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Amy Kapp

*Illinois Wesleyan University*, [akapp@iwu.edu](mailto:akapp@iwu.edu)

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Financial Stress, Neighborhood Stress, and Well-Being: Mediation and Moderation Models

Amy E. Kapp

Illinois Wesleyan University

### Abstract

This study explores how aspects of the community environment might facilitate the stress-and-coping process – specifically, the protective effects of social integration and high quality neighborhoods on psychological well-being. 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 conjunction with one another. Data from the Notre Dame Study of Health and Well-Being were used to investigate whether (1) neighborhood stress moderates the relationship between financial stress and psychological well-being and (2) social integration mediates the relationship between neighborhood stress and psychological well-being. Although the results did not support the moderational hypothesis, *post hoc* analysis did indicate that neighborhood stress mediates the financial stress → psychological well-being relationship. Data supported hypothesis 2. From an ecological systems perspective, these results suggest that proximal contextual variables such as social integration and neighborhood stress can change the effect that less proximal contextual variables, such as economic conditions have on individuals' psychological well-being.

## **Financial Stress, Neighborhood Stress, and Well-Being: Mediational and Moderational Models**

Financial concerns can be stressful for almost anyone, especially at times when the economy experiences a prolonged downturn. It is commonly said that “money doesn’t buy happiness,” but stress (caused by factors such as finances) has been shown to negatively impact psychological well-being (Bergeman & Wallace, 1999). Some people deal better with financial stressors than others; there may be factors in a person’s life that can affect the appraisal or management of stress. These protective mechanisms come in two varieties: individual (dispositional factors) and family/community (supportive others) (Masten, Best, & Garmezy, 1991). According to Bronfenbrenner’s (1977) Ecological Systems Theory, individuals exist within a nested system of social interactions. Bronfenbrenner (1977) asserts 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 aims to identify some of the aspects of the community environment that might facilitate stress-appraisal and stress-management and to investigate their buffering or protective effects on psychological well-being.

### **Well-Being and Happiness**

Scholars have long been interested in understanding well-being. In the fourth century B.C.E., Aristotle conceptualized the construct as *eudaimonia*, or happiness (Cohen, Curd, & Reeve, 2005). Later, as well-being gained prominence as a research topic, several other terms were employed, such as happiness, life satisfaction, quality of life, and positive affect (Diener, 1984), but psychological well-being (Ryff & Keyes, 1995) and subjective well-being (Diener, 2000) are the two constructs most commonly measured.

Ryff and Keyes (1995) *Psychological Well-Being* scale evaluates many aspects of psychological wellness, including self-acceptance, personal growth, purpose in life, positive relations with others, environmental mastery, and autonomy. In general, the measure demonstrates convergent validity with life satisfaction and indicates the degree to which a person is emotionally and mentally healthy. Subjective well-being is similar to psychological well-being, but more specifically assesses affect and satisfaction with life (Diener, 1994; Diener, 2000). Ryff and Keyes (1995) suggest that individual differences in social class and ethnicity may influence psychological well-being.

As Ryff and Keyes (1995) suggest, many factors that are not measured on well-being scales can affect a person's score on the scale. Islam, Wills-Herrera, and Hamilton (2009) showed that income can predict subjective well-being such that higher income is associated with higher levels of well-being. Diener et al. (1993) also found that, for many participants, subjective well-being could be predicted by income, though the relationship between those variables differed based on race (African Americans generally reported lower levels of well-being than Caucasians) and educational attainment (people with more education tended to be happier than those with less education earning the same amount of money). These findings indicate that other factors, including financial stress, need to be investigated as possible moderators or mediators of the relationship between income and well-being.

### **Financial Stress**

People with enough money to meet their basic needs should have fewer financial stressors than people who are struggling financially. Jerusalem (1993) stated that unemployment (which results in reduced financial resources) and substandard housing (which may result from having reduced financial resources) are likely to cause vulnerability to stressors such as illness

(which require money to treat). If a stressful situation occurs in an impoverished person's life, he or she may have fewer resources with which to cope with it (Lazarus & Folkman, 1987). For example, if a woman is faced with the death of her spouse, it would be easier for her to cope with the situation if she did not have to worry about how to cover the costs of the funeral while dealing with her grief.

These day-to-day stressors are often called *demands* (Reich & Zautra, 1983). Demands include financial obligations such as paying the rent and buying food; they also include things that indirectly require money, such as caring for a car and keeping one's house clean. Reich and Zautra (1983) found that an increase in the number of demands is associated with a more negative mood. *Desires*, which were presented as a list of activities that many people find enjoyable, included swimming, visiting museums, and eating at restaurants (Reich & Zautra, 1983). The more time that participants spent involved with their desires, the more positive their moods. It should be noted that financial stress can negatively impact an individual's opportunities to do the things s/he enjoys, because activities such as swimming and dining in restaurants often require money.

The literature suggests that income is associated with well-being in contemporary American life. Diener (1984) notes that wealth has long co-varied with well-being but rejects many of the theories used to explain this association. For example, some theorists have hypothesized that income and well-being are only related when people do not have enough money to meet basic needs; but when basic needs are satisfied, this relationship nonetheless persists (Mullis, 1992). Mullis (1992) found that, across all levels of income, several different measures of economic well-being, including income and net worth, all had a direct relationship with psychological well-being. He also reported, however, that there are vast individual

differences in the degree to which individuals' well-being is influenced by measures of their wealth. For this reason, other factors such as stable traits or current circumstances including neighborhood and support from friends should be considered as possible factors mitigating the income → well-being relationship.

### **Control**

Having enough money and social support are protective factors outside of an individual that help them cope with everyday stressors. Personal protective factors also influence the relationship between financial concerns and well-being. Specifically, many studies suggest that control, the feeling that one has the ability to achieve a desired outcome, is an important mediator between stress and physical health (Montpetit & Bergeman, 2007). Although personal protective factors are not the focus of this study, it is important to acknowledge the widely-studied impact that control has on well-being. Aging adults who feel they have control over events have higher levels of psychological and physical well-being than those who do not feel a high sense of control (Rodin & Timko, 1992). Evidence suggests that money can enhance one's feeling of control. Lachman and Weaver (1998) found that people in low-income groups who had greater perceived control over their lives reported levels of well-being as high as those in high-income groups. These findings indicate that control is one of the factors that mediate the relationship between financial stress and well-being. Because the influence of personal factors, such as control, on the financial concerns → well-being relationship seems comparatively well-researched, the present study will investigate the effects of community factors, which have received less attention in previous research.

### **Community**

**Neighborhood.** 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). For example, according to Bronfenbrenner (1977), neighborhoods are *Microsystems* because they include interactions between an individual and proximal others. Communities, on the other hand, are *Exosystems* because they encompass several sets of *Microsystems*, including families, neighborhoods, schools, and churches. Finally, economic conditions and society are part of the broader *Exosystem*, which is the furthest removed from direct contact with the individual. In other words, the effect that the current economic climate would have on an individual will likely be mitigated by community factors, most proximally through relationships within the neighborhood via social support from neighbors. An individual's ties with his or her neighbors are affected by many factors, including age and familial bonds (Shaw, 2005). Shaw (2005) assessed adults (ages 25 to 74) to determine *anticipated support from neighbors*, the amount of assistance one expects to receive if the need arises. Adults above age 50 expected more social support to be provided by their neighbors than younger adults; marital status did not affect this relationship, but it is particularly salient for individuals lacking close family contact.

A sense of community with neighbors and peers will likely boost psychological well-being in many cases, perhaps as a result of social support. Groups of people with a similar socioeconomic status (SES) are commonly found to live in neighborhoods with one another. Within these 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 level of mental health (Lin, Thompson, & Kaslow, 2009). Lin and colleagues (2009) also found that other factors, such as the perceived safety of one's neighborhood and neighborhood poverty,



can account for some psychological distress. 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' perception of their levels of psychological distress. Positive neighborhood quality can also cause one to choose to take action for the community by volunteering (Smetana et al., 2006).

**Social integration.** Beyond one's environment, or neighborhood, is the "evaluation of the quality of one's relationship to society and community" (Keyes, 1998, p. 122), called *social integration*. Community involvement facilitates the development of relationships between neighbors and helps to build networks of social support. Social integration represents one of Bronfenbrenner's (1977) *Macrosystems*, systems nested between *Microsystems* (e.g. neighborhoods) and *Exosystems* (e.g. economic conditions). Social Integration, as a *Macrosystem*, encompasses several different *Microsystems*, such as the direct contact between a person and the friends and family who make up her social support network within neighborhoods and other localized 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). Lin et al. (2009) found that when a person perceived his or her neighborhood as unsafe or in disrepair, s/he was more likely to feel low levels of perceived social support. When both neighborhood quality and social support were low, psychological distress increased. However, it should be noted that a sense of community can be developed in a low-quality neighborhood and cause neighbors to act together for change (Foster-Fishman, Fitzgerald, Brandell, Nowell, Chavis, & Van Egeren, 2006).

The positive effects of social support have been studied in the context of varying ages, from adolescence to the elderly. Webster (2008) studied senior citizens who belonged to one of

three social groups for the elderly. She determined that caring for one another, by giving a hug or providing a ride, gave them a sense of *eudaimonic* (experienced through a sense of achievement) and *hedonic* (experienced as pleasure through satisfying a need) happiness.

Albanesi, Cicognani, and Zani (2007) measured *Sense of Community* (which assesses sense of belonging, support and emotional connection in the community and with peers, satisfaction of needs, and opportunities for involvement and influence) in adolescents, which they found to be correlated with social well-being, a global construct which encompasses social integration.

Being a member of at least one group (including 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 Sense of Community. The authors assert that it is the social aspects of belonging to these groups that encourage higher sense of community. Hull, Kilbourne, Reece, and Husaini (2008) also assessed community involvement in adolescents, using participation in sports or other extracurricular activities, religious activities, neighborhood interaction, and employment. They found that participation in one or more of these groups had protective effects for the participants, as measured by a self-report depression scale. It is clear that both the context of neighborhood as well as social support from peers influence an individual's well-being.

However, the relationship between neighborhood and social integration needs to be addressed more specifically.

### **Proposed Hypotheses**

**Hypothesis 1.** Even when financial status is measured subjectively, different factors within a person's life can allow someone who does not feel satisfied with his or her income to have a high level of well-being (Mullis, 1992). 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 which neighborhood a person is able to live in, it is likely that this intervening factor will moderate the influence of income on well-being. Thus, neighborhood stress should moderate the relationship between financial stress and psychological well-being. In other words, the combination of low neighborhood stress and low levels of financial stress will better predict psychological well-being than either factor alone.

**Hypothesis 2.** Though a person's neighborhood may elicit social action for change, the feeling of being integrated into a community likely causes people to feel that they have social support; and higher levels of social support are linked to increased psychological well-being (Lin et al., 2009). Although the importance of social integration in relation to well-being has been established (Albanesi et al., 2007; Hull et al., 2008; Webster, 2008), it has not been explored as a mediating factor in the neighborhood stress → well-being relationship. Therefore, one's feeling of social integration, defined as willingness to participate in community affairs and a feeling of connection to neighbors, should mediate the relationship between his or her neighborhood stress and level of well-being. In other words, when social integration is taken into account, the relationship between neighborhood stress and well-being will be diminished.

## Methods

### Participants

Participants included 778 individuals randomly selected from in and around a mid-sized Midwestern city who took part in the Notre Dame Study of Health and Well-Being (NDHWB). Participants were mailed packets of questionnaires, which assessed several factors related to aging such as stress, protective factors, and well-being, which they returned by mail. They were compensated with a \$20 gift card for completing the questionnaires.

Participants included mid-life and aging adults ( $M_{age} = 59.4$  years;  $SD = 10.0$  years; range: 31-91 years). Fifty-eight percent of the sample was female. Eighty-five percent was White; 10% was Black or African American; 2% was Hispanic, 1% was Asian, and the remaining participants were either Native American or Other. Self-reported income was distributed as follows: 4% under \$7500 per year, 12% between \$7500 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% over \$100,000. Fifty-one percent of the sample was married, 23% was divorced, 12% was widowed, 12% was single, and 1% was 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.” Ninety-seven percent of participants 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 more likely widowed than younger participants. No significant differences between age groups were found for gender, living situation, or race.

## Measures

**Psychological well-being.** Psychological well-being scores were recorded from the 84-item Psychological Well-Being Scales (Ryff & Keyes, 1995) (e.g. “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 selected a number from 1 (strongly disagree) to 4 (strongly agree) to indicate their responses. 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 by responses on five different self-report questions (Brim et al., 2007). The first two questions asked respondents, “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?” on a scale from 0 (worst) to 10 (best). The next two questions asked respondents to rate, “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?” on a scale from 0 (none) to 10 (very much). The final question asked respondents, “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 either 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 formats across questions, responses were standardized and summed; higher scores indicated lower levels of stress (Cronbach’s  $\alpha = 0.75$ ).

**Neighborhood stress.** Neighborhood stress scores were recorded from a 12-item Neighborhood scale, which measures participants’ perceptions of the safety and physical condition in their neighborhoods (Ryff, Magee, Kling, & Wing, 1999) (e.g. “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 scores, and higher scores indicated a higher level of neighborhood stress (Cronbach’s  $\alpha = 0.89$ ).

**Social integration.** Social integration scores were recorded from a 9-item subscale of Keyes’ (1998) Social Well-Being measure, which measures the degree to which respondents feel connected to and supported by their communities at large. Self-report items (e.g. “I feel like I am an important part of my community,” “I see society as continually evolving,” 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 and high scores indicated greater social integration (Cronbach's  $\alpha = 0.82$ ).

## Results

### Descriptive statistics

Descriptive statistics, including correlations with gender and age, are included in Table 1.

Table 2 contains correlations between all measures. There is evidence to suggest that social integration and psychological well-being are closely associated with one another ( $r = 0.60$ ,  $p < .001$ ); the correlation coefficient, however, is not so large as to suggest that the measures are redundant and does not provide context for the full picture, as tested in the analyses.

### Analyses

The stated hypotheses of this project described a model that included a moderating factor and a mediating factor. First, the moderational hypothesis of neighborhood stress between the financial stress  $\rightarrow$  psychological well-being relationship was tested. As depicted in Pathway C (see Appendix A), a moderating relationship is demonstrated when there is a significant interaction between financial stress and neighborhood stress in predicting psychological well-being, after accounting for the main effects of both variables (Baron & Kenny, 1986). Secondly, the meditational hypothesis of social integration between the neighborhood stress  $\rightarrow$  psychological well-being relationship was tested. Mediation is tested as follows (see Appendix B for a diagram of the pathways): (a) Pathway 1: psychological well-being is regressed on neighborhood stress; (b) Pathway 2: social integration is regressed on neighborhood stress; (c) Pathway 3: psychological well-being is regressed on social integration; and (d) Full Model: psychological well-being is regressed on neighborhood stress and social integration (Baron &

Kenny, 1986; Montpetit & Bergeman, 2007). In order to move from one step to the next, the coefficient describing the relationship between the outcome and the predictor in the previous regression analysis must be significant. A mediational relationship exists if Pathway 1 is no longer significant after the Full Model is tested.

With regard to the moderational model proposed by Hypothesis 1, neighborhood stress significantly predicted psychological well-being ( $F_{(1, 745)} = 83.23, p < .001, R^2_{\text{adjusted}} = 0.10, \beta = -0.32, p < .001$ ). Financial stress significantly predicted psychological well-being ( $F_{(1, 743)} = 167.46, p < .001, R^2_{\text{adjusted}} = 0.18, \beta = -.043, p < .001$ ). The interaction, however, between financial stress and neighborhood stress did not predict a significant amount of the variability within psychological well-being ( $F_{(1, 729)} = 67.12, p < .001, R^2_{\text{adjusted}} = 0.21, \beta = 0.04, ns$ ). Because the results of this test were not significant, we tested an alternate mediational relationship between these three variables, as depicted in Appendix C. It is likely that neighborhood stress mediates the financial stress  $\rightarrow$  psychological well-being relationship because even if a person is financially stable, if s/he is living in a stressful neighborhood, that will likely negatively impact his or her psychological well-being. Financial stress significantly predicted psychological well-being ( $F_{(1, 743)} = 167.46, p < .001, R^2_{\text{adjusted}} = 0.18, \beta = -0.43, p < .001$ ) and neighborhood stress ( $F_{(1, 745)} = 106.73, p < .001, R^2_{\text{adjusted}} = 0.12, \beta = 0.36, p < .001$ ). Neighborhood stress significantly predicted psychological well-being ( $F_{(1, 745)} = 83.23, p < .001, R^2_{\text{adjusted}} = 0.10, \beta = -0.32, p < .001$ ). Once neighborhood stress was added to the financial stress  $\rightarrow$  psychological well-being model, the coefficient describing this relationship diminished in size ( $F_{(1, 730)} = 99.65, p < .001, R^2_{\text{adjusted}} = 0.21, \beta = -0.36, p < .001$ ) compared with Pathway 1 (financial stress predicting psychological well-being) as mentioned earlier. For interpretive ease, these results are included in Table 4. In order to determine if this diminishment in significance

was partial or full mediation, we used Sobel's test to further test the hypothesis. The equation for this test is as follows:

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

where a is the beta ( $\beta$ ) coefficient describing Pathway 2 (as seen in Appendix B), b is the  $\beta$  value describing Pathway 3, and  $S_a$  and  $S_b$  are the standard errors of a and b, respectively (Kenny, 2009). The resultant value is treated as a Z-score with a critical value of  $p < .05$  of 1.96 (Kenny, 2009). This test revealed that neighborhood stress did mediate the relationship between financial stress and psychological well-being ( $Z = 6.88, p < .001$ ).

In regard to the meditational model proposed by Hypothesis 2: Neighborhood stress significantly predicted psychological well-being ( $F_{(1, 745)} = 83.23, p < .001, R^2_{\text{adjusted}} = 0.10, \beta = -0.32, p < .001$ ) and social integration ( $F_{(1, 709)} = 100.83, p < .001, R^2_{\text{adjusted}} = 0.12, \beta = -0.35, p < .001$ ). Social integration significantly predicted psychological well-being ( $F_{(1, 709)} = 414.22, p < .001, R^2_{\text{adjusted}} = 0.37, \beta = 0.61, p < .001$ ). Once social integration was added to the neighborhood stress  $\rightarrow$  psychological well-being model, the coefficient describing this relationship diminished in size ( $F_{(1, 697)} = 223.27, p < .001, R^2_{\text{adjusted}} = 0.39, \beta = -0.11, p < .001$ ) as compared to the values associated with Pathway 1 (neighborhood stress predicting psychological well-being). For interpretive ease, these results are included in Table 3. Once again, we conducted Sobel's test to determine whether there was a significant mediating relationship, which revealed that social integration did fully mediate the relationship between neighborhood stress and psychological well-being ( $Z = -9.04, p < .001$ ).

Because age and gender were correlated with the variables of interest, analyses were re-run, *post hoc*, controlling for these demographic variables. However, the addition of these two



covariates 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.

### Discussion

With respect to the first hypothesis, neighborhood stress did not moderate the financial stress → psychological well-being relationship. With regard to the *post hoc* hypothesis, however, neighborhood stress did mediate the relationship between financial stress and psychological well-being. In other words, the financial stress → psychological well-being relationship did not hold when neighborhood stress was taken into consideration. Although financial stability can aid a person in affording luxuries that he enjoys, these resources did not appear to buffer a person against stress experienced when living in a neighborhood plagued by crime and disrepair. In contrast, a person with limited financial resources may safeguard well-being if s/he lives in a neighborhood with fewer of these environmental stressors. Although the relationship between neighborhood stress and social support can be supported by past research (Lin et al. 2009), this appears to be the first time that research has been conducted on this specific mediational hypothesis.

With regard to the second hypothesis, however, social integration did mediate the relationship between neighborhood stress and psychological well-being. In other words, the neighborhood stress → psychological well-being relationship can be explained by the degree to which a person feels socially integrated. If a person experiences a high amount of stress within her neighborhood, but also feels a connection with neighbors and friends around her, she can use her sense of social inclusion to buffer the effects of this stress. Although few or no previous studies have investigated this particular mediational relationship, these results are consistent with

previous research. Many other researchers have found 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, Cicognani, & Zani, 2007; Hull, Kilbourne, Reece, & Husaini, 2008; Webster, 2008). As noted in Table 3, the  $R^2_{\text{adjusted}}$  for this full model is 0.39, indicating that these two variables explain nearly 40% 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 impact on well-being.

Although this study did not incorporate a measure of social support, it is likely that this resource is the means by which the benefits of social integration are conferred. Social integration measures the degree to which individuals feel they are part of a group; it is a macro-level system due to the fact that it encompasses large groups full of micro-level relationships. 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 s/he is not experiencing any positive social relationships. It is, therefore, likely that people reporting high levels of social integration experience social support within the groups of which they feel a part. For example, simply paying dues to an organization and being an official member will likely not give a person the feeling of being integrated within that group if s/he does not attend meetings or participate in activities. However, being part of a play group with other families will likely confer a feeling of social integration through the delivery of social support, regardless of the existence of any type of official membership.

Several unique issues related to the relatively large sample size warrant some discussion, particularly with regard to statistical power. Power rests on both sample and effect sizes (Hadzi-

Pavlovic, 2009), and such a large sample yields power to detect relatively small effects. The large sample size is most likely the reason that the results initially indicated only partial (rather than full) mediation, before Sobel's test was conducted. However, this sample size also minimizes the chance of encountering a Type II ( $\beta$ ) error.

As with any research conducted utilizing self-report measures, there is always the possibility of participant bias, including *social desirability*, in which a participant will choose answers that s/he deems socially acceptable, even if it is not the most accurate response (Stocké, 2007). It should be noted that it may well be the case that an individual's perception of his or her experience affects well-being more than objective accounts. There is also the possibility of response bias, which can produce a sample with characteristics different than the population, such as eliminating potential participants who are illiterate or whose primary language is not English.

Ideally, the results of this study would generalize to mid-life and older Americans at large. The demographics of the current sample utilized in this study are consistent with the samples of similar developmental research (Shapiro & Keyes, 2007; Shaw, 2005) and minority groups were over-sampled in order to achieve sample demographics similar to those of the general population.

Despite these possible concerns, this study is one of the first of its kind and serves as a source from which to draw conclusions about the complex effects of living within the nested systems of one's environment. These results indicate the need to focus treatment of individuals with low psychological well-being (such as those experiencing depression) on developing methods of social integration within areas most proximal to the individual. For example, in times of economic distress, it will always be important to look for a job in order to find a means

for physically supporting oneself. However, it could be as important to become a member of a club or neighborhood group in order to take advantage of the mediating effect that social integration can provide from the stress of the effects of a poor economy. For example, groups of unemployed and/or retired people, who may be struggling financially, may provide a feeling of social integration that will assist members with their experience of psychological distress as a result of limited financial resources and the loss of a sense of purpose that can result from losing one's job. Members of one such group, a choir in Leipzig, Germany, proclaim the benefits of having responsibility to learn one's part as well as the camaraderie provided by other members (Westervelt, 2010). Additionally, forming a socially integrated community within neighborhoods which the inhabitants view as being stressful may help to mitigate these affects. Positive relationships between neighbors can form a sense of social integration for community members and create a buffer from the effects of crime and buildings in poor condition. We hope that future research will focus on the clinical implications of these findings so that evidence-based practices will be developed to increase social integration for individuals within neighborhoods.

The results of this study may inform practice within social work, counseling, and related fields with regard to working with clients suffering from low levels of psychological well-being. For example, it is common to find higher levels of depression among groups of aging people who are experiencing many losses in their life (e.g. losing their sense of self-efficacy with limited mobility and/or driving cessation) (Windsor, Anstey, Butterworth, Luszcz, & Andrews, 2007). Incorporating opportunities for social interactions into treatment for these individuals could enhance their levels of psychological well-being despite potential financial stress, such as difficulty paying medical bills with Medicare alone. For example, practitioners could arrange

social activities at a senior service center or pairing these elderly people with members of younger generations, particularly students. The seniors could give the children practical advice earned through life experience while, in return, forming a relationship with the students. In this way, the senior citizens would hopefully feel higher levels of social integration and purpose in life while at the same time helping children to learn the perspective of someone who grew up in a different time. This type of intervention could lead to research which could investigate the change in the mediating effects found in this study, beginning before the program starts and continuing as these individuals form relationships with one another. Our results do not allow us to determine how interventions may change the relationships between the variables of interest. Conducting an experiment which tests for possible change in these variables over time would allow researchers to test whether interventions may be used to take advantage of the mediating relationship that social integration has on the neighborhood stress → psychological well-being relationship.

Furthermore, future research could tease apart the differences in these mediating relationships between various groups of people. For example, it is possible that people of different races or cultural groups will not experience the same mediating effects as the sample of the current sample, which was largely Caucasian. For example, certain ethnic groups may tend to be closer-knit than Americans in general, so it is possible that their reported levels of social integration would be higher and, thus, that variable would be an even stronger mediator of the neighborhood stress → psychological well-being relationship. Additionally, a future study could bring into finer resolution the differences between groups of varying socioeconomic statuses (SES). Paradoxically, despite the fact that the American culture propagates the idea that people with higher income and more assets are able to afford better lives for themselves, it is possible

that these people have their own unique risks for low psychological well-being. Individuals and families who are part of high SES groups are more likely to be able to afford the latest technology, allowing them to entertain themselves within their homes, not venturing out into their neighborhoods or communities to seek social interactions. Additionally, they may feel constantly pressured to earn more money and buy more things in order to compete with the social status of their neighbors. This type of competition would not promote feelings of social integration within these neighborhoods or communities.

In conclusion, this study is one of the first to test these mediating relationships between various layers of the nested systems in which individuals exist. Results of our analyses have shown that low-stress neighborhoods can lessen the effect that financial stress has on psychological well-being. Additionally, social integration is the vehicle through which neighborhood stress impacts individuals' levels of psychological well-being. These results can be used to inform practice to help individuals who are suffering from high neighborhood and/or financial stress. Additionally, further research should be conducted to examine the nature of these relationships further, both within clinical interventions, and between various ethnic or socioeconomic groups. The current study informs basic and applied research about developing communities which help their constituents counteract everyday stressors and brings about new research questions to further investigate these relationships.

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Table 1

*Descriptive Statistics for Variables of Interest*

Variable	$M_M$	$SD_M$	$M_F$	$SD_F$	$r_{age}$
Psychological Well-Being	248.15	26.28	250.89	29.52	0.12
Neighborhood Stress	20.72	5.60	22.38	5.83	-0.05
Social Integration	25.62	3.27	26.12	3.12	0.20
Finance	0.43	26.28	-0.32	3.62	-0.00

*Note.*  $N = 776$ ; Subscripts  $M$  and  $F$  indicate “male” and “female,” respectively:  $n_M = 323$ ;  $n_F = 453$ .

Table 2

*Correlations between Study Variables*

	Psychological Well-Being	Neighborhood Stress	Social Integration	Financial Stress
Psychological Well-Being	1.00			
Neighborhood Stress	<b>-0.32</b>	1.00		
Social Integration	<b>0.60</b>	<b>-0.35</b>	1.00	
Financial Stress	<b>0.43</b>	<b>-0.35</b>	<b>0.30</b>	1.00

*Note.* N=778; **bold** print indicates a correlation significant at the  $p = .001$  level.

Table 3

*Regression Analyses Testing for Mediation of the Neighborhood Stress → PWB**Relationship by Social Integration*

Model	<i>F</i> -value	$R^2_{\text{Adjusted}}$	$B_{\text{Standardized}}$	SE	<i>t</i> -value
Model 1					
Psychological Well-Being	<b>83.23</b>	0.10			
Neighborhood Stress			-0.32	0.03	<b>-9.12</b>
Model 2					
Social Integration	<b>100.83</b>	0.12			
Neighborhood Stress			-0.35	0.03	<b>-10.04</b>
Model 3					
Psychological Well-Being	<b>414.22</b>	0.37			
Social Integration			0.61	0.03	<b>20.35</b>
Model 4					
Psychological Well-Being	<b>223.27</b>	0.39			
Neighborhood Stress			-0.11	0.03	<b>-3.37</b>
Social Integration			0.59	0.03	<b>18.35</b>

*Note.* N=778; **bold** print indicates a correlation significant at the  $p = .001$  level.

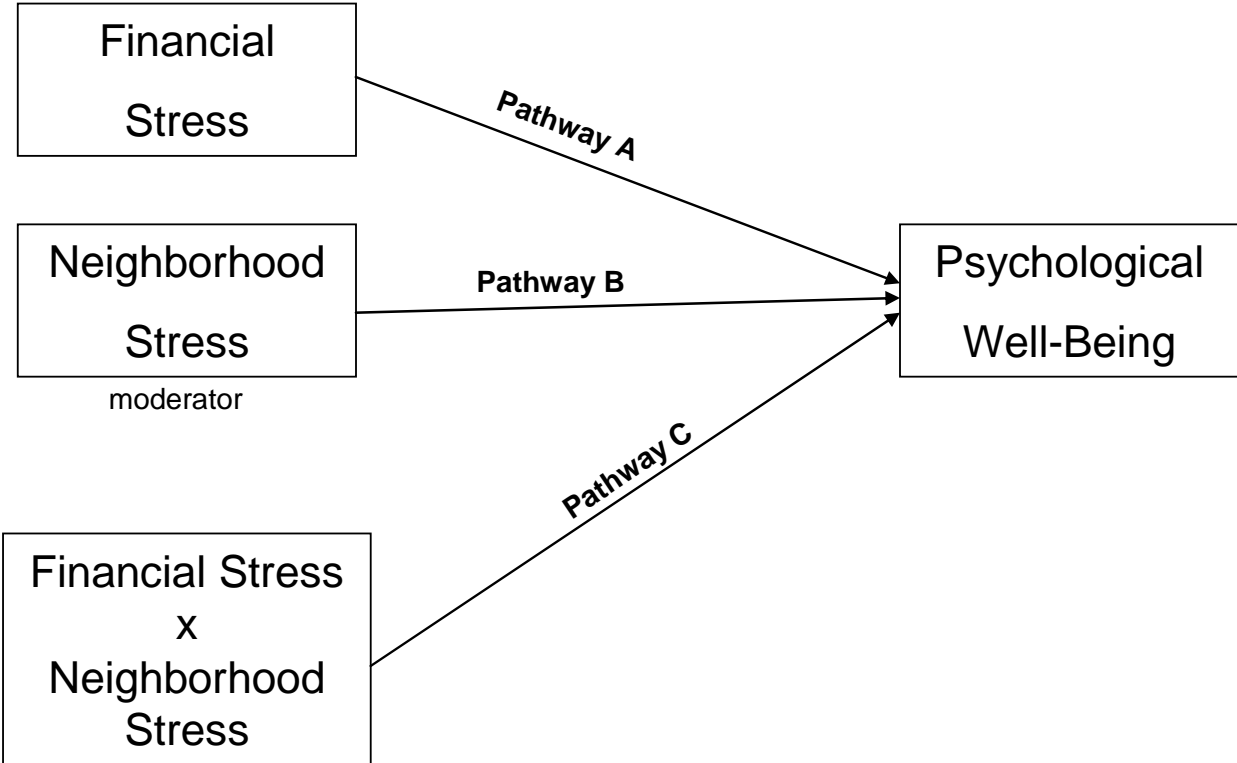
Table 4

*Regression Analyses Testing for Mediation of the Financial Stress → PWB Relationship by Neighborhood Stress*

Model	<i>F</i> -value	$R^2_{\text{Adjusted}}$	$B_{\text{Standardized}}$	SE	<i>t</i> -value
Model 1					
Psychological Well-Being	<b>167.46</b>	0.18			
Financial Stress			-0.43	0.03	<b>-12.94</b>
Model 2					
Neighborhood Stress	<b>106.73</b>	0.12			
Financial Stress			0.36	0.03	<b>10.33</b>
Model 3					
Psychological Well-Being	<b>83.23</b>	0.10			
Neighborhood Stress			-0.32	0.03	<b>-9.12</b>
Model 4					
Psychological Well-Being	<b>99.65</b>	0.21			
Financial Stress			-0.36	0.04	<b>-10.25</b>
Neighborhood Stress			-0.19	0.04	<b>-5.45</b>

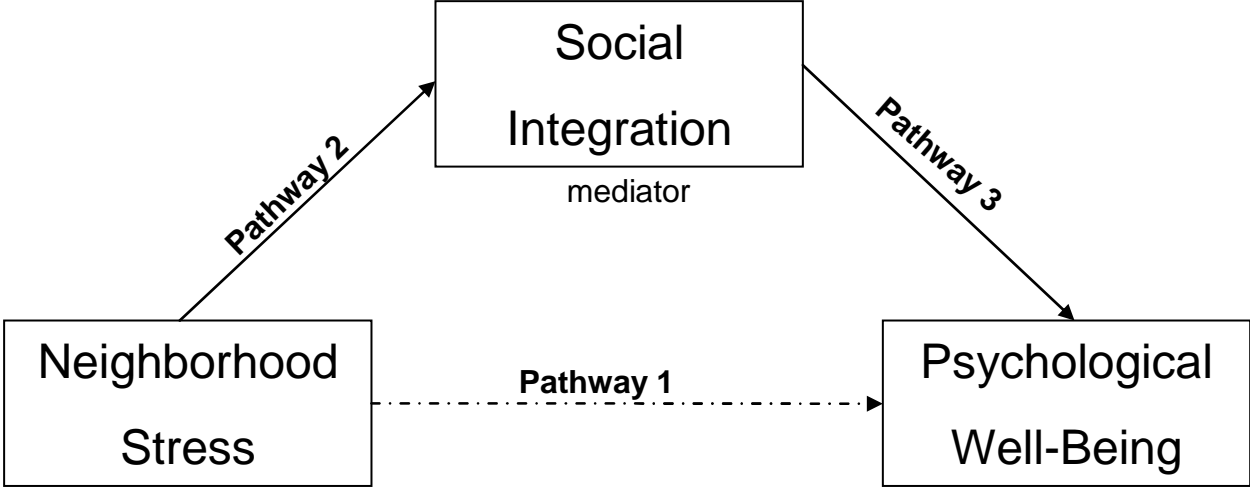
*Note.* N=778; **bold** print indicates a correlation significant at the  $p = .001$  level.

Appendix A





Appendix B



Appendix C

