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Coping with family stress in individuals at clinical high-risk for psychosis

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ABSTRACT

Background: Despite the long-emphasized role of the family environment in the schizophrenia literature, coping with family stress has been neglected in research on the psychosis risk period.
Methods: The sample consisted of 75 youth at clinical high-risk (CHR) for psychosis and 79 matched healthy controls who reported on their use of engagement and disengagement coping strategies in response to stress with parents and perceived social support (i.e., advice availability, family support and strain). Participants were also assessed for clinical symptoms.
Results: Individuals at CHR reported similar levels of engagement strategies (e.g., emotion regulation, positive thinking) and more frequent use of disengagement strategies (e.g., avoidance, denial) compared to healthy controls. In individuals at CHR (as well as healthy controls), greater use of engagement strategies predicted greater perceptions of availability of advice support, whereas greater employment of disengagement strategies predicted lower perceived social support from the family and greater family strain. In individuals at CHR (as well as healthy controls), engagement strategies were not linked to any clinical outcomes, whereas disengagement strategies were closely tied to anxiety and depression (but not psychosis symptoms in individuals at CHR).
Conclusions: Individuals at CHR appeared to engage the same amount as controls, but disengage more often when coping with family stress; this pattern was linked to perceptions of social support and tied to a putative family environment as well as clinical phenomenology. The findings have implications for targeting interventions for CHR populations during a vulnerable period for stress and social change.

1. Introduction

From a diathesis-stress model perspective, stress within the family environment has been indicated to contribute to the development and maintenance of symptoms in psychotic disorders such as schizophrenia (Hooley and Gotlib, 2000). Increasingly, work has sought to understand ways in which individuals with psychosis cope with stress and there is evidence pointing towards the use of two discrete strategies: (1) engagement (e.g., problem solving) and (2) disengagement (e.g., avoidance). Effective coping strategies to reduce stress have been found to be linked to aspects of overall quality of life with research suggesting links with increased social support and decreased symptomatology among psychosis spectrum groups (e.g., anxiety/depression; (Jackson et al., 2004; Robustelli et al., 2017; Schmidt et al., 2014). However, to date, work determining strategies used to cope with family environmental stress, and particularly, stress from parents among individuals considered at clinical high-risk (CHR) for developing psychosis is limited. As a result, the current study sought to (1) examine differences in coping strategies in dealing with stress with parents between CHR and control individuals; (2) determine the link between coping strategies and social support in individuals at CHR; and (3) and test links between coping strategies and clinical symptoms in individuals at CHR.

There is increasing evidence suggesting that individuals characterized by psychosis use a distinct suite of coping strategies in response to stress (Phillips et al., 2009). Compared to healthy controls, individuals with schizophrenia rely heavily on disengagement strategies that seek to avoid the stressor or one's reaction to the stressor (e.g. wishful thinking, avoidance, and denial; (Boschi et al., 2000; MacDonald et al., 1998; Nielsen and Knardahl, 2014; Phillips et al., 2009). At the same time, these individuals are less likely to use engagement strategies, such as problem solving, emotion regulation, acceptance, distraction, and cognitive restructuring (MacDonald et al., 1998; Nielsen and Knardahl, 2014; Phillips et al., 2009). Similar patterns of general coping use have been found in individuals at CHR (Jalbrzikowski et al., 2014). Of the studies assessing engagement coping in groups at CHR specifically, self-report studies show less use of engagement strategies like problem-focused and cognitive coping when compared to healthy controls (Lee et al., 2011; Pruessner et al., 2011). These data suggest that early on in this critical risk period, individuals at CHR rely more heavily

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on disengagement strategies when dealing with stress. However, these studies focus on general coping strategy use, rather than specific strategies when dealing with family stress.

Coping strategies have repeatedly emerged as critical predictors of clinical symptoms in both nonclinical populations (e.g. Aldao et al., 2010) and among individuals at CHR. In individuals at CHR, more frequent use of engagement strategies, such as problem solving predicted less severe negative symptoms, depression, and anxiety (Lee et al., 2011). Similarly, use of multiple strategies, including cognitive reappraisal predicted fewer negative symptoms in individuals at CHR (Jalbrzikowski et al., 2014). Conversely, in individuals at CHR, use of disengagement strategies appears to be associated with poor outcomes (Jalbrzikowski et al., 2014) and a similar picture emerges in adults with schizophrenia (Cooke et al., 2007; Horan and Blanchard, 2003; Horan et al., 2007; van den Bosch and Rombouts, 1997). General use of disengagement strategies predicted more positive and negative psychosis symptoms (Jalbrzikowski et al., 2014). More specifically, wishful thinking when used in response to a stressful event predicted more negative symptoms, depression, and anxiety in individuals at CHR (Lee et al., 2011). Additionally, use of avoidance coping predicted increased distress in individuals at CHR (Phillips et al., 2012).

Social support is an important predictor of clinical course among individuals with psychosis (Norman et al., 2005) and at CHR (Pruessner et al., 2011; Robustelli et al., 2017) and populations at CHR often experience a decline in social network size and support. This drop occurs particularly in regard to close friends (Robustelli et al., 2017), see also (Gayer-Anderson and Morgan, 2013; Sündermann et al., 2014). As a result, parents increasingly become the main source of social contact and support for individuals at CHR (Robustelli et al., 2017). Compounding the high reliance on parents, both individuals at CHR and their parents report encountering frequent strain when communicating with each other (Otero et al., 2011). This difficulty in communication may hamper development during a time period already fraught with complex negotiations for more control and autonomy within the parent-youth relationship (Pavlova et al., 2011; Steinberg and Silverberg, 1986). Given that studies show a reliable link between parental aspects of the family environment and psychosis symptoms (Butzlaff and Hooley, 1998; Schlosser et al., 2010), it is important to understand the role of different coping strategies used during a normatively high-stress developmental period within the youth-parent relationship in light of the additional stressors unique to CHR relationships.

In the present investigation, we sought to further existing work on the role of the family environment by focusing specifically on the ways that individuals cope with stress with their parents as one of the most significant stressors in their family environment. The current study examined individuals at CHR and healthy controls to determine differences in coping strategies (i.e., engagement and disengagement) in reaction to family stressors as well as their relationship to social support and clinical symptoms. The following predictions were tested: (1) individuals at CHR would use engagement strategies less often and disengagement strategies more often than healthy controls when coping with stress from parents; (2) the use of engagement coping strategies would be associated with greater social support and lower family strain in individuals at CHR; and (3) elevated use of disengagement strategies like avoidance and wishful thinking would predict more negative symptoms as well as anxiety and depression in individuals at CHR. Follow-up analyses probed whether associations between coping strategies and social support and clinical symptoms generalized across individuals at CHR and healthy controls.

2. Materials and methods

2.1. Participants

At total of 154 participants, consisting of 75 individuals at CHR and 79 healthy controls matched for age (age: $M = 18.42$, $SD = 2.24$) were recruited to the Adolescent Development and Preventive Treatment (ADAPT) research program using internet, newspaper, and public transportation advertisements, email postings, and community professional referrals. Individuals at CHR in the present study met SIPS criteria for a psychosis risk syndrome, defined by at least one of the following criteria: 1) moderate to severe but not psychotic levels of positive symptoms (rated from 3 to 5 on a six-point scale), 2) a decline in global functioning accompanying the presence of schizotypal personality disorder, 3) a family history (i.e., first-degree relative) of psychosis (Miller et al., 2003). Family history of psychosis was attained by asking participants if any first-degree family members had been diagnosed with a psychotic disorder. In most cases, family history was corroborated with another family member of the participant. Participants with a first-degree relative with a psychotic disorder, but without moderate to severe positive symptoms could still qualify if they experienced an accompanying drop in function. Note that for long-standing symptoms, there must have been an increase in SIPS symptoms in the recent year. Exclusion criteria for individuals at CHR included head injury, presence of a neurological disorder, lifetime substance dependence as well as the presence or lifetime history of an Axis I psychotic disorder at baseline. Healthy controls were recruited from the community via email, newspaper advertisements, and Craigslist. Exclusion criteria for healthy controls included head injury, presence of a neurological disorder, lifetime substance dependence as well as the presence of a psychotic disorder in a first-degree relative or any Axis I disorder. Healthy controls were matched on age. See Table 1 for demographic information.

2.2. Measures

2.2.1. Clinical symptoms

The Structured Interview for Psychosis-Risk Syndromes (SIPS) was administered to diagnose a psychosis risk syndrome (McGlashan et al., 2010; Miller et al., 2003). Clinical symptoms were then assessed on four dimensions, including (1) positive symptoms, (2) negative symptoms, (3) depression, and (4) anxiety. Positive and negative symptoms were assessed by expert raters trained to reliability standards ($\alpha > 0.80$) using the SIPS. A total sum score for the positive and negative symptom domains were used as an indicator of the respective dimensions of symptomatology.

Depression and anxiety were assessed using the Beck Depression Inventory II (BDI: Beck et al., 1996), and Anxiety Inventory (BAI: Beck et al., 1988). Each inventory sums 21 items to measure depression and anxiety, respectively.

Table 1
Demographics, social support, and clinical symptoms.

	CHR	Control	Total
Demographics			
Age mean (SD)	18.65 (1.77)	18.19 (2.61)	18.42 (2.24)
Biological sex (counts)			
Male	45	34	79
Female	30	45	75
Total	75	79	106
Parent education (years) mean (SD)	15.80 (2.30)	15.68 (2.81)	15.74 (2.56)
Social support			
Advice support mean (SD)	3.03 (.67)	3.58 (.48)	3.31 (.64)
Family support mean (SD)	3.03 (.73)	2.60 (.51)	3.32 (.69)
Family strain mean (SD)	2.48 (.66)	2.02 (.78)	2.25 (.76)
Clinical symptoms			
Positive symptom total (SD)	12.03 (4.51)	0.59 (1.30)	6.16 (6.60)
Negative symptom total (SD)	10.25 (7.15)	0.42 (0.96)	5.21 (7.04)
Anxiety mean (SD)	18.55 (11.19)	4.99 (6.03)	11.54 (11.18)
Depression mean (SD)	17.67 (11.69)	3.99 (4.88)	10.56 (11.16)

Note: Parental education is the average of mother and father education; positive and negative symptoms were assessed using the structured interview for psychosis-risk syndromes; anxiety and depression were assessed using the Beck Anxiety and Depression Inventories.

2.2.2. Coping with parent stress

A 42-item version of the Responses to Stress Questionnaire (RSQ) was used to measure coping in response to stress with parents (Connor-Smith et al., 2000). Participants completed the questionnaire once while recalling stressful interactions with their fathers and then again while thinking about stressful interactions with their mothers in the last four months. Participants rated the extent to which they used different engagement and disengagement coping strategies on a scale from 0 (not at all) to 3 (a lot). Following Connor-Smith et al. (2000), engagement strategies (alpha: .89 [fathers] and .86 [mothers]) included problem solving (e.g., "I try to think of different ways to change the problem or fix the situation"), emotion regulation (e.g., "I try to keep my feelings under control when I have to, then let them out when they won't make things worse"), positive thinking (e.g., "I tell myself everything will be all right"), cognitive change (e.g., "I think about the things I am learning from the situation"), acceptance (e.g., "I realize that I just have to live with things the way they are"), and distraction (e.g., "I imagine something really fun or exciting happening in my life"). Disengagement strategies (alpha: .83 [fathers] and .85 [mothers]) included avoidance (e.g., "I try to stay away from people and things that make me feel upset or remind me of the problem"), denial (e.g., "I say to myself 'this isn't real'"), and wishful thinking (e.g., "I wish that someone would just come and get me out of this mess"). Each individual coping strategy was measured using three items. Because responses to the mother and father versions were significantly highly correlated at both an item and category level they were combined for final analyses.

2.2.3. Social support

Three measures captured unique aspects of social support within the family, including (1) availability of advice support, (2) family support, and (3) family strain. Perceived availability of advice was captured using the Interpersonal Support Evaluation List-12 measured (Cohen et al., 1985). While the full scale assesses several domains of social support, the present study focused on the appraisal subscale which most closely resembled other support measures in prior CHR (Pruessner et al., 2011) and first episode psychosis (Norman et al., 2005) literature. Across four items, participants rated the extent to which they perceived having a source to go to for advice and guidance on a four-point scale from 1 (definitely false) to 4 (definitely true; alpha: .73; Merz et al., 2014).

The other two aspects of social support (family support and strain), were measured using the Support and Strain scale (Walen and Lachman, 2000). Six items measured the degree to which participants perceived their relationships with their parents to be supportive (e.g. "How much can you rely on your parents for help if you have a serious problem?"). Six additional items assessed the degree to which participants perceived their parent relationships to contain strain (e.g. "How much do your parents let you down when you are counting on them"). All items were rated on a scale from 1 (a lot) to 4 (not at all). All items were recoded so that higher values reflected more support (alpha: .89) or strain (alpha: .87), respectively.

2.3. Data analytic strategy

All variables were assessed for normality and homogeneity of variance. No abnormalities were found for any of the variables in the present study. Group differences were analyzed using independent samples *t*-tests. Associations between coping strategy use and social support and clinical symptoms were assessed among individuals at CHR using Pearson correlations. Follow-up analyses then probed generalizability of these associations across individuals at CHR and healthy controls by examining the whole sample and examining interactions between CHR status (0 = healthy controls, 1 = CHR) and coping strategy use predicting social support, depression, and anxiety outcomes in regression analyses. Due to the restricted range of psychosis symptoms in the control group, psychosis outcomes were examined only in individuals at CHR. Within each set of these correlations, the Benjamini-Hochberg correction procedure was used to control for multiple testing (Benjamini and Hochberg, 1995).

3. Results

3.1. Differences in coping strategies between individuals at CHR and healthy controls

No differences were found between individuals at CHR and healthy controls in engagement strategies, with one exception. For acceptance, individuals at CHR reported higher levels compared healthy controls. Regarding disengagement coping strategies, individuals at CHR reported higher levels of all disengagement strategies (i.e., avoidance, denial, wishful thinking) than healthy controls (see Table 2).

3.2. Associations between coping strategies and social support in individuals at CHR

Engagement strategies (i.e., emotion regulation, positive thinking, and distraction) were associated with higher levels of social support in the form of having someone to get advice from in individuals at CHR (see Table 3). However, acceptance was associated with lower levels of family support and higher levels of family strain. Disengagement strategies (i.e., avoidance, denial, and wishful thinking) were associated with lower levels of social support in the form of lower family support and higher levels of family strain in individuals at CHR (see Table 3). All relationships remained significant after controlling for multiple correlation tests. Follow-up analyses showed that these associations generalized across individuals at CHR and healthy controls, as indicated by nonsignificant interaction effects between CHR status and coping strategy use when predicting social support, *ps* > .05.

3.3. Associations between coping strategies and clinical symptoms in individuals at CHR

None of the engagement coping strategies were significantly associated with any of the clinical symptoms in individuals at CHR. Similarly, none of the disengagement strategies were associated with clinical symptoms of psychosis. However, all disengagement strategies (i.e., avoidance, denial, wishful thinking) were associated with higher levels of anxiety and depression symptoms in individuals at CHR (see Table 4). All relationships remained significant after controlling for multiple correlation tests. Follow-up analyses showed that these associations generalized across individuals at CHR and healthy controls, as indicated by nonsignificant interaction effects between CHR status and coping strategy use when predicting anxiety and depression symptoms, *ps* > .05.

Table 2
Differences in coping strategies between CHR and healthy control individuals.

	CHR *M* (*SD*)	HC *M* (*SD*)	Test statistic	*p* value
Engagement coping				
Problem solving	1.16 (.63)	1.13 (.86)	t (147) = .17	.87
Emotion regulation	1.33 (1.96)	.99 (.76)	t (147) = 1.39	.17
Positive thinking	1.04 (.73)	.99 (.73)	t (147) = .42	.67
Cognitive change	1.27 (.70)	1.27 (.81)	t (147) = −.04	.97
Acceptance	1.45 (.67)	1.17 (.64)	t (147) = 2.65	<.01
Distraction	.92 (.66)	.78 (.72)	t (147) = 1.21	.23
Disengagement coping				
Avoidance	1.18 (.71)	.72 (.68)	t (147) = 4.09	<.001
Denial	.70 (.50)	.46 (.42)	t (147) = 3.08	<.01
Wishful Thinking	.99 (.77)	.49 (.57)	t (147) = 4.54	<.001

Note. CHR = Clinical high risk. HC = Healthy control; coping items are on a scale of 0–3.

Table 3
Associations between coping strategies, social support, and clinical outcomes in individuals at CHR.

	Advice support	Family support	Family strain	Positive symptoms	Negative symptoms	Anxiety	Depression
Engagement coping							
Problem Solving	.08	<.01	.09	.17	.10	.11	.19
Emotion Regulation	.42**	−.11	.01	−.10	−.21	.12	.02
Positive Thinking	.30*	−.06	.11	.02	−.15	.17	.05
Cognitive Change	.24+	−.07	−.04	.04	−.06	.14	.13
Acceptance	.19	−.41**	.28*	−.09	−.07	.15	.12
Distraction	.27*	.14	−.01	−.05	−.14	.12	.03
			Disengagement coping				
Avoidance	.05	−.53***	.29*	−.03	.05	.34**	.34**
Denial	.04	−.24	.18	.08	−.03	.33**	.35**
Wishful Thinking	−.06	−.37**	.34*	−.01	.11	.48***	.49***

Note: Pearson correlations shown.
+ Indicates $p < 1.0$.
* Indicates $p < .05$.
** Indicates $p < .01$.
*** Indicates $p < .001$.

4. Discussion

The present study extended existing literature on coping in adolescents and young adults at CHR (Jalbrzikowski et al., 2014; Lee et al., 2011) by examining strategies that this group uses in the context of stress with parents, and their relationship to social support and clinical symptoms. Overall, compared to healthy controls, individuals at CHR did not differ in their use of most engagement coping strategies (i.e., problem solving, emotion regulation, positive thinking, cognitive change, and distraction), but were more likely to use disengagement strategies (i.e., avoidance, denial, wishful thinking) when coping with stress with parents. Use of engagement strategies were associated with higher perceptions of social support in the form of having a source to go to for advice and guidance. In contrast, use of disengagement strategies was associated with lower perceptions of family support and increased family strain. Moreover, disengagement strategies were associated with symptoms of anxiety and depression.

Overall, these data suggest links to unpacking how normal developmental changes in the relationship with parents in adolescence and young adulthood may create additional stress for individuals at CHR. While conflict with parents is expected during this period developmentally, individuals at CHR face additional challenges, such as: a) increasingly restricted contact to parents (Robustelli et al., 2017) and difficulty in communicating with parents (Otero et al., 2011) as well as b) heightened risk for imminently developing a psychotic disorder (Cannon et al., 2008; Haroun et al., 2005). The present findings show that individuals at CHR use exactly those strategies—disengagement strategies—to cope with family stress that are associated with less social support and greater anxiety and depression, potentially compounding the social stressors and clinical burden these individuals are experiencing. The increased likelihood of experiencing these stressors, combined with less functional ways of coping with this stress may put individuals at CHR at higher risk for general psychopathology.

Table 4
Associations between coping strategies and clinical symptoms in CHR individuals.

	SIPS positive	SIPS negative	BAI	BDI
Engagement coping				
Problem solving	.17	.10	.11	.19
Emotion regulation	−.10	−.21	.12	.02
Positive thinking	.02	−.15	.17	.05
Cognitive change	.04	−.06	.14	.13
Acceptance	−.09	−.07	.15	.12
Disengagement coping				
Avoidance	−.03	.05	.34**	.34**
Denial	.08	−.03	.33**	.35**
Distraction	−.05	−.14	.12	.03
Wishful Thinking	−.01	.11	.48***	.49***

Note: Pearson correlations shown.
** Indicates $p < .01$.
*** Indicates $p < .001$.

Unlike prior literature, individuals at CHR showed no differences in use of engagement strategies when dealing with stress with parents compared to healthy controls (Jalbrzikowski et al., 2014; Kommescher et al., 2017). We speculate that this difference in findings stems from the nature of the stressor. Adolescence and young adulthood are important developmental periods in negotiating need for autonomy from parents, but maintaining closeness and support is highly important as well (Goossens, 2006; Laursen and Collins, 2009). The present findings point towards an area of preserved function among individuals at CHR that may reflect continued motivation and ability to remain engaged with their parents and may prove to be an important resource to utilize in family-oriented treatment approaches.

In contrast, individuals at CHR were considerably more likely to use disengagement strategies (i.e., avoidance, denial, and wishful thinking) compared to healthy controls when coping with stress with parents. These findings extend previous work by Kommescher et al. (2017) who found that individuals at CHR are overall more likely to use disengagement strategies in response to a variety of stressors compared to individuals with multiple-episode psychosis. Given that individuals at CHR showed even greater use of most disengagement strategies than controls in the present study, these findings suggest that individuals at CHR may express a vulnerability in use of disengagement coping strategies even beyond what is common for this developmental period. In other clinical populations, use of disengagement strategies has been linked to inattention and impulsivity (Young, 2005). Individuals at CHR's reliance on disengagement strategies may reflect early social and emotional implications of the cognitive and attention deficits observed in other studies with individuals at CHR (Bora et al., 2014). These data are important to consider given the large body of work indicating the role of family environment on symptomatology (O'Brien et al., 2009; Robustelli et al., 2017; Schlosser et al., 2010; Weiser et al., 2008). Additionally, it is also possible that increased disengagement strategies may be a step towards social withdrawal and isolation, which is commonly seen both in CHR and in psychosis groups (Gayer-Anderson and Morgan, 2013). However, future work, including replication studies, is warranted in order to more fully interpret these results.

The only engagement coping strategy that was found to be elevated among individuals at CHR was acceptance. This finding may seem surprising at first glance, but it is important to note that acceptance has been defined in the coping, emotion, and psychotherapy literatures in a number of different ways (e.g., (Skinner et al., 2003; Spidel et al., 2018; Troy et al., 2018). The acceptance measure used in the present

study comprised items (e.g., "I realize that I just have to live with things the way they are.") that seemed to reflect disengagement rather than engagement coping (Skinner et al., 2003). In this sense, higher levels of acceptance may have represented another facet of disengagement coping among individuals at CHR.

In individuals at CHR, use of several engagement strategies, including emotional regulation, positive thinking, and distraction predicted higher perceptions of having sources of advice support. These findings support work by Kimhy and colleagues (2012) showing that engagement strategies predict increased perceptions of social support. Work in adults has similarly found that engagement strategies like reappraisal are linked to social support by increasing positive mood and the desire to seek and engage in emotion regulation with others, thereby strengthening social relationships (English et al., 2012; Gross and John, 2003). For individuals at CHR, encouraging use of strategies that facilitate engaging with others may be critical in strengthening already vulnerable social support networks at this critical developmental period.

In contrast, reliance on disengagement strategies (specifically avoidance and wishful thinking) were associated with lower perceptions of family support and higher perceptions of family strain for individuals at CHR. These findings support research showing that adolescents who report use of these strategies are more likely to report poorer family functioning (Stern and Zevon, 1990). It is possible that this relationship stems from a reduced willingness to discuss problems with others, thereby preventing close others from being willing or able to support the person in distress (Marroquín, 2011). Notably, we also found a link between acceptance and lower reports of family social support and higher reports of family strain, again, suggesting that this measure acted similar to a disengagement rather than an engagement strategy.

No links were found between the use of engagement strategies and clinical outcomes. Previous literature in individuals at CHR found relationships between engagement strategies and negative symptoms (Jalbrzikowski et al., 2014; Lee et al., 2011). In Jalbrzikowksi, et al. (2014), engagement coping was assessed as a suite of specific strategies while the present study assessed the relationship of each strategy to symptoms. It is possible that the cumulative use of multiple engagement strategies is more directly related to symptoms than the use of any one individual strategy. Phillips et al. (2009) showed that the use of multiple coping strategies, rather than a single strategy was more effective across all situations. Both studies also examined coping towards more general, undefined stressors. Given that individuals at CHR have restricted social support networks, stress with parents may be uniquely perceived as a more uncontrollable stressor. Literature on some engagement strategies like problem solving and reappraisal suggest that while there are benefits of these strategies, these benefits shrink and can even reverse when coping with uncontrollable stressors (Ford and Troy, 2019; Heckhausen et al., 2010). For example, healthy adolescents who used more problem solving specifically reported poorer adjustment, as well as increased symptoms of depression and anxiety when they perceived little control over the situation (Heckhausen et al., 2019). Furthermore, effectiveness of engagement coping strategies has been tied to executive functioning in healthy populations (Hocking et al., 2010), which may be limited in clinical populations such as individuals at CHR (Woodberry et al., 2013). The break between benefits of engagement strategies and improved clinical outcomes suggests an important area for clinical intervention (e.g., family therapy) in targeting perceptions of stress with parents by individuals at CHR.

In contrast, there was a strong positive association between disengagement strategies (i.e., avoidance, denial, and wishful thinking) and depression and anxiety in individuals at CHR. Follow-up analyses showed that these findings, as well as findings regarding links between coping strategy use and social support generalized across individuals at CHR and healthy controls. These findings demonstrate that disengagement coping strategies (i.e., avoidance, denial, wishful thinking) when dealing with stress with parents are broadly maladaptive across normative development and the psychosis-risk period in adolescence and young adulthood, both in terms of their social as well as their clinical correlates. At the same time, the elevated levels of these maladaptive strategies among individuals at CHR point to these as potential risk factors to consider and potentially intervene with in an already vulnerable population.

While there are several strengths to the study such as the novel focus on responses to stress with parents as a targeted chronic stressor for individuals at CHR, as well as assessing across a broad array of separate coping strategies, there are also important limitations to consider. For example, while the sample size is comparable to other studies within the literature (Jalbrzikowski et al., 2014), examining these data with additional participants may be beneficial. The issue of sample size is particularly important when examining questions of moderation as well as mediation. Regarding moderation, there was no evidence of CHR status moderating the link between coping strategies and social or clinical outcomes. Yet, a larger sample size would facilitate exploring whether different coping strategies (e.g., acceptance) may have different correlates (or even meanings) for individuals at CHR. Regarding mediation, identifying the pathways through which coping is associated with clinical outcomes is particularly important for future work in targeting interventions for individuals at CHR when navigating social stressors.

Furthermore, this study only captured a cross-sectional sampling of coping strategy use and social support. As a result, it is unclear whether perceptions of social support may be driving strategy use, or whether coping strategy use promotes better social support. While these data provide preliminary insights as to coping stress strategies, it will be important for future studies to examine longitudinal data in order to test the relationships between coping strategies, social support, and clinical course (e.g., conversion, increased symptomatology). Similarly, reports of family strain and social support only came from one reporting individual, making it difficult to capture the full scale of support that parents and other family members may be providing to individuals at CHR. Future studies would benefit from assessing availability of different types of social support from multiple reporters in order to establish a more complete picture of the family support system. Such reports could be vital in exploring how different family environments (e.g., offering lower vs. higher control opportunities) could impact the adaptiveness of different engagement and disengagement coping strategies (Ford and Troy, 2019; Haase et al., 2013; Heckhausen et al., 2010, 2019).

Taken together, the present findings contribute to our understanding of ways in which individuals at risk for psychosis manage stress, and can inform vulnerability models such as the diathesis-stress conceptualization of the etiology of psychosis. When coping with family stress, individuals at CHR appear to use those strategies (i.e., disengagement strategies) more that are generally linked to poorer social and clinical outcomes.

Contributors

Claire Yee conducted analyses and drafted the manuscript. Tina Gupta was consulted in regards to data analysis and result interpretation. Vijay Mittal and Claudia Haase drafted the manuscript, aided in interpretation and project conceptualization.

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Declaration of competing interest

There are no conflicts of interest.

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