threats to safety) and his or her mental health (Lin, Thompson, & Kaslow, 2009). Additionally, other factors such as the perceived insecurity of one's neighborhood and neighborhood poverty can account for some psychological distress (Lin et al., 2009). This study, however, did not take into account the income or perceived financial status of participants, which may have had an effect on the participants' reported levels of psychological distress.

Not only is the quality of one's neighborhood likely to influence well-being, but so, too, should one's relationship to that particular layer of context. *Social integration*, the "evaluation of the quality of one's relationship to society and community" (Keyes, 1998, p. 122), facilitates community involvement, which in turn facilitates the development of protective factors, including positive relationships between neighbors and strong networks of social support. Nested between microsystems (e.g., neighborhoods) and macrosystems (e.g., economic conditions; Bronfenbrenner, 1977; Bronfenbrenner & Morris, 2006), social integration can be considered a mesosystem-level variable. Social Integration encompasses several different microsystems, such as a person's friends, family, and club members who make up his or her social support network within neighborhoods and local groups. People

who feel they have adequate social support and a strong sense of social integration tend to have a higher satisfaction with life and greater well-being (Blanco & Diaz, 2007).

Likewise, Lin and colleagues (2009) found an inverse relationship between perceptions of neighborhood quality and social support; individuals reporting that their neighborhoods were unsafe or in disrepair were more likely to report low levels of social support. Furthermore, when both neighborhood quality and social support were low, psychological distress increased. Foster-Fishman et al. (2006) note, however, that a sense of community can be fostered in a low-quality neighborhood and motivate neighbors to act together for change. Thus, it is important to investigate the effect of proximal contextual variables, like social integration, on the relationship between financial stressors and well-being.

The positive effects of social involvement have been studied in the context of varying ages, from adolescence to older adulthood. Webster (2008) studied senior citizens who belonged to one of three social groups. She determined that caring for one another, by giving a hug or providing a ride, gave elders a sense of *eudaimonic* (experienced through a sense of achievement) and *hedonic* (experienced as pleasure through satisfying a need) happiness. *Sense of community* (which encompasses sense of belonging, support, and emotional connection in the community and with peers, satisfaction of needs, and opportunities for involvement and influence) in adolescents was correlated with social well-being, a global construct that encompasses social integration (Albanesi, Cicognani, & Zani, 2007). Being a member of at least one group, such as sports, religious, music, or volunteer organizations, predicted higher levels of sense of community. *Civic engagement*, being involved in political activism or giving charitable assistance, was also associated with higher levels of the construct. The authors assert that it is the social aspects of belonging to these groups that encourage higher sense of community. Community involvement in adolescents has been assessed using participation in sports or other extracurricular activities, religious activities, neighborhood interaction, and employment. Participation in one or more of these groups had protective effects for the participants, as measured by lower scores on a self-report depression scale (Hull, Kilbourne, Reece, & Husaini, 2008). Thus, the existing literature suggests that both the context of neighborhood as well as social support influence an individual's well-being. The relationship between neighborhood and social integration, however, needs to be addressed more explicitly.

In sum, it is clear that well-being is influenced by a variety of factors, including those related to financial stress, neighborhood, and social integration. Although the effect that these various characteristics have on well-being has been studied, there is little knowledge of the way in which these variables might interrelate in impacting well-being. The current study investigates two hypotheses describing various relationships between financial stress, neighborhood quality, social integration, and psychological well-being to more fully understand the way these factors can function as risks or protective mechanisms.

The first hypothesis regarding the relationship between contextual variables and individual well-being is that neighborhood stress will mediate the relationship between financial stress and psychological well-being. Although financial stress is expected to bear a direct effect on well-being initially, this effect is expected to diminish when neighborhood quality is taken

into account. One's neighborhood affects a person's sense of security against robbery or violence, which, if low, can be associated with high psychological distress (Lin et al., 2009). Because the availability of financial resources can influence the neighborhood in which a person is able to live, it is likely that this intervening factor will explain, at least partially, the influence of income on well-being.

Although perceptions of neighborhood quality (when low, referred to as neighborhood stress) are expected to relate to well-being such that greater neighborhood stress should be associated with lower well-being, social integration is expected to moderate this relationship. Foster-Fishman and colleagues (2006) showed that a sense of community in stressed neighborhoods can draw neighbors together to improve their environs. The feeling of being integrated into a community likely boosts perceptions of social support from neighbors, and higher levels of social support are linked to increased psychological well-being (Lin et al., 2009). In particular, individuals reporting higher levels of neighborhood stress and lower levels of social integration are expected to have lower psychological well-being than their counterparts reporting increased social integration or individuals reporting lower levels of neighborhood stress.

METHOD

Participants

Sample 1—Participants included a subsample of the 778 individuals who took part in the Notre Dame Study of Health and Well-Being (NDHWB). Participants were randomly selected from in and around a mid-sized Midwestern city, and were mailed packets of questionnaires assessing several factors related to aging such as stress, protective factors, and well-being, that they returned by mail, along with an informed consent form. They were compensated with a \$20 gift card for completing the questionnaires (for additional recruitment details, please see Whitehead & Bergeman, 2013).

Participants included midlife and aging adults ($M_{age} = 59.4$ years; standard deviation [SD] = 10.0 years; range: 31–91 years), and 58% of the sample was female. The sample reflects the racial and cultural diversity of the Northern Indiana region (i.e., 85% was White, 10% was Black or African American, 2% was Hispanic, 1% was Asian, and the remaining participants reported being either Native American or other). Self-reported income was distributed as follows: 4% less than \$7,500 per year, 12% between \$7,500 and \$14,999, 15% between \$15,000 and \$24,999, 24% between \$25,000 and \$39,999, 29% between \$40,000 and \$74,999, 8% between \$75,000 and \$99,999, and 8% more than \$100,000. Of the sample, 51% was married, 23% divorced, 12% widowed, 12% single, and 1% separated. Additionally, 44% lived with a spouse, 42% lived alone, 5% lived with adult children, 3% lived with a friend, 1% lived with a sibling, and 5% responded “other.”

Of the participants, 97% completed high school, with 66% completing at least some college. It should be noted that differences in income, education level, and marital status were found between groups of younger versus older participants, with older participants, in general, earning less, obtaining lower levels of education, and being more likely widowed than younger participants. No significant differences between age groups were found for gender,

living situation, or race. To ensure comparability across regression analyses, the current sample ($n = 691$) includes only those with complete data on all measures used in the current study.

Because multiple hypotheses were tested in earlier stages of the project (Kapp, 2009), the hypotheses of the current study were tested in a second sample to help establish internal and external validity. Full replication would suggest that the reported results from Sample 1 are not capitalizing on chance (internal validity) and that they are likely to generalize beyond the sample utilized (external validity).

Sample 2—The second sample comprised the subsample of participants from Successful Aging in Context: The Macro-environment and Daily Lived Experience (SAIC) who had completed the same measures. SAIC participants were community-dwelling elders aged between 60 and 74 years and recruited from five counties in Central Illinois using strat-ified random sampling procedures, oversampling from traditionally underrepresented groups. Although a reputable survey-sampling firm was hired to generate addresses of potential participants, it is difficult to determine the viability of address information and thus to determine fair and accurate response rates. Attempting to oversample from traditionally underrepresented groups likely biased the overall response rate (17%) as well; the response rate from the general population subgroups, which are more comparable to those traditionally used in research of this kind, was 22%.

Participants were asked to complete a 43-page questionnaire assessing various aspects of physical and mental health, as well as variables associated with these outcomes. Of the $N = 156$ individuals ($M_{Age} = 66.7$ years, $SD_{Age} = 4.6$ years; range 56–86 years; 54% female; 89.7% White), $n = 77$ had sufficient data to be included in analyses ($M_{Age} = 66.2$ years, $SD_{Age} = 5.2$ years; range: 59–79 years).

Of the subsample, 72% was female. Twenty-one percent of the participants, were educated through high school, 33% completed vocational training or had taken some college classes, 25% had earned a college degree, 9% earned a postcollege professional degree, and 22% had earned a graduate, medical, or law degree. Of the participants, 93% were White and 4% were African American. Eleven individuals declined to report their annual income; 13.6% earned between \$7,500 and \$14,999, 13.6% between \$15,000 and \$24,999, 10.6% between \$25,000 and \$39,999, 27.2% between \$40,000 and \$65,000, and 35% more than \$65,000 yearly. Of the participants, 57% reported being married, 17% divorced, 5% single, and 19.5% widowed; one participant reported being separated from his or her spouse.

Measures

Psychological well-being—The 84-item Psychological Well-Being Scales (Ryff & Keyes, 1995) assessed psychological well-being. Example questions include, “If I were unhappy with my living situation, I would take effective steps to change it” and “For the most part, I am proud of who I am and the life I lead.” Participants responded by selecting a number from 1 (*strongly disagree*) to 4 (*strongly agree*). Items were reverse scored as necessary; high scores indicated a greater psychological well-being (Cronbach’s $\alpha = 0.97$).

Financial stress—Financial stress was measured as responses on five self-report questions (Brim et al., 2011). Respondents rated the first two questions on a scale ranging from 0 (*worst*) to 10 (*best*): “How would you rate your current financial situation?” and “Looking ahead ten years into the future, what do you expect your financial situation will be like at that time?” Respondents rated the next two questions on a scale ranging from 0 (*none*) to 10 (*very much*): “How much control do you have over your current financial situation?” and “How much thought and effort do you put into your current financial situation?” The final question asked, “In general, which of the statements below describes the current financial situation of you and your family?” The respondent chose one of three options: stating that he or she 1 (*does have enough money*), 2 (*does not have enough money*), or 3 (*he or she has more than enough money*). Because of the differing response format across questions, responses were standardized and summed; high scores indicated higher levels of financial stress (Cronbach’s $\alpha = 0.75$).

Neighborhood stress—Neighborhood stress was assessed using a 12-item scale measuring participants’ perceptions of the safety and physical condition in their neighborhoods (Ryff, Magee, Kling, & Wing, 1999). Example items include, “Buildings and streets in my neighborhood are kept in good repair” and “I feel safe being out alone in my neighborhood at night.” Choices range from 1 (*strongly agree*) to 4 (*strongly disagree*). Three items were reverse scored; high scores indicated a higher level of neighborhood stress (Cronbach’s $\alpha = 0.89$).

Social integration—Social integration, the degree to which respondents feel connected to and supported by their communities at large, was measured using a 9-item subscale of Keyes’ (1998) Social Well-Being measure. Self-report items (e.g., “I feel like I am an important part of my community” and “I think that people care about other people’s problems”) were rated from 1 (*strongly disagree*) to 4 (*strongly agree*). One item was reverse scored; high scores indicated greater social integration (Cronbach’s $\alpha = 0.82$).

RESULTS

Descriptive statistics for the NDHWB and SAIC data, including correlations with gender and age, are included in Table 1. There were a few modest correlations between age and the variables of interest (psychological well-being, neighborhood stress, social integration, and financial stress) in the NDHWB data. In general, women seem more likely to report greater neighborhood stress, less financial stress, and higher levels of social integration. The positive correlation between age and social integration suggests that older individuals were more likely to report higher levels of this resource. There were no significant correlations between age, gender, and the variables of interest in the SAIC data.

Table 2 contains correlations between all measures.

Analyses

The hypotheses described both mediational and moderational models. The mediational hypothesis of neighborhood stress mediating the financial stress to psychological well-being relationship was tested first. Mediation is tested as follows: (a) Pathway 1: psychological

well-being is regressed on financial stress; (b) Pathway 2: neighborhood stress is regressed on financial stress; (c) Pathway 3: psychological well-being is regressed on neighborhood stress; and (d) Full Model: psychological well-being is regressed on financial stress and neighborhood stress (Baron & Kenny, 1986). To move from one step to the next, the coefficient describing the relationship between the outcome and the predictor in the regression analysis must be significant. A mediational relationship exists if Pathway 1 is no longer significant after the Full Model is tested; partial mediation is indicated by a significant reduction in the coefficient describing Pathway 1.

Second, the moderational hypothesis of social integration between the neighborhood stress → psychological well-being relationship was tested. A moderating relationship is indicated when there is a significant interaction between neighborhood stress and social integration in predicting psychological well-being, after accounting for the main effects of both variables (Baron & Kenny, 1986).

Results

Sample 1.¹—The first hypothesis suggests that neighborhood stress mediates the financial stress → psychological well-being relationship. Financial stress significantly predicted psychological well-being, $F_{(1, 689)} = 151.07$, $p < .001$, $R^2_{\text{adjusted}} = 0.18$, $\beta = -0.43$, $p < .0001$, and neighborhood stress, $F_{(1, 689)} = 91.67$, $p < .0001$, $R^2_{\text{adjusted}} = 0.12$, $\beta = 0.35$, $p < .0001$. Neighborhood stress significantly predicted psychological well-being, $F_{(1, 689)} = 73.20$, $p < .0001$, $R^2_{\text{adjusted}} = 0.09$, $\beta = -0.31$, $p < .0001$. Once neighborhood stress was added to the financial stress → psychological well-being model, the coefficient describing this relationship diminished in size, $F_{(2, 688)} = 91.73$, $p < .0001$, $R^2_{\text{adjusted}} = 0.21$, $\beta = -0.36$, $p < .0001$, compared with Pathway 1 (financial stress predicting psychological well-being). Because the coefficient remained significant, the results do not meet Baron and Kenny's (1986) criteria for full mediation; however, since the coefficient was diminished in size once the proposed mediator was entered into the regression equation, partial mediation may be indicated. Sobel's test was used to explore partial mediation:

$$\text{Full Path Coefficient} = \frac{ab}{\sqrt{(b^2S_a^2 + a^2S_b^2)}}$$

where a is the beta (β) coefficient describing Pathway 2 (as seen in Figure 1), b is the β value describing Pathway 3, and S_a and S_b are the standard errors of a and b , respectively (Kenny, 2009). The result is treated as a Z -score with a critical value of $p < .05$ of 1.96 (Kenny, 2009). Accordingly, this test revealed that neighborhood stress did partially mediate the relationship between financial stress and psychological well-being ($Z = 6.81$, $p < .0001$).

Tests of the moderational model proposed by the first hypothesis revealed significant main effects of neighborhood stress and social integration on psychological well-being.

¹Because age and gender were correlated with the variables of interest, analyses were re-run, post hoc, controlling for these demographic variables. The addition of these two covariates, however, produced only negligible changes in the magnitude of the regression coefficients, suggesting that these effects were statistically, but not practically, significant. Therefore, only results from the *a priori* analyses are discussed.

Neighborhood stress predicted psychological well-being, $F_{(1, 689)} = 73.20, p < .0001$, $R^2_{\text{adjusted}} = 0.09$, $\beta = -0.31, p < .0001$, such that greater neighborhood stress was related to lower psychological well-being; social integration also predicted well-being, $F_{(1, 689)} = 424.69, p < .0001$, $R^2_{\text{adjusted}} = 0.38$, $\beta = 0.62, p < .0001$, such that greater social integration was related to greater psychological well-being. Because the interaction between neighborhood stress and social integration was significant, $F_{(3, 687)} = 150.27, p < .0001$, $R^2_{\text{adjusted}} = 0.39$, $\beta = -0.06, p = .02$, the moderational hypothesis was supported. Thus, results suggest that feeling integrated into one's community buffers the effects of neighborhood stress on well-being.

Sample 2—Results fully replicated in the subsample of data from Successful Aging in Context.

Financial stress significantly predicted psychological well-being, $F_{(1, 75)} = 17.51, p < .0001$, $R^2_{\text{adjusted}} = 0.18$, $\beta = -0.42, p < .0001$, and neighborhood stress, $F_{(1, 75)} = 30.46, p < .0001$, $R^2_{\text{adjusted}} = 0.28$, $\beta = 0.59, p < .0001$. Neighborhood stress significantly predicted psychological well-being, $F_{(1, 75)} = 22.52, p < .0001$, $R^2_{\text{adjusted}} = 0.22$, $\beta = -0.42, p < .0001$. Once neighborhood stress was added to the financial stress $\rightarrow$ psychological well-being model, the coefficient describing this relationship diminished in size, $F_{(2, 74)} = 14.03, p < .0001$, $R^2_{\text{adjusted}} = 0.25$, $\beta = -0.24, p < .041$, compared with Pathway 1. Because the coefficient remained significant, the results do not meet Baron and Kenny's (1987) criteria for full mediation, but did meet Sobel's criteria for partial mediation: $Z = -3.59, p < .001$.

Neighborhood stress predicted psychological well-being, $F_{(1, 75)} = 22.52, p < .0001$, $R^2_{\text{adjusted}} = 0.22$, $\beta = -0.42, p < .0001$, as did social integration, $F_{(1, 75)} = 46.65, p < .0001$, $R^2_{\text{adjusted}} = 0.38$, $\beta = 0.60, p < .0001$. The moderational hypothesis was supported in these data, as evidenced by a significant interaction between neighborhood stress and social integration, $F_{(3, 73)} = 21.58, p < .0001$, $R^2_{\text{adjusted}} = 0.45$, $\beta = -0.14, p = .03$.

DISCUSSION

With respect to the first hypothesis, the finding of partial mediation suggests that neighborhood quality accounts for part of the relationship between financial stress and well-being; that is, living in challenging environs explains, in part, how the risk that financial stress presents to well-being is conferred. Results can also be interpreted to suggest that a person with limited financial resources may safeguard well-being if she or he secures housing in a neighborhood with fewer of these environmental stressors. Psychological well-being is a global construct that is influenced by intra-individual variables such as expectations for income and standard of living, inter-individual variables such as marital status and community relationships, and wider social and economic contextual variables such as income inequality and unemployment (see Dolan, Peasgood, & White, 2008 for a review). It is particularly remarkable, then, that the combination of just two variables, financial stress and neighborhood quality, explains a substantial proportion of the variance in psychological well-being (21% in NDHWB data, and 25% in the SAIC data). Furthermore, the results of testing the second hypothesis, in conjunction with the literature, suggest that

the relationship between neighborhood quality and psychological well-being is arbitrated by factors that are more amenable to change.

With regard to the second hypothesis, social integration moderated the relationship between neighborhood stress and psychological well-being. Individuals who reported below-mean levels of neighborhood stress and above-mean levels of social integration evince the highest levels of psychological well-being. Interestingly, the group comprising individuals reporting high neighborhood stress and high social integration had a higher mean level of psychological well-being than those in lower stress neighborhoods who did not feel a sense of social integration, or who reported high neighborhood stress and low social integration. This suggests that a sense of connection with neighbors and friends buffers individuals perceiving high neighborhood stress from the detrimental sequelae of stress vis-à-vis well-being. Although this particular moderational relationship does not appear to have been investigated previously, these results are consistent with research that indicates that financial stress and psychological well-being are related (Diener, 1984; Jerusalem, 1993; Mullis, 1992; Reich & Zautra, 1983), and that social integration is related to psychological well-being (Albanesi et al., 2007; Hull et al., 2008; Webster, 2008).

As noted, the R^2_{adjusted} for the full model is 0.39 in the NDHWB data and .45 in the SAIC data, indicating that these two variables explain nearly 40%–45% of the variance related to psychological well-being. This amount of variance explained seems particularly substantial given that this model does not account for any of the personal factors (e.g., control) that are known to have a considerable effect on well-being. The correlation coefficient describing the relationship between social integration and psychological well-being suggests that the variables are closely associated with one another ($r = 0.62$, $p < .0001$), but is not so large as to suggest that the measures are redundant. The correlation coefficient also does not provide context for interrelationships between variables. Careful readers will note that the interaction variable explains only a modest amount of variance in psychological well-being over that accounted for by social integration alone, but the consistency of this finding across data sets, especially of varying sizes, suggests that the effect is likely to generalize.

The finding that social integration buffers individuals' well-being from the detrimental effects of neighborhood stress is particularly interesting from an application perspective. The significant interaction between neighborhood stress and social integration is consistent with Lin et al.'s (2009) finding that when both neighborhood quality and social support were low, psychological well-being suffered most. Foster-Fishman et al. (2006) noted that social integration can be fostered even in high-stress neighborhoods, and that this sense of community can motivate neighbors to act together to improve their environs. Taken together, the results of our analyses suggest that neighborhood quality explains part of the relationship between financial stress and psychological well-being, and that a sense of social integration, which can be cultivated in stressed communities, protects individuals from the detrimental effects of neighborhood stress as it relates to psychological well-being.

Applications, Limitations, and Future Directions

The results of this study, in suggesting that social integration can be a protective factor for those living in challenging circumstances, lend themselves well to application. First, our

results likely have implications for elders who are aging in place or for midlife and older adults considering changes to their living situations as they approach retirement and older age. Neighborhoods change (Brown, Perkins, & Brown, 2002); familiar neighbors move away or die and new individuals and groups move in. Aging in place could negatively affect well-being in neighborhoods experiencing decline, especially in cases where financial resources decrease because of decreasing property values and increasing threats of crime (Brown et al., 2002). Results suggest that for elders choosing to remain in their homes, continuing to interact with neighbors and community groups may have protective effects on well-being even as the neighborhood changes.

There may indeed be a reciprocal relationship between engagement and neighborhood quality. In reviewing the psychological benefits of place attachment, Brown and colleagues (2002) found that individuals' attachment to their homes "reflect[ed] both physical and social investments in homes and blocks" (p. 12); in discussing their findings, the authors suggest that these attachments may be harnessed in the service of increasing social cohesion and revitalizing these neighborhoods. Likewise, for those contemplating relocation as health and finances change, our results suggest that the level of social integration of candidate communities might be more important from a well-being standpoint than the neighborhood per se.

Furthermore, social integration measures the degree to which individuals feel they are part of a group (Keyes, 1998). For example, feeling that one is an integral part of society takes into account factors beyond individual relationships. At the same time, however, it is unlikely that a person will feel socially integrated if she or he is not experiencing positive social relationships. Although this study did account for the relationship between social integration and social support, Lin et al.'s (2009) finding that the combined effects of poor neighborhood quality and little social support had particularly pernicious effects on well-being suggest that this most proximal of social resources could be the means by which many benefits of social integration are conferred. Future studies could investigate the role that social support (conferred within microsystems) plays in the considerable relationship between social integration (a mesosystem variable) and individual well-being.

Future research could also tease apart the differences in these mediating relationships between various groups of people. For example, as is true for a lot of survey research, the current samples are largely Caucasian. Ethnic and racial minority groups may experience higher or lower levels of social integration, depending on whether the reference frame for social integration is within-subgroup or American society at large. For example, if cultural values of a population subgroup encourage members to be closer knit than a representative cross-section of Americans, social integration may serve a greater protective function in the neighborhood stress → psychological well-being relationship. Likewise, if marginalized groups reporting on social integration use as a frame of reference American society at large, then social integration, or lack thereof, could present significant risks to individual well-being. Although the demographic makeup of the current samples preclude investigation of these important questions in these data, future studies could investigate whether and how these mediating and moderating relationships might differ in ethnic and racial minority groups.

Although this study represents progress toward delineating the complex relationships between the variables of interest, the results can only tell us that variables are related and do not address directionality. Longitudinal designs allow for the investigation of relationships across time; future studies using this design may speak to causal directions in the relationships.

Conclusion

In conclusion, this study elucidated complex relations between the nested layers of context in which individuals develop. Results of our analyses suggest that low-stress neighborhoods can decrease the effect that financial stress has on psychological well-being. Furthermore, social integration, which is less resistant to change than financial status, buffers the effect of neighborhood on psychological well-being. In particular, the combined results suggest that lower stress neighborhoods or a sense of integration within even disadvantaged neighborhoods can mitigate some of the pernicious effects of financial stress on psychological well-being. Taken together, these results may inform practice in fields charged with augmenting psychological well-being in those dealing with challenging financial or neighborhood circumstances.

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Table 1

Descriptive Statistics for Variables of Interest in the NDHWB and SAIC Data Sets

<i>Variable</i>	M	SD	<i>r_{age}</i>	<i>r_{gender}</i>
NDHWB				
Psychological well-being	249.61	28.54	.14	.06
Neighborhood stress	21.74	5.80	-.03	.14
Social integration	25.91	3.18	.20	.08
Finance	0.00	3.52	-.02	-.10
SAIC				
Psychological well-being	260.03	28.17	.01	.01
Neighborhood stress	10.57	3.66	.12	.21
Social integration	26.17	2.48	.08	-.01
Finance	0.12	0.98	.44	.08

Note. M = mean; SD = standard deviation; NDHWB = Notre Dame Study of Health and Well-Being; SAIC = Successful Aging in Context: The Macro-environment and Daily Lived Experience; $n = 691$ for the NDHWB data; $n = 77$ for the SAIC data; bold print indicates a correlation significant at the $p < .05$ level.

Table 2

Correlations Between Study Variables for the NDHWB and SAIC Data Sets

	Psychological well-being	Neighborhood stress	Social integration	Financial stress
Psychological well-being	1.00	-0.48	0.62	-0.43
Neighborhood stress	-0.31	1.00	-0.45	0.53
Social integration	0.62	-0.35	1.00	-0.39
Financial stress	-0.43	-0.34	-0.30	1.00

Note. NDHWB = Notre Dame Study of Health and Well-Being; SAIC = Successful Aging in Context: The Macro-environment and Daily Lived Experience; $n = 691$ for the NDHWB, below diagonal; $n = 77$ for the SAIC, above diagonal; bold print indicates a correlation significant at the $p < .05$ level.