

## Cumulative Inequality and Late-Life Depression

*Blain Pearson*

*(Coastal Carolina University, USA)*

**Abstract:** Using cumulative inequality theory under the life-course approach, this study adds to the mounting evidence that an individual's quality of life is vastly influenced by the divergent life-course trajectories established by early-life socio-economic disadvantages. Data that are collected from the Health and Retirement Study (HRS) are examined to assess the association between hardship and instability before the age of 16 and the onset of late-life depression. The findings suggest a positive and significant association between early-life hardships and instability and the development of late-life depression. The ensuing discussion highlights that early-life socio-economic disadvantages may hinder life quality in later life.

**Key words:** cumulative inequality theory, economics, health and retirement study, life satisfaction

**JEL code:** D1

### I. Introduction

Depression is one of the most common mental illnesses (Mental Health America, 2020), and depression affects more than 17.3 million Americans (National Institute of Mental Health, 2020). Depression, if left untreated, can lead to relationship difficulties, addiction, self-injury, and employment and school performance difficulties (Blazer, 2003). Due to its devastating consequences, depression is a significant public health concern.

Older individuals are three times more likely than younger individuals to have depression (Gottfries, 2001). The majority of older individuals diagnosed with depression report their late-life depression diagnosis as their first depression diagnosis (Bruce et al., 2002; Brodaty, 2001). Age-related losses, such as the loss of professional identity, physical mobility, and the salience of the future loss of family and friends can affect an individual's ability to maintain relationships and independence, which may lead to the higher incidences of depression in late-life (Alpass & Neville, 2003).

Little research, however, has examined how cumulative inequality established by early-life socio-economic disadvantages can manifest into depression in late-life. The lasting imprint generated as a byproduct of an individual's social system results in inequality, which may affect quality of life. This study examines if cumulative inequality from socio-economic disadvantages can be an additive factor in the onset of late-life depression.

### 2. Literature Review

The causes of depression have been associated with stress (Lauber et al., 2003), feelings of loneliness (Rich &

---

Blain Pearson, Ph.D., Assistant Professor of Finance, Coastal Carolina University; research areas: personal finance, financial planning, and retirement economics. E-mail: [blainpearson@gmail.com](mailto:blainpearson@gmail.com).

Scovel, 1987; Alpass & Neville, 2003), feelings of hopelessness (Abramson et al., 1987; Chochinov, 1998), genetic-related causes (Sanders et al., 1999; Fava and Kendler, 2000; Jorm et al., 1997), maternal-postnatal causes (Hiltunen, 2003; Beck, 2001), and excessive adolescent alcohol consumption (Briones & Woods, 2013). Women are more likely than men to experience depression (Nolen-Hoeksema, 2001; Calhoun, 1974; Elliot, 2001; Silverstein & Perlick, 1995; Nestler et al., 2002). There are little differences in depression across ethnicities or race (Swenson et al., 2000; Hiles et al., 2012). More than half of the individuals that have depression experience difficulties within their family (Lauber et al., 2003). Roughly 75% -90% of depression will reoccur (Angst, 1992; Kupfer, 1992; Solomon et al., 2000).

Overall depression rates have an estimated prevalence of 5-8%, and for individuals over 65 years of age the prevalence of depression is estimated to be 15% (Gottfries, 2001). Over half of the individuals that are first diagnosed with depression are age 60 or older (Brodaty, 2001), and 71% of depressed older home-care patients report their depression as their first episode of depression (Bruce et al., 2002; Pearson & Kalenkoski, 2021). Alpass & Neville (2003) suggest that age-related losses, such as the loss of professional identity, physical mobility, and the salience of loss of family and friends can affect an individual's ability to maintain relationships and independence, which may lead to a higher incidence of depressive symptoms. Koenig et al. (1998) suggests depression in older individuals may result from difficulties older individuals have adjusting to the discomfort, physical disability, and loss of control caused by medical conditions.

Late-life depression is a growing concern for older individuals. Depression can delay recovery from physical illness (Mossey 1990; Parikh et al., 1990), increase the length of hospital stays (Koenig et al, 1989; Fulop et al., 1987), and can shorten mortality (Frasure-Smith, 1993; Koenig et al, 1989; Lin et al., 2009; Shonkoff et al., 2009). Greater functional impairment and poorer cognitive status are associated with persistent depressive symptoms among older individuals (Koenig, 1992; Rapp, 1991; Hale, 2017; Pearson & Guillemette, 2020; Pearson & Lacombe, 2021; Williams et al., 2019). Late-life depression also has been associated with dementia (Butters, 2008; Panza, 2010). Older adults with depression are more likely to seek help from physicians than from mental health professionals (Murrell et al., 1983), and older individuals have a tendency to prefer drug therapy to treat depression (Rokke & Scogin, 1995).

Cumulative inequality theory may help in providing an explanation for depression among older individuals, as cumulative inequality from socioeconomic disadvantages may exhibit itself in an individual's health and sense of health. Stress exposure variations and access to resources may link disadvantaged statuses to physical and emotional health vulnerability (McLeod & Owens, 2004). Van den Berg et al. (2009) and Lundberg (1993) show that economic conditions in the first years after birth affect mortality later in life. Early-life socioeconomic status has been associated with physical, mental, and cognitive well-being in later life (Luo and White, 2005; Dedman et al., 2001; Schafer, 2011; Flacke et al., 2016). Bowen & González (2010) show that early-life socioeconomic status is associated with disability rates in late life. Unfavorable childhood conditions are associated negatively with an individual's maturity (Brandt, 2012; Pearson, 2021; Tømmerås & Kjøbli, 2017). Childhood hardships have been associated with fertility rates (Harville & Boynton-Jarret, 2013). Early-life socioeconomic status has been suggested to increase an individual's tendency to participate in cigarette smoking (Morton et al., 2014) and other negative health behaviors as a coping mechanism (Geronimus et al., 2006).

Cumulative disadvantage may be one of the primary factors in explaining inequality (DiPrete & Eirich, 2006; Pearson, 2020). The systematic tendency for interindividual divergence on a particular characteristic is exacerbated with the passage of time (Dannefer, 2003). Crystal et al. (2016) shows within-cohort correlation between increasing

rates of cumulative advantage and age. Western & Pettit (2010) argue cumulative inequality as an explanation for why prison incarceration is accrued by those who have the weakest economic opportunities. Disadvantages accumulate over the life course and may lead to within-generation differentiation (Ferraro, 2007). The divergence of individuals predicated upon a particular characteristic may compound over multiple generations (Gilligan, 2018; Pearson et al., 2021). Other studies have also shown generational-cumulative inequality and its effect on long-term socioeconomic disadvantage (Bengtson et al., 1997; Aboim & Vasconcelos, 2009; Mare, 2011; Corak, 2013; Hudson, 2016). This study expands the current literature by examining if early-life socio-economic disadvantage is associated with the onset of depression in late life.

### **3. Data**

Data that are collected from The Health and Retirement Study (HRS) are used to examine if early-life hardship and instability are associated with late-life depression<sup>1</sup>. The HRS is sponsored by the National Institute on Aging (grant number NIA U01AG009740) and is conducted by the University of Michigan. The 2016 RAND Corporation’s version of the HRS is utilized. Data and other information provided by the HRS are collected through survey questions and recorded responses. The purpose of the data collection is to provide data for research surrounding health and aging in the United States. The HRS has a participation sample of approximately 20,000 and conducts data collection at both the respondent and household level.

The HRS asks survey participants, “Has a doctor ever told you that you have had problems with depression?” and the follow-up question, “Do you now get psychiatric or psychological treatment for your problems?” Survey participants that answer this question are kept in the study, and missing values are dropped. Roughly, 24.4% report that a doctor has told them that they have problems with depression and roughly 17.7% report receiving psychiatric or psychological treatment for depression-related problems. The sample size is 1,437.

An estimation of early-life hardship is developed from the HRS question, “Before age 16, was there a time when you or your family received help from relatives because of financial difficulties?” Roughly, 23.1% of the sample responded “Yes”. The early-life instability data this study examines comes from the HRS question, “While you were growing up, before age 16, did financial difficulties ever cause you or your family to move to a different place?” Roughly, 18.3% of the sample responded “Yes”.

Table 1 provides the demographic descriptive statistics of this sample. This sample contains 41.7% males, 79.4% are white, and 62.1% are married. The average years of education is 13, the average age is 71.9, and the average income and net worth are \$84,432 and \$159,246, respectfully.

**Table 1 Descriptive Statistics**

	Mean	Std. Dev.
Depression	0.2443	0.4298
Rec. Psyc. Treatment for Depression	0.1768	0.3816
Rec. Help as a Child	0.2310	0.4216
Move as a Child from Hardship	0.1830	0.3868

---

<sup>1</sup> Health and Retirement Study, ([RAND HRS 2016 Fat File (E2A)]) public use dataset. Produced and distributed by the University of Michigan with funding from the National Institute on Aging (grant number NIA U01AG009740). Ann Arbor, MI, ([2019]).

[RAND HRS 2016 Fat File (E2A)]. Produced by the RAND Center for the Study of Aging, with funding from the National Institute on Aging and the Social Security Administration. Santa Monica, CA ([May 2019]).

## Cumulative Inequality and Late-Life Depression

Male	0.4168	0.4932
Years of Education	13.0445	3.1294
White	0.7940	0.4046
Married	0.6207	0.4854
Age	71.9240	8.1778
Income	8.4432	15.3495
Net Worth	15.9246	70.8810

Data from the Health and Retirement Survey

N = 1,437

Net worth and Income Measured in \$10,000s.

If the respondent was male, white, or married a dummy variable for each variable is created and assigned a value of “1”. All other responses are coded as “0”.

### 4. Methods

To examine the associations between early-life hardship and late-life depression, this study estimates the following two cross-sectional probit models via maximum likelihood:

*Probit Regression I:*

$$Dep^* = \beta_0 + \beta_1 RecHelp + \beta_j D_j + e$$

Dep = 1 if  $Dep^* > \mu_1$  (Repondent has depression)

Dep = 0 if  $Dep^* \leq \mu_2$  (Repondent does not has depression)

*Probit Regression II:*

$$TreatDep^* = \beta_0 + \beta_1 RecHelp + \beta_j D_j + e$$

TreatDep = 1 if  $Dep^* > \mu_1$  (Repondent receives depression treatment)

TreatDep = 0 if  $Dep^* \leq \mu_2$  (Repondent does not receives depression treatment)

To examine the associations between early-life instability and late-life depression, this study estimates the following two cross-sectional probit models via maximum likelihood:

*Probit Regression III:*

$$Dep^* = \beta_0 + \beta_1 HardshipMove + \beta_j D_j + e$$

Dep = 1 if  $Dep^* > \mu_1$  (Repondent has depression)

Dep = 0 if  $Dep^* \leq \mu_2$  (Repondent does not has depression)

*Probit Regression IV:*

$$TreatDep^* = \beta_0 + \beta_1 HardshipMove + \beta_j D_j + e$$

TreatDep = 1 if  $TreatDep^* > \mu_1$  (Repondent receives depression treatment)

TreatDep = 0 if  $TreatDep^* \leq \mu_2$  (Repondent does not receives depression treatment))

where  $Dep^*$  in Regressions I and III is the unobserved depression symptoms and Dep is the observed outcome, coded as 1 if the respondent has been told they have depression by a doctor and 0 otherwise. The known observed outcomes are collected via the responses to the HRS question, “Has a doctor ever told you that you have had problems with depression?”  $TreatDep^*$  in Regressions II and IV is the unobserved depression symptoms being

treated, and *TreatDep* is the observed outcome of receiving treatment, coded as 1 if the respondent is receiving treatment for depression and 0 if the respondent is not receiving treatment for depression. The known observed outcomes are collected via the responses to the HRS question, “While you were growing up, before age 16, did financial difficulties ever cause you or your family to move to a different place?”

The key explanatory variable for Regressions I and II, *RecHelp*, enters the model as a binary variable representing whether or not the respondents’ family received help from relatives due to financial difficulties before the respondent was age 16. *RecHelp* is coded as “1” if the respondent family received help and a “0” otherwise.

The key explanatory variable for Regressions III and IV, *HardshipMove*, enters the model as a binary variable representing whether or not the respondents’ financial difficulties resulted in moving to a different place before the respondent was age 16. *HardshipMove* is coded as “1” if the respondents’ financial difficulties resulted in moving to a different place and a “0” otherwise.

$D_j$  is a matrix representing the respondents demographic variables. The demographic variables include indicator variables for whether or not the respondent is male, whether or not the respondent is white, whether or not the respondent is married, and includes continuous measures for years of education, age, age squared, income, and net worth.

$\beta_0$  represents the y-intercept of the model.  $\beta_1$  for each model represents the coefficient associated with the key explanatory variable.  $\beta_j$  is a vector of coefficients related to the  $D$  demographic variables. Average marginal effects are calculated to determine the magnitudes of the associations of these variables with the respective dependent variables.

The expectation is that  $\beta_1$  will result in positive coefficients for Regressions I and III. Early-life hardship and instability are expected to increase the likelihood that individuals will experience depression. The expectation is that  $\beta_1$  will result in positive coefficients for Regressions II and IV. Early-life hardship and instability are expected to increase the likelihood that individuals will experience the need for depression treatment. The dependent variables for probit regressions II and IV serve as a proxy for depression severity.

## 5. Results and Discussion

The results for Regression I and II are reported in Table 2. The average marginal effects for depression (Probit Regression I) and treatment of depression (Probit Regression II) are 0.1392 and 0.1108, respectively. The results for Regression III and IV are reported in Table 3. The average marginal effects for depression (Probit Regression III) and treatment of depression (Probit Regression IV) are 0.1396 and 0.1103, respectively. The findings suggest that early-life hardship and instability are associated positively with late-life depression.

Early-life socio-economic advantages can create a divergent life-course trajectory. This is first established by the higher rate of receipt of early-life resources afforded by socio-economic advantage. The receipt of these resources greatly enhances the ability for an individual to meet the early-life physiological and safety needs required for early-life development. By these needs being met, individuals during early-life development are afforded the opportunity to develop skills to meet other invaluable needs for later life, such as the ability to build intimate relationships, self-esteem, and proper coping mechanisms.

Early-life socio-economic disadvantage, however, is a byproduct of lacking social and economic resources. The lack of social and economic resources during early-life development may limit the opportunity for individuals to develop the skills to meet invaluable needs for later life. This is compounded by the shift in how an individual

**Cumulative Inequality and Late-Life Depression**

may select what skills are deemed valuable or not valuable due to the prestige of those skills in their early-life environment. For example, the ability to provide safety or the ability to provide food are likely to be viewed as higher-ranked skills when compared to building self-esteem.

As an individual ages, the resulting imprint is internalized, which, as suggested by the findings, may manifest into late-life health concerns, such as the onset of depression. Interestingly, the association between early-life hardships and instability are associated with late-life depression even when income and net worth are added as control measures. This may suggest that even if the early-life socio-economic disadvantaged develop economic resources for late-life, the early-life experiences may still be large factor in explaining the onset of depression. This reinforces the notion that the skills required to achieve self-actualization need to be acquired in early life to mitigate the onset of depression.

**Table 2 Average Marginal Effects From Probit Regression on Receiving Help as Child**

	Depression		Treatment for Depression	
	dy/dx	Std. Err.	dy/dx	Std. Err.
Rec. Help as a Child	0.1392***	0.0245	0.1108***	0.0217
Male	-0.0206	0.0237	-0.0161	0.0212
Education	0.0000	0.0038	0.0003	0.0034
White	0.0114	0.0284	-0.0080	0.0251
Age	0.0209	0.0139	0.0222†	0.0127
Age2	-0.0001	0.0001	-0.0002†	0.0001
Married	0.0135	0.0257	0.0022	0.0228
Income	0.0011	0.0008	0.0004	0.0007
Net Worth	-0.0009*	0.0004	-0.0003	0.0003

Data from the Health and Retirement Survey

N = 1,437

Net worth and Income Measured in \$10,000s.

Significance is defined as follows: †significant at  $p < 0.10$ ; \*significant at  $p < 0.05$ ; \*\*significant at  $p < 0.01$ ; \*\*\*significant at  $p < 0.001$ .

**Table 3 Average Marginal Effects From Probit Regression on Moving From Hardship**

	Depression		Treatment for Depression	
	dy/dx	Std. Err.	dy/dx	Std. Err.
Move from Hardship	0.1396***	0.0267	0.1103***	0.0234
Male	-0.0227	0.0238	-0.0177	0.0212
Education	0.0002	0.0038	0.0004	0.0034
White	0.0167	0.0286	-0.0035	0.0253
Age	0.0187	0.0140	0.0205	0.0128
Age2	-0.0001	0.0001	-0.0001†	0.0001
Married	0.0146	0.0258	0.0028	0.0229
Income	0.0011	0.0008	0.0004	0.0008
Net Worth	-0.0009*	0.0004	-0.0003	0.0003

Data from the Health and Retirement Survey

N = 1,437

Net worth and Income Measured in \$10,000s.

Significance is defined as follows: †significant at  $p < 0.10$ ; \*significant at  $p < 0.05$ ; \*\*significant at  $p < 0.01$ ; \*\*\*significant at  $p < 0.001$ .

## 6. Conclusions

The findings support the growing evidence that early-life socioeconomic disadvantages leave a lasting imprint. Individuals that experience hardships and instability before the age of 16 have a strong tendency to carry these experiences with them throughout their lives. These experiences are compounded through an individual's life, which leads to an increase in the likelihood of depression in late life.

### References

- Aboim S. and Vasconcelos P. (2009). "Differential and cumulative effects of life course events in an intergenerational perspective: Social trajectories of three-generation family lineages", *Swiss Journal of Sociology*, No. 2, pp. 297-319.
- Abramson L. Y., Metalsky G. I. and Alloy L. B. (1989). "Hopelessness depression: A theory-based subtype of depression", *Psychological Review*, Vol. 96, No. 2, p. 358.
- Alpass F. M. and Neville S. (2003). "Loneliness, health and depression in older males", *Aging & Mental Health*, Vol. 7, No. 3, pp. 212-216.
- Angst J. (1992). "How recurrent and predictable is depressive illness", *Long-Term Treatment of Depression*, pp. 1-13.
- Beck C. T. (2001). "Predictors of postpartum depression: An update", *Nursing Research*, Vol. 50, No. 5, pp. 275-285.
- Bengtson V. L., Burgess E. O., and Parrott T. M. (1997). "Theory, explanation, and a third generation of theoretical development in social gerontology", *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, Vol. 52, No. 2, pp. S72-S88.
- Blazer D. G. (2003). "Depression in late life: review and commentary", *The Journals of Gerontology Series A: Biological Sciences and Medical Sciences*, Vol. 58, No. 3, M249-M265.
- Bowen M. E. and González H. M. (2010). "Childhood socioeconomic position and disability in later life: results of the health and retirement study", *American Journal of Public Health*, Vol. 100, No. S1, pp. S197-S203.
- Brandt M., Deindl C., and Hank K. (2012). "Tracing the origins of successful aging: the role of childhood conditions and social inequality in explaining later life health", *Social Science & Medicine*, Vol. 74, No. 9, pp. 1418-1425.
- Briones T. L. and Woods J. (2013). "Chronic binge-like alcohol consumption in adolescence causes depression-like symptoms possibly mediated by the effects of BDNF on neurogenesis", *Neuroscience*, Vol. 254, pp. 324-334.
- Brodaty H., Luscombe G., Parker G., Wilhelm K., Hickie I., Austin M. P., and Mitchell P. (2001). "Early and late onset depression in old age: different aetiologies, same phenomenology", *Journal of Affective Disorders*, Vol. 66, No. 2-3, pp. 225-236.
- Bruce M. L., McAvay G. J., Raue P. J., Brown E. L., Meyers B. S., Keohane D. J. and Weber C. (2002). "Major depression in elderly home health care patients", *American Journal of Psychiatry*, Vol. 159, No. 8, pp. 1367-1374.
- Butters M. A., Young J. B., Lopez O., Aizenstein H. J., Mulsant B. H., Reynolds III C. F., and Becker J. T. (2008). "Pathways linking late-life depression to persistent cognitive impairment and dementia", *Dialogues in Clinical Neuroscience*, Vol. 10, No. 3, p. 345.
- Calhoun L. G., Cheney T., and Dawes A. S. (1974). "Locus of control, self-reported depression, and perceived causes of depression", *Journal of Consulting and Clinical Psychology*, Vol. 42, No. 5, p. 736.
- Chochinov H. M., Wilson K. G., Enns M., and Lander S. (1998). "Depression, hopelessness, and suicidal ideation in the terminally ill", *Psychosomatics*, Vol. 39, No. 4, pp. 366-370.
- Cohen A. K. and Syme S. L. (2013). "Education: A missed opportunity for public health intervention", *American Journal of Public Health*, Vol. 103, No. 6, pp. 997-1001.
- Corak M. (2013). "Inequality from generation to generation: The United States in comparison", *The Economics of Inequality, Poverty, and Discrimination in the 21st Century*, Vol. 1, pp. 107-126.
- Crystal S., Shea D. G., and Reyes A. M. (2017). "Cumulative advantage, cumulative disadvantage, and evolving patterns of late-life inequality", *The Gerontologist*, Vol. 57, No. 5, pp. 910-920.
- Dannefer D. (2003). "Cumulative advantage/disadvantage and the life course: Cross-fertilizing age and social science theory", *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, Vol. 58, No. 6, pp. S327-S337.
- Dedman D. J., Gunnell D., Smith G. D. and Frankel, S. (2001). "Childhood housing conditions and later mortality in the Boyd Orr cohort", *Journal of Epidemiology & Community Health*, Vol. 55, No. 1, pp. 10-15.
- DiPrete T. A. and Eirich G. M. (2006). "Cumulative advantage as a mechanism for inequality: A review of theoretical and empirical developments", *Annu. Rev. Sociol.*, Vol. 32, pp. 271-297.

- Elliott M. (2001). "Gender differences in causes of depression", *Women & Health*, Vol. 33, No. 3-4, pp. 183-198.
- Fava M. and Kendler K. S. (2000). "Major depressive disorder", *Neuron*, Vol. 28, No. 2, pp. 335-341.
- Ferraro K. F. (2007). "The gerontological imagination", *Gerontology: Perspectives and Issues*, pp. 325-342.
- Fiske A., Wetherell J. L. and Gatz M. (2009). "Depression in older adults", *Annual Review of Clinical Psychology*, Vol. 5, pp. 363-389.
- Flacke J., Schüle S. A., Köckler H. and Bolte G. (2016). "Mapping environmental inequalities relevant for health for informing urban planning interventions — A case study in the city of Dortmund, Germany", *International Journal of Environmental Research and Public Health*, Vol. 13, No. 7, p. 711.
- Frasure-Smith N., Lespérance F. and Talajic M. (1993). "Depression following myocardial infarction: Impact on 6-month survival", *Jama*, Vol. 270, No. 15, pp. 1819-1825.
- Fulop G., Strain J. J., Vita J., Lyons J. S. and Hammer J. S. (1987). "Impact of psychiatric comorbidity on length of hospital stay for medical/surgical patients: A preliminary report", *Am J Psychiatry*, Vol. 144, No. 7, pp. 878-882.
- Hale J. M. (2017). "Cognitive disparities: The impact of the great depression and cumulative inequality on later-life cognitive function", *Demography*, Vol. 54, No. 6, pp. 2125-2158.
- Hamil-Luker J. and O'Rand A. (2004, October). "Enduring effects of childhood health and life circumstances on disease in later life", *GERONTOLOGIST*, Vol. 44, pp. 321-321.
- Harville E. W. and Boynton-Jarrett R. (2013). "Childhood social hardships and fertility: A prospective cohort study", *Annals of Epidemiology*, Vol. 23, No. 12, pp. 784-790.
- Hatch S. L. (2005). "Conceptualizing and identifying cumulative adversity and protective resources: Implications for understanding health inequalities", *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, Vol. 60, Special Issue 2, pp. S130-S134.
- Hiles S. A., Baker A. L., de Malmanche T. and Attia J. (2012). "A meta-analysis of differences in IL-6 and IL-10 between people with and without depression: Exploring the causes of heterogeneity", *Brain, Behavior, and Immunity*, Vol. 26, No. 7, pp. 1180-1188.
- Hiltunen P. (2003). "Maternal postnatal depression: Causes and consequences", *International Journal of Circumpolar Health*, Vol. 62, No. 3, pp. 308-309.
- Jorm A. F., Korten A. E., Jacomb P. A., Christensen H., Rodgers B., and Pollitt P. (1997). "Public beliefs about causes and risk factors for depression and schizophrenia", *Social Psychiatry and Psychiatric Epidemiology*, Vol. 32, No. 3, pp. 143-148.
- Koenig H. G., George L. K., and Peterson B. L. (1998). "Religiosity and remission of depression in medically ill older patients", *American Journal of Psychiatry*, Vol. 155, No. 4, pp. 536-542.
- Koenig H. G., Goli V., Shelp F., Kudler H. S., Cohen H. J. and Blazer D. G. (1992). "Major depression in hospitalized medically ill older men: documentation, management, and outcome", *International Journal of Geriatric Psychiatry*, Vol. 7, No. 1, pp. 25-34.
- Koenig H. G., Shelp F., Goli V., Cohen H. J., and Blazer D. G. (1989). "Survival and health care utilization in elderly medical inpatients with major depression", *Journal of the American Geriatrics Society*, Vol. 37, No. 7, pp. 599-606.
- Kupfer D. J. (1991). "Long-term treatment of depression", *The Journal of Clinical Psychiatry*.
- Geronimus A. T., Hicken M., Keene D. and Bound J. (2006). "'Weathering' and age patterns of allostatic load scores among blacks and whites in the United States", *American Journal of Public Health*, Vol. 96, No. 5, pp. 826-833.
- Gilligan M., Karraker A., and Jasper A. (2018). "Linked lives and cumulative inequality: A multigenerational family life course framework", *Journal of Family Theory & Review*, Vol. 10, No. 1, pp. 111-125.
- Gottfries C. G. (2001). "Late life depression", *European Archives of Psychiatry and Clinical Neuroscience*, Vol. 251, No. 2, pp. 57-61.
- Lauber C., Falcato L., Nordt C., and Rössler W. (2003). "Lay beliefs about causes of depression", *Acta Psychiatrica Scandinavica*, Vol. 108, pp. 96-99.
- Lin E. H., Heckbert S. R., Rutter C. M., Katon W. J., Ciechanowski P., Ludman E. J. and Von Korff M. (2009). "Depression and increased mortality in diabetes: Unexpected causes of death", *The Annals of Family Medicine*, Vol. 7, No. 5, pp. 414-421.
- Lundberg O. (1993). "The impact of childhood living conditions on illness and mortality in adulthood", *Social Science & Medicine*, Vol. 36, No. 8, pp. 1047-1052.
- Luo Y. and Waite L. J. (2005). "The impact of childhood and adult SES on physical, mental, and cognitive well-being in later life", *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, Vol. 60, No. 2, pp. S93-S101.
- Mare R. D. (2011). "A multigenerational view of inequality", *Demography*, Vol. 48, No. 1, pp. 1-23.
- McDonough P., Worts D., Booker C., McMunn A. and Sacker A. (2015). "Cumulative disadvantage, employment-marriage, and health inequalities among American and British mothers", *Advances in Life Course Research*, Vol. 25, pp. 49-66.
- McLeod J. D. and Owens T. J. (2004). "Psychological well-being in the early life course: Variations by socioeconomic status, gender, and race/ethnicity", *Social Psychology Quarterly*, Vol. 67, No. 3, pp. 257-278.



- Mental Health America (April 21, 2020). "Depression", available online at: <https://www.mha-national.org/conditions/depression>.
- Merton R. K. (1988). "The Matthew effect in science, II: Cumulative advantage and the symbolism of intellectual property", *ISIS*, Vol. 79, No. 4, pp. 606-623.
- Morton P. M., Mustillo S. A. and Ferraro K. F. (2014). "Does childhood misfortune raise the risk of acute myocardial infarction in adulthood?", *Social Science & Medicine*, Vol. 104, pp. 133-141.
- Mossey J. M., Knott K. and Craik R. (1990). "The effects of persistent depressive symptoms on hip fracture recovery", *Journal of Gerontology*, Vol. 45, No. 5, pp. M163-M168.
- Murrell S. A., Himmelfarb S., and Wright K. (1983). "Prevalence of depression and its correlates in older adults", *American Journal of Epidemiology*, Vol. 117, No. 2, pp. 173-185.
- Nestler E. J., Barrot M., DiLeone R. J., Eisch A. J., Gold S. J. and Monteggia L. M. (2002). "Neurobiology of depression", *Neuron*, Vol. 34, No. 1, pp. 13-25.
- National Institute of Mental Health (April 23, 2020). "Major depression", available online at: <https://www.nimh.nih.gov/health/statistics/major-depression.shtml>.
- Nurius P. S., Prince D. M. and Rocha A. (2015). "Cumulative disadvantage and youth well-being: A multi-domain examination with life course implications", *Child and Adolescent Social Work Journal*, Vol. 32, No. 6, pp. 567-576.
- Nolen-Hoeksema S. (2001). "Gender differences in depression", *Current Directions in Psychological Science*, Vol. 10, No. 5, pp. 173-176.
- Panza F., Frisardi V., Capurso C., D'Introno A., Colacicco A. M., Imbimbo B. P. and Capurso A. et al. (2010). "Late-life depression, mild cognitive impairment, and dementia: possible continuum?", *The American Journal of Geriatric Psychiatry*, Vol. 18, No. 2, pp. 98-116.
- Parikh R. M., Robinson R. G., Lipsey J. R., Starkstein S. E., Fedoroff J. P. and Price T. R. (1990). "The impact of poststroke depression on recovery in activities of daily living over a 2-year follow-up", *Archives of Neurology*, Vol. 47, No. 7, pp. 785-789.
- Pearson B. (2020). "Demographic variations in the perception of the investment services offered by financial advisors", *Journal of Accounting and Finance*, Vol. 20, No. 3, pp. 127-139.
- Pearson B. (2021). "The role of personal financial salience", *Journal of Financial Planning*, Vol. 34, No. 8, pp. 74-86.
- Pearson B. and Guillemette M. (2020). "The association between financial risk and retirement satisfaction", *Financial Services Review*, Vol. 28, No. 4, pp. 341-350.
- Pearson B. and Kalenkoski C. M. (2021). "The association between retiree migration and retirement satisfaction", *Journal of Financial Counseling and Planning*, Vol. 33, No. 2, pp. 1-10, doi: 10.1891/JFCP-20-00064.
- Pearson B., Korankye T. and Salehi H. (2021). "Comparative advantage in the household: should one person specialize in a household's financial matters?", *Journal of Family and Economic Issues*, pp. 1-11, doi: 10.1007/s10834-021-09807-y.
- Pearson B. and Lacombe D. (2021). "The relationship between home equity and retirement satisfaction", *Journal of Personal Finance*, Vol. 20, No. 1, pp. 40-51.
- Rapp S. R., Parisi S. A. and Wallace C. E. (1991). "Comorbid psychiatric disorders in elderly medical patients: A 1-year prospective study", *Journal of the American Geriatrics Society*, Vol. 39, No. 2, pp. 124-131.
- Rich A. R. and Scovel M. (1987). "Causes of depression in college students: A cross-lagged panel correlational analysis", *Psychological Reports*, Vol. 60, No. 1, pp. 27-30.
- Rokke P. D. and Scogin F. (1995). "Depression treatment preferences in younger and older adults", *Journal of Clinical Geropsychology*.
- Sanders A. R., Detera-Wadleigh S. D. and Gershon E. S. (1999). "Molecular genetics of mood disorders", *Neurobiology of Mental Illness*, New York: Oxford, pp. 299-316.
- Schafer M. H., Ferraro K. F. and Mustillo S. A. (2011). "Children of misfortune: Early adversity and cumulative inequality in perceived life trajectories", *American Journal of Sociology*, Vol. 116, No. 4, pp. 1053-1091.
- Shonkoff J. P., Boyce W. T., and McEwen B. S. (2009). "Neuroscience, molecular biology, and the childhood roots of health disparities: building a new framework for health promotion and disease prevention", *Jama*, Vol. 301, No. 21, pp. 2252-2259.
- Silverstein B. and Perlick D. (1995). *The Cost of Competence: Why Inequality Causes Depression, Eating Disorders, and Illness in Women*, Oxford University Press on Demand.
- Solomon D. A., Keller M. B., Leon A. C., Mueller T. I., Lavori P. W., Shea M. T. and Endicott J. (2000). "Multiple recurrences of major depressive disorder", *American Journal of Psychiatry*, Vol. 157, No. 2, pp. 229-233.
- Swenson C. J., Baxter J., Shetterly S. M., Scarbro S. L., and Hamman R. F. (2000). "Depressive symptoms in hispanic and non-hispanic white rural elderly the San Luis Valley health and aging study", *American Journal of Epidemiology*, Vol. 152, No. 11, pp. 1048-1055.

- Tømmerås T. and Kjøbli J. (2017). "Family resources and effects on child behavior problem interventions: A cumulative risk approach", *Journal of Child and Family Studies*, Vol. 26, No. 10, pp. 2936-2947.
- Western B. and Pettit B. (2010). "Incarceration & social inequality", *Daedalus*, Vol. 139, No. 3, pp. 8-19.
- White M., Adams J., and Heywood, P. (2009). "How and why do interventions that increase health overall widen inequalities within populations", *Social Inequality and Public Health*, Vol. 65, p. 82.
- Williams M. M., Kemp B. R., Ferraro K. F. and Mustillo S. A. (2019). "Avoiding the major causes of death: does childhood misfortune reduce the likelihood of being disease free in later life?", *The Journals of Gerontology: Series B*, Vol. 74, No. 1, pp. 170-180.
- Van den Berg G. J., Doblhammer G. and Christensen K. (2009). "Exogenous determinants of early-life conditions, and mortality later in life", *Social Science & Medicine*, Vol. 68, No. 9, pp. 1591-1598.
- Van Solinge H. and Henkens K. (2008). "Adjustment to and satisfaction with retirement: Two of a kind?", *Psychology and Aging*, Vol. 23, No. 2, p. 422.