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Psychological distress and self-reported mental disorders: the partially mediating role of coping strategies

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ABSTRACT

Background and Objectives: Accumulating evidence suggests a substantial prevalence of mental health disorders worldwide and the association between psychological distress and mental disorders. However, the mechanisms underlying this association are underexplored. Using longitudinal data, this study examined coping strategies as a potential mechanism.

Methods: Participants ($N = 2,333$) from the Midlife in the United States (MIDUS) completed psychosocial and mental health surveys over 19 years. A parallel mediation model was used to test the direct association between psychological distress (baseline) and self-reported mental disorders (17–19 years follow-up) and the indirect associations via coping strategies (8–11 years follow-up), controlling for demographics and baseline self-reported mental disorders.

Results: Psychological distress predicted an increased likelihood of mental disorders later in life. Emotion-focused coping was a significant mediator of this association, but problem-focused coping was not. Psychological distress was positively associated with emotion-focused coping, and emotion-focused coping was positively associated with mental disorders. Psychological distress was negatively associated with problem-focused coping; however, no association was found between problem-focused coping and mental disorders.

Conclusions: Findings provide further support for the longitudinal association between psychological distress and mental health disorders and extend prior research by showing the partial mediating role of emotion-focused coping in this association.

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Introduction

One in three individuals worldwide will develop a mental disorder (e.g., anxiety, depression, eating disorder, personality disorder) during their lifetime at a substantial economic cost to society and considerable burden to the individual (Christensen et al., 2020; Heim et al., 2017). In the United States (U.S.), anxiety and depression are the most prevalent mental disorders and commonly co-occur (Hirschfeld, 2001). Among middle-aged and older adults, the prevalence of mental disorders is increasing. One in four older adults reported anxiety and/or depression in August 2020, an increase in prevalence from one in ten in 2018 (Koma et al., 2020). Furthermore, the prevalence of mental disorders is likely underestimated because symptoms of mental disorders later in life can be mistakenly attributed to life changes, other illnesses, or medication side effects (Centers for Disease Control and Prevention, 2021).

Mental disorders also have an adverse impact on existing health conditions and treatments (Bhattacharya et al., 2014; Chapman et al., 2005). Depression and anxiety are significant predictors of cognitive impairment and Alzheimer's disease (de Vito et al., 2019; Gallagher et al., 2018), associated with a lower quality of life (Bourland et al., 2000), disability onset (Dong et al., 2020), an increased risk of morbidity and mortality (Blazer, 2003), and a greater risk of developing type 2 diabetes independent of traditional risk factors for the disease (Khambaty et al., 2017). Moreover, a systematic review of the global impact of the COVID-19 pandemic showed significant levels of mental disorders, representing an "unprecedented threat to mental health in high, middle, and low-income countries" (Xiong et al., 2020, p. 62).

The effect of psychological distress on mental disorders

According to the transactional model of stress and coping (Lazarus & Folkman, 1984), the way individuals cope with psychological distress plays an important role in mental health. Psychological distress refers to the extent to which individuals experience negative emotions such as sadness, nervousness, irritability, and hopelessness (Kessler, Andrews, et al., 2002; Kessler, Barker, et al., 2003). Persistent psychological distress can adversely influence cognition, self-image, and worldview. Individuals with high psychological distress tend to exhibit multiple adverse emotional states (e.g., negative views of self, anger, guilt, worry) and are more likely to show an inability to cope effectively with life stressors (Watson & Clark, 1984). A general inability to regulate adverse emotions predisposes individuals to develop a mental disorder such as anxiety or depression (Forgas, 2008; Turner et al., 2020). Although the influence of psychological distress on mental disorders is well documented, research on the mechanism through which this process occurs is limited (Iqbal & Dar, 2015).

Coping as a mediator linking psychological distress to mental disorders

Given the serious physical and societal consequences associated with mental disorders among middle-aged and older adults, it is important to explore modifiable determinants that explain the underlying mechanism of the association between psychological distress and mental disorders. One key aspect of psychological distress consists of poor abilities to manage life stressors, which suggests that the way individuals cope with negative emotions and stressful situations may partially explain the association between psychological distress and mental disorders (Rettie & Daniels, 2021; Watson & Clark, 1984). As such, researchers have hypothesized that coping strategies are one possible mechanism accounting for the association between psychological distress and mental disorders (Lazarus & Folkman, 1984).

The transactional model of stress and coping defines stress as a transaction between an individual and their environment whereby stress results if the individual appraises environmental demands as outweighing their ability to cope with those demands (Lazarus & Folkman, 1984). Coping strategies, defined as cognitive and behavioral efforts to manage stressful situations appraised as taxing or exceeding an individual's resources, are an important predictor of mental health (Carver et al., 1989; Lazarus & Folkman, 1984; Orgeta & Orrell, 2014). Individuals cope with negative emotions and stressful situations in a variety of ways. Coping can be transformative or spiritual, focus on problems or emotions, or consist of behavioral avoidance (Lazarus & Folkman, 1984; Skinner et al., 2003). Prior research suggests that different coping strategies may directly influence the development or adjustment of psychopathology (Carver et al., 1989). Coping is a process that is constantly evaluated and updated, and when effective, different coping strategies work together in a complementary fashion to promote adaptation to stress (Lazarus & Folkman, 1984).

Although researchers often categorize problem-focused coping strategies as adaptive and emotion-focused coping strategies as maladaptive, the effectiveness of coping strategies often depends on individual differences, the specific context, and the nature of the stressors. No one

coping strategy is inherently superior to another (Lazarus & Folkman, 1984). In general, emotion-focused coping strategies are more likely used when appraisals of the situation suggest that nothing can be done to change the situation or challenging environmental conditions. Problem-focused coping strategies are more typically used when appraisals suggest that the stressful situation is controllable and amenable to change (Carver et al., 1989; Lazarus & Folkman, 1984). However, individuals possess the capacity to employ different coping strategies depending on the specific type and severity of the stressors, referred to as regulatory flexibility. The extent to which individuals have a diverse repertoire of coping strategies and flexibility in adjusting coping strategies during the regulation process is important when determining the underlying mechanism of the association between psychological distress and mental disorders (Bonanno & Burton, 2013).

Emotion-focused coping strategies typically focus on reducing emotional distress and regulating one's thoughts and feelings in response to stressful situations (Lazarus & Folkman, 1984). Higher psychological distress has been associated with emotion-focused coping strategies such as denial, venting of emotion, and behavioral disengagement (Carver et al., 1989; Eaton & Bradley, 2008). In general, individuals with high psychological distress are more likely to engage in avoidance and disengagement when faced with life stressors than address the source of the stressors directly, in turn contributing to a greater prevalence of mental disorders (Naragon-Gainey, 2019; O'Brien et al., 2008; Rettie & Daniels, 2021). However, previous research also noted that emotion-focused coping strategies are adaptive when dealing with uncontrollable stressors. Coping strategies such as adaptable disengagement and avoidance in response to uncontrollable stressors may in turn be associated with less mental distress (Austenfeld & Stanton, 2004; Stanislawski, 2019). These studies suggest that the association between psychological distress and emotion-focused coping may be explained by the nature of the stressors and "goodness of fit" between one's appraisal of the stressor and chosen coping strategy.

Problem-focused coping strategies typically focus on managing stressful situations as individuals attempt to alter their relationships with the environment by modifying or eliminating the sources of stressors (Lazarus & Folkman, 1984). Problem-focused coping involves strategies such as taking action, planning, and seeking social support (Carver et al., 1989), and is associated with a lower prevalence of mental disorders (Ben-Zur, 2009; Bozo et al., 2018). When confronted with stressful situations, individuals who are more likely to manage the stressful situation directly, or cope by altering the meaning of the stressful event (i.e., use problem-focused coping strategies) have a lower prevalence of mental disorders (Kaiseler et al., 2012; O'Brien et al., 2008), most notably when individuals have control or influence over the stressor (Endler, 1997).

Although potential mechanisms of the association between psychological distress and mental disorders remain elusive, we found an exploratory study that examined whether coping strategies mediated the association between neuroticism and change in mental disorder symptoms in a sample of former psychiatric outpatients seven years following initial involvement with the outpatient clinic (Vollrath et al., 1998). In general, patients scoring higher in neuroticism tended to use more venting of emotions and disengagement coping strategies and less active goal-oriented problem-focused coping strategies to resolve problems. Emotion-focused coping strategies partially accounted for the negative effects of neuroticism on several clinical syndromes ranging from milder mental health disorders such as anxiety to more severe mental disorders such as major depression and delusional disorder. In addition, a recent study of the general population in the United Kingdom found that emotion-focused coping strategies partially mediated the association between intolerance of uncertainty during the COVID-19 pandemic and generalized anxiety and depression (Rettie & Daniels, 2021). Findings from these studies are aligned with the transactional model of stress and coping which posits that health outcomes are a consequence of how individuals cope with psychological distress. A greater reliance on emotion-focused coping strategies in response to stress can have an adverse impact on one's mental health (Rettie & Daniels, 2021), whereas a greater reliance on problem-focused coping strategies is generally associated with enhanced mental health (Holahan & Moos, 1986; Moritz et al., 2016).

The current study examined the longitudinal association between psychological distress and the prevalence of self-reported mental disorders 17–19 years after baseline, as well as the mediating effects of emotion-focused and problem-focused coping strategies at 8–11 years follow-up. We hypothesized that psychological distress would have a positive association with the prevalence of mental disorders later in life. Further, we expected coping strategies to partially mediate this association.

Methods

Procedure and participants

This study was a secondary analysis of data using a national longitudinal survey of health and well-being from the Midlife in the United States (MIDUS) study. A multidisciplinary research team recruited participants using a random digit dialing procedure. The study sample consisted of English-speaking non-institutionalized adults aged 25–74 living in the U.S. (Radler, 2014). The first wave of the MIDUS survey, conducted in 1995–1996 ($N = 7,108$) was followed by a second wave in 2004–2006 ($N = 4,963$), and a third wave in 2013–2014 ($N = 3,294$).

A total of 2,462 participants completed Wave 1 (baseline), Wave 2 (follow-up at 8–11 years), and Wave 3 (follow-up at 17–19 years). Of these, 129 participants had missing data on one or more demographic ($n = 104$), psychological distress ($n = 6$), problem-focused coping ($n = 24$), or emotion-focused coping ($n = 23$) variables. Listwise deletion was carried out by the statistical software, thus, the final analytic sample size was $N = 2,333$. The mean age of participants was 64.73 ± 11.22 years. A majority of the sample was female ($n = 1,295$, 55.5%), White ($n = 2,108$, 90.4%), had a college degree ($n = 1,232$, 52.8%), unemployed ($n = 1,376$, 59%), and married ($n = 1,576$, 67.6%). See Table 1 for additional information. Data from the MIDUS study are publicly available through the Inter-University Consortium for Political and Social Research (ICPSR). Thus, the present study was exempt from IRB approval.

Measures

Psychological distress

The six-item Kessler psychological distress scale is a non-specific distress measure used as a screening tool for a variety of mental disorders (Kessler, Andrews, et al., 2002). The psychological distress scale was assessed at Wave 1. Participants were asked how often during the past 30 days they felt “so

Table 1. Demographic data (Wave 3) and measured variables ($N = 2,333$).

Characteristic and Variables	<i>n</i> or Range	Mean (<i>SD</i>) or %
Age		64.73 (11.22)
Sex (% female)	1,295	55.5%
Race		
White	2,108	90.4%
Non-White	225	9.6%
Education		
Less than high school	105	4.5%
High school diploma	579	24.8%
Some college	417	17.9%
College degree	742	31.8%
Graduate school and above	490	21.0%
Employment status (% currently unemployed)	1,376	59%
Marital status (% currently married)	1,576	67.6%
Wave 1 psychological distress (6 items)	1–5	1.49 (.56)
Wave 1 mental disorders (% yes)	419	18.0%
Wave 2 emotion-focused coping (12 items)	12–48	21.97 (5.41)
Wave 2 problem-focused coping (12 items)	12–48	38.18 (5.94)
Wave 3 mental disorders (% yes)	457	19.6%

sad nothing could cheer you up," "nervous," "restless or fidgety," "hopeless," "that everything was an effort," and "worthless," respectively on a 5-point Likert scale ranging from 1 = *all of the time* to 5 = *none of the time*. Items were reversed such that higher scores indicated greater psychological distress and then averaged. Scale reliability in the current study was strong ($\alpha = .86$).

Emotion-focused coping

Twelve items from three Coping Orientation to Problems Experienced (COPE) subscales at Wave 2 were used to measure emotion-focused coping strategies (Carver et al., 1989; Kling et al., 1997). On a 4-point Likert scale ranging from 1 = *a lot* to 4 = *not at all*, participants evaluated how often they responded to difficult or stressful life events in specific ways. The COPE subscales were Focus on and Venting of Emotion (e.g., "I get upset and let my emotions out."), Denial (e.g., "I act as though it hasn't even happened."), and Behavioral Disengagement (e.g., "I admit to myself that I can't deal with it and quit trying."). We reverse scored and summed responses such that higher scores indicated greater engagement in emotion-focused coping. Scale reliability in the current study was strong ($\alpha = .82$).

Problem-focused coping

Twelve items from three COPE subscales at Wave 2 were used to measure problem-focused coping strategies (Carver et al., 1989; Kling et al., 1997). Participants evaluated how often they responded to difficult or stressful life events on a 4-point Likert scale ranging from 1 = *a lot* to 4 = *not at all*. The COPE subscales included Positive Reinterpretation and Growth (e.g., "I try to see it in a different light, to make it seem more positive."), Active Coping (e.g., "I take direct action to get around the problem."), and Planning (e.g., "I think about how I might best handle the problem."). We reversed scored and summed responses such that higher scores indicated greater engagement in problem-focused coping. Scale reliability in the current study was strong ($\alpha = .90$).

Mental disorders

Self-reported mental disorders were measured at both Wave 1 and Wave 3 using the MIDUS longitudinal data set. Participants were asked whether they had experienced or been treated for "anxiety, depression, or some other emotional disorder" in the past 12 months. The presence of mental disorders was dichotomized as 0 = *no* or 1 = *yes*.

Statistical analysis

All analyses were performed using SPSS Statistics version 28 (SPSS, IBM Corp, Armonk, NY, USA). The distribution of demographic variables and bivariate correlation coefficients among study variables were assessed. A logistic regression with PROCESS macro, which implements a bootstrapping approach to calculate the point estimates and 95% confidence intervals (CIs), was used to test the hypothesized parallel mediation model. The bootstrap sample numbers were set at 5,000. For the current analyses, direct and indirect effects were provided as log odds to estimate odds ratios (ORs) and CIs since the outcome variable was dichotomous. Indirect effects were considered significant if 95% CI for the OR did not include one.

Demographic variables including age, sex, race, education, employment status, and marital status from Wave 3 were examined as covariates due to 17–19 years gap between Wave 1 and Wave 3. At Wave 3, fewer participants identified as White (94.7% to 90.4%), and were married (74% to 67.6%), and more participants had a college degree (48.2% to 52.8%) and were unemployed (32.3% to 59%). Mental disorders at Wave 1 were also included in the analysis as a control variable. The model tested the direct association between psychological distress at Wave 1 and the prevalence of mental disorders at Wave 3, and the indirect effects of emotion-focused and problem-focused coping strategies at Wave 2 on the association between psychological distress and the prevalence of mental disorders.

Results

Table 2 presents bivariate correlations among study variables. Figure 1 shows ORs (paths to the dichotomous outcome variable) and unstandardized regression coefficients (paths to mediators) from testing the hypothesized model. As hypothesized, higher psychological distress at Wave 1 was associated with a higher prevalence of mental disorders at Wave 3 (direct effect OR: 1.74, [95% CI: 1.42, 2.14], $p < .001$) after controlling for demographic variables, Wave 1 mental disorders, and emotion-focused and problem-focused coping strategies. Emotion-focused coping at Wave 2 was a significant mediator between the association of psychological distress and mental disorders (indirect effect OR: 1.13, [1.06, 1.22]), but problem-focused coping was not (indirect effect OR: 1.03, [1.00, 1.07]). Psychological distress at Wave 1 was positively associated with emotion-focused coping at Wave 2 ($B = 2.79$, $SE = .21$, $p < .001$), and emotion-focused coping at Wave 2 was positively associated with mental disorders at Wave 3 (OR: 1.05, [1.02, 1.07] $p < .001$). Psychological distress at Wave 1 was negatively associated with problem-focused coping at Wave 2 ($B = -1.74$, $SE = .25$, $p < .001$); however, no association was found between problem-focused coping at Wave 2 and mental disorders at Wave 3 (OR: 0.98, [0.96, 1.00], $p = .08$).

Discussion

Mental disorders affect one in three individuals worldwide (Christensen et al., 2020; Heim et al., 2017). Using the longitudinal MIDUS dataset, the current study found a significant association between psychological distress (Wave 1) and mental disorders 17–19 years later (Wave 3), while controlling for demographic variables and baseline mental disorders. This association was partially mediated by emotion-focused coping strategies, but not problem-focused coping strategies at 8–11 years follow-up (Wave 2).

The finding of a direct association between psychological distress and a higher prevalence of mental disorders builds on prior longitudinal research that a negative reactivity to stressors was associated with increased depressive symptoms (Cohen et al., 2005), and that negative emotions, worry, and rumination were associated with depression and anxiety and the relapse of depression and anxiety at 3-year follow-up (Spinhoven et al., 2018). Although effective forms of psychotherapy (e.g., cognitive therapy, cognitive-behavioral therapy) are designed to assist individuals in better regulating emotional distress caused by negative thinking and unwanted behavioral patterns (van der Velden et al., 2015; Wiles et al., 2016), previous research examining the mechanisms linking psychological distress with mental disorders is limited.

This study found that emotion-focused coping strategies partially mediated the association between psychological distress and mental disorders later in life. Participants with higher psychological distress engaged in more emotion-focused coping 8–11 years after baseline, which contributed to a higher prevalence of mental disorders at 17–19 years. This finding is consistent with research showing that community-dwelling older adults who were more likely to engage in emotion-focused coping strategies such as venting of emotion and self-blame reported experiencing greater levels of anxiety (Orgeta & Orrell, 2014). Additionally, caregivers of loved ones with Alzheimer's disease who reported greater distress and negative affectivity used greater emotion-focused coping strategies and less problem-focused coping strategies (Butt et al., 2002). Similar to the current study, Rettie and Daniels (2021) found that emotion-focused coping partially mediated the association between intolerance of uncertainty and higher anxiety and depression among adults living in the United Kingdom during the COVID-19 pandemic. Additionally, in a sample of nearly 8,000 college students in China, Ye and colleagues (2020) found that emotion-focused coping partially mediated the association between stress experiences and acute stress disorder. Although these studies were cross-sectional in nature, results of the present study are aligned with and advance prior research by showing a longitudinal association of psychological distress with subsequent mental disorders via the use of emotion-focused coping strategies.

Table 2. Bivariate correlations among study variables ($N = 2,333$).

	1	2	3	4	5	6	7	8	9	10
1. Age	—									
2. Sex	-.02	—								
3. Race	.00	-.00	—							
4. Education	-.15***	-.10***	.01	—						
5. Employment status	.55***	.03	-.01	-.14***	—					
6. Marital status	-.13***	-.18***	-.07**	.06**	-.04*	—				
7. Psychological distress	-.11***	.08***	.04	-.07**	-.04	-.13***	—			
8. Emotion focused coping	.03	.22***	.05*	-.19***	.06**	-.10***	.32***	—		
9. Problem focused coping	.05*	.04*	.04	.11***	.02	.00	-.16**	-.26***	—	
10. W1 mental disorders	-.02	.13***	-.02	-.03	.02	-.13***	.47***	.18***	-.04*	—
11. W3 mental disorders	-.03	.15***	-.02	-.07**	.03	-.08***	.28***	.20***	-.09***	.28***

* $p < .05$; ** $p < .01$; *** $p < .001$.

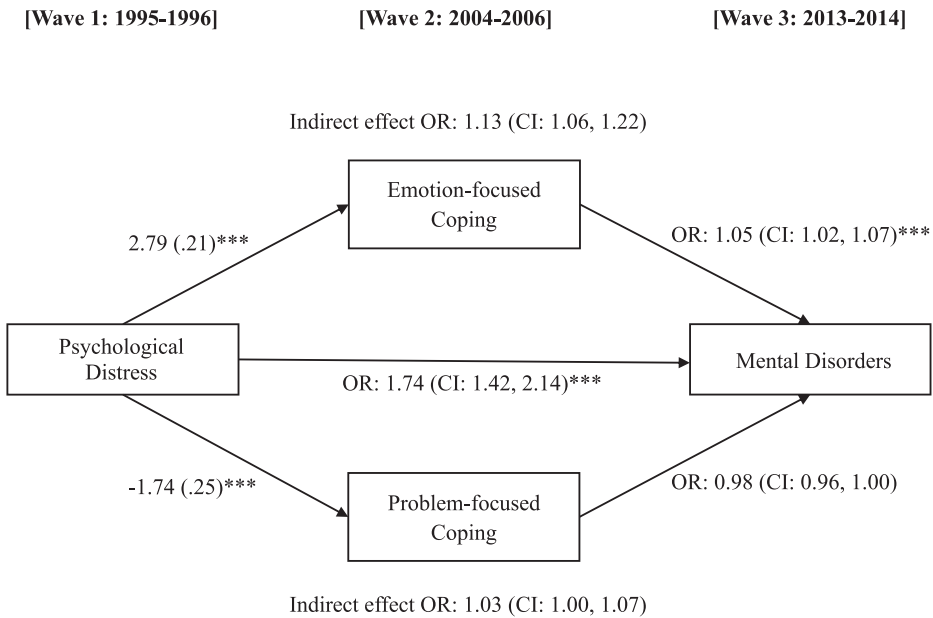


Figure 1. Results from the hypothesized model testing with odds ratio (OR) and unstandardized coefficients (standard errors). Mental disorders at Wave 1 and demographic variables at Wave 3 were included in the model as covariates. *** $p < .001$.

The percentage of reported problem-focused coping strategies used by study participants was higher than emotion-focused coping strategies in the present study, however, problem-focused coping did not mediate the association between psychological distress and mental disorders. Findings from the literature are mixed. For example, problem-focused coping did not mediate the association between intolerance of uncertainty and anxiety and depression among adults in the United Kingdom during the COVID-19 pandemic (Rettie & Daniels, 2021). However, problem-focused coping strategies did significantly mediate the association between stress and acute stress disorder in the college student sample (Ye et al., 2020), although it was difficult to infer temporality regarding the association of coping with mental disorders given the cross-sectional study design (Finkelstein-Fox & Park, 2019).

Although conventional wisdom posits that problem-focused coping strategies are inherently beneficial over other strategies, the goodness of fit model underscores the importance of considering the compatibility between individuals' coping strategies and the unique demands of the stressors. The model emphasizes the importance of a choice in coping strategies when responding to the demands of a stressful situation. There are not inherently effective or ineffective coping strategies in this regard. When there is a good fit between a chosen coping strategy in response to a given stressor, individuals are more likely to experience positive outcomes including reduced mental disorders. Conversely, a poor fit can result in increased psychological distress. Indeed, the transactional model of stress and coping posits that problem-focused coping is most effective when stressors are changeable and perceived control over the stressor is high (Lazarus & Folkman, 1984). In fact, problem-focused coping is associated with heightened anxiety and depressive symptoms when the stressor is uncontrollable (Roubinov et al., 2015). These findings highlight the importance of considering the specific context and types of stressors and employing a flexible coping approach when faced with stressful circumstances.

More recently, coping theorists have suggested a shift in focus to a utility of coping strategies within a given context (Skinner et al., 2003) and towards promoting resilience across various stressful contexts (Finkelstein-Fox & Park, 2019). The extent to which individuals have an

appropriate evaluation of the context, flexibility in adjusting coping strategies during the regulation process, and a diverse repertoire of coping strategies to choose from are important to take into consideration when determining the impact of coping strategies on psychological distress and mental disorders. From this perspective, individuals possess the capacity to employ different coping strategies depending on the specific type and severity of the stressors, referred to as regulatory flexibility (Bonanno & Burton, 2013).

Limitations and future directions

Though the current study contributes to the growing body of literature on psychological distress and mental disorders, the findings should be interpreted considering several limitations. First, mental disorders were dichotomized as a combined construct in the present study, and the severity of each condition could not be considered separately. It is difficult to discern which mental disorder was more affected by psychological distress and how emotion-focused coping and problem-focused coping strategies influenced each mental disorder separately. Second, mental disorders were self-reported which might not be clinically accurate and have limited reliability and validity due to presentation bias, social desirability, desire for economic gain, and recall bias. Furthermore, there is a conceptual overlap between psychological distress and mental disorders and to some extent, the present study can be seen as a test-retest reliability examination. It is also possible that shared methods variance and the presence of neuroticism may have contributed to an overestimation of the association between psychological distress and mental disorders, which often occurs when measurements are assessed through self-reports in stress and health research (Watson & Pennebaker, 1989). Future research should consider the potential impact of neuroticism as a confounding factor when conducting stress-health research. Third, the present study investigated the prevalence, not the development, of mental disorders. Therefore, the causal association between psychological distress and mental disorders could not be ascertained. Nevertheless, baseline mental disorders were controlled for, and the temporal precedence of study variables provides convincing evidence for the study results. Fourth, individuals' psychological distress and use of coping strategies may change over time and across different situations. Recent research recognizes coping as a dynamic, multifaceted process, and it is unclear how such changes would influence symptoms of mental disorders in later life. Future research should examine distress and flexibility in coping and their associations with the development of mental disorders (Finkelstein-Fox & Park, 2019). Finally, the sample in the present study cannot be generalized to the broader U.S. population as the number of racial and ethnic minority participants and those with low socioeconomic status was limited.

Conclusion

The present study contributes to our understanding of mechanisms by which psychological distress influences mental disorders over 17–19 years. The study's findings highlight the deleterious influence of psychological distress on the prevalence of mental disorders and suggest that reducing the use of emotion-focused coping strategies may be effective in preventing and decreasing the prevalence of mental disorders among middle-aged and older adults. Future studies should investigate whether the association between psychological distress and mental disorders depends on different types of stressors to which individuals are exposed, as well as other potential modifiable mediators and/or moderators (e.g., perceived control, a sense of mastery, social support) and social determinants of mental health such as educational opportunities, safe and affordable housing, food security, and access to health care that may account for the association between psychological distress and mental disorders (Sederer, 2016).

Disclosure statement

No potential conflict of interest was reported by the author(s).

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