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'Who will I become?': possible selves and depression symptoms in adolescents

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Abstract

Background: Adolescence is an important period for the development of the possible self. It is also a time when depression is prevalent. The cognitive theory of depression proposes that a negative view of the future is a key feature of depression. Targeting these negative thoughts about the future during cognitive behavioural therapy may be helpful in depression. However, little is known about how adolescents envisage their future (i.e. possible) self, or if the content is associated with affect. The aim of this quantitative study is to describe how adolescents describe their 'possible self' and examine the relationship between the valence of the possible self and depression in adolescents.

Method: Adolescents ($n = 584$) aged 13–18 years were recruited via opportunity sampling via their schools and completed measures of depression symptoms (the Mood and Feelings Questionnaire) and the 'possible self' (a variant of the 'I Will Be' task). Possible selves were coded for content and valence.

Results: Despite depression severity, the most common possible selves generated by adolescents were positive and described interpersonal roles. The valence of the possible self was associated with depression severity but only accounted for 3.4% of the variance in severity.

Conclusion: The results support the cognitive model of depression. However, adolescents with elevated symptoms of depression were able to generate positive, possible selves and therefore may remain somewhat 'hopeful' about their future despite clinically significant depression symptoms. Future-oriented treatment approaches such as cognitive behavioural therapy that focus on changing unhelpful negative future thinking may not be appropriate for this population.

Keywords: Adolescents; Cognitive behavioural therapy; Depression; Future thinking; Possible selves

Introduction

Adolescence, the period of transition between childhood and early adulthood, is an important period for the development of what we each hope, expect or fear to become in the future, i.e. our 'possible self' (Markus and Nurius, 1986; Molina *et al.*, 2017; Packard and Conway, 2006). During adolescence the development of cognition and abstract thinking (Bohn and Bernsten, 2013) enables young people to consider more complex and nuanced perceptions of the 'self' in the past, present and – for the first time – the future (Harter, 2012; Nurmi, 1991). However, abstract thinking and other cognitive abilities, especially executive functioning, are disrupted by depression (e.g. Fisk *et al.*, 2019; Holler *et al.*, 2014). For example, adolescents with elevated depression symptoms retrieve fewer specific memories, engaging in more rumination, and experience poorer working memory and verbal fluency compared with healthy adolescents (Fisk *et al.*, 2019).

Therefore, it is plausible that episodes of low mood and depression may interfere with adolescents' ability to conceptualise their 'possible self'. Depression is also associated with negative cognitive biases, characterised by distortions in information processing that are skewed towards negative or pessimistic outcomes. These biases can manifest in negative biases in perception, interpretation and memory, with heightened focus on negative rather than positive information (Disner *et al.*, 2011). In the influential cognitive theory of depression, Beck (1967) proposed that depression is characterised and maintained by pervasive negative thinking about the future, the self and the world. Similarly, the hopelessness theory of depression (Abramson *et al.*, 1989) states that depressed people expect that negative, aversive outcomes will occur in the future.

Depression is a common mental health problem in adolescence, with an estimated prevalence of 2.7–4.8% among 11- to 19-year-olds (NHS Digital, 2018). Depression in adolescents is also a risk factor for self-harm (Patton *et al.*, 2007) and for suicide, which is one of the leading causes of death in girls and boys aged 15–19 years (World Health Organisation, 2014). Adolescent depression may also have long-lasting effects; between 54 and 60% of adolescents with remitted depression experience further depressive episodes within 6 years (Emslie *et al.*, 1997; Kovacs, 1996). Previous studies have also found that, compared with male adolescents (13.6%), female adolescents (36.1%) were more than twice as likely to be diagnosed with depression (e.g. Breslau *et al.*, 2017).

Negative self-evaluation is one of 10 symptoms of depression in adolescents and is experienced by most adolescents with a diagnosis of depression (Goodyer *et al.*, 2017; Orchard *et al.*, 2017). For example, Orchard *et al.* (2017) found that 86% of adolescents diagnosed with depression met criteria for negative self-perception/evaluation, whereas only 35% of those without a diagnosis of depression exhibited this symptom. Other depressive symptoms commonly observed in depressed adolescents included low mood/irritability (100%), suicidal ideation (86%), sleep disturbances (71%), cognitive disturbances (70%), eating disturbances (50%) and anhedonia (50%). Adolescents with elevated symptoms of depression and those with a diagnosis of depression endorse negative descriptions of themselves (Orchard and Reynolds, 2018) and generate more negatively toned self-images than adolescents who are not depressed (Hards *et al.*, 2020).

Thus, given the presence of negative self-evaluation in depression, it is also likely that the 'possible' self will also be negative; this is because the possible self is suggested to be constructed on the content of the current 'self' (Markus and Nurius, 1986). Specifically, the possible self includes potential future versions of an individual and these are shaped by pre-existing self-evaluations, values and beliefs that an individual may hold. In line with the prediction by Beck (1967) that depression is associated with negative views about the self and the future, it would follow that adolescents with depression may construct negative possible selves.

Surprisingly, there has been little examination of the possible self in adolescents with and without depression, specifically how they think about their future, using more qualitative methods. A fuller understanding of the possible self in depression is important given that this disorder may negatively impact the development of future thinking, and because adolescence reflects a period when young people are increasingly vulnerable to depression (Zisook *et al.*, 2007). Roepke and Seligman (2016) also proposed that 'negative prospection' (including an impaired ability to generate and evaluate possible futures and negative thoughts about the future), is the most important variable that causes and then maintains depression. Specifically, they suggested that interventions should aim to address 'faulty prospection' and cognitive behavioural therapists should extend and develop future-oriented treatment strategies. Therefore, future investigation of the possible self in adolescent populations is important and may have implications for treatment.

There is some evidence that adolescents with depression or more severe symptoms of depression have a more globally negative view of the future. For example, Miles *et al.* (2004) demonstrated that adolescents with more severe symptoms of depression generated more negative future events than controls. Hopelessness about the future was associated with depression severity in adolescents (Becker-Weidman *et al.*, 2009) and with a more negative view of the future

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(e.g. Braet *et al.*, 2013; Jacobs and Joseph, 1997). Weeks *et al.* (2017) also reported that depression severity was associated with the perceived likelihood of a negative future. Most research has been cross-sectional in design but Horwitz *et al.* (2017) reported that a lack of positive expectations about the future significantly predicted depression and suicidal behaviour after 2–4 years, in 59 adolescents who had an increased risk of suicide at a baseline assessment. Similarly, Timbremont and Braet (2006) reported that a negative view of the future predicted depression severity at one year in a non-clinical sample of adolescents. Thus, the relationship between depression symptoms and negative views of the future appears to be bi-directional in adolescents.

However, research investigating possible selves in depression has tended to use structured methods to measure 'the self' (Packard and Conway, 2006). This means that more specific or personal possible selves may have been ignored. Thus, it is not clear if adolescents with depression spontaneously generate a negative view of the future or if they endorse such views once these are prompted, e.g. on a questionnaire measure. Open-response methods that enable adolescents to generate their own 'possible self' are therefore required to assess if the observed relationship between negative self and depression reported in previous studies is an artifact of methodology. These open-response methods will provide a more in-depth approach to studying the content of possible selves and allow for nuances of individual variability and diversity within the population of adolescents with depression.

Therefore, the aim of this study is to examine associations between depression symptoms and the possible self in adolescents. To elicit possible selves, a variant of the 'I Will Be' task (Rathbone *et al.*, 2016) will be used. The content of the possible self will be described to address the research question: What are the most generated possible futures by healthy adolescents and those with elevated symptoms of depression? Possible selves that contain self-descriptions that are positive or negative will also be coded to assess the overall valance of the 'possible self' held by each participant. These data will be used to address the research question: Does the valence of 'possible self' (i.e. the ratio of positive to negative possible selves) predict depression symptoms in adolescents?

Method

Participants

Adolescents ($n = 1168$) aged 13–18 years from two publicly funded secondary schools in Wiltshire, UK, were invited to participate in the study. Consent was obtained from 681 adolescents (58.3% response rate). Following the removal of missing data, the final sample was 584 adolescents (50% of those invited to take part). The mean age of participants was 14.79 ($SD = 1.44$); 52.4% were female and 87.1% were of White British ethnicity. This study was cross-sectional in design and recruited community samples.

Materials

Depression severity

This was assessed by the Mood and Feelings Questionnaire (MFQ; Costello and Angold, 1988). This is a 33-item self-report questionnaire of adolescent depression. Statements are rated on a 3-point Likert scale from 0 (not true) to 2 (true). Higher MFQ scores reflect more severe depression symptoms (Goodyer *et al.*, 2017; Wood *et al.*, 1995). The MFQ has high internal consistency ($\alpha = .94$) among adolescents (Wood *et al.*, 1995).

Possible self

This was elicited using a variant of the 'I Will Be' task (Rathbone *et al.*, 2016). The measure was adapted for adolescents on the basis of consultation with a group of adolescents who were part of a research advisory group. They were asked to read the 'I Will Be' task and invited to provide

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feedback. This resulted in the stem being changed to 'In the future I will . . .' rather than 'I will be . . .'. This gave adolescents more scope to include things they felt were important to them in addition to active roles that they might occupy (e.g. 'In the future I will achieve my goals'; 'In the future I will attain pure happiness'). Also, based on feedback from adolescents, the maximum number of responses was also extended from 8 to 20, as they felt it allowed them more scope. Explicit instructions were also altered. Examples of statements that could be included were removed, and the instructions were simplified with the assistance of adolescents. Instructions were as follows: '*We are interested in how you imagine yourself in the future. Please write down as many ways as you can think of, that describes where you see yourself in the future. These statements should not describe yourself now. Each statement begins with "In the future I will . . . ". Write statements in the order they come to you*'.

Procedure

Head teachers were sent information describing the study and permission was requested to conduct the study within the schools. After receiving approval, information sheets were distributed to all adolescents within the target age group and their parents, describing the study and its aims. Parental consent was required for adolescents under 16 years and was obtained via an opt-out method. Parents were asked to contact researchers via telephone/text, email or written forms returned to school, if they did not want their child to take part in the research. All adolescents under 16 provided assent and all those aged over 16 provided consent. A specific risk procedure was agreed with the headteacher for instances when self-harm or other risk were detected which followed existing safeguarding and child protection guidelines.

All adolescents completed measures as a class (n approximately 30) during timetabled tutorial time or Personal, Social, Health and Education (PSHE) in the presence of a researcher. The MFQ was completed first followed by the 'I Will Be' task. Adolescents who did not want to take part, or whose parents had not given consent were given an alternative activity. All adolescents who took part in the study were entered into a prize draw. Ten adolescents per school had the chance to win a £10 Amazon voucher.

Data coding

Content of possible selves

To examine the content of possible selves, responses were coded using a novel coding scheme. Responses which included concepts that were mentioned by at least two participants were coded as a category. Single statements (i.e. that could not be coded into a category) were excluded from this analysis (n = 5.8%). Coding was carried out by two researchers, the third and fourth authors (T.-C.H. and G.J.) independently and inter-rater reliability was assessed at each phase of data coding. Disagreements were discussed and resolved by the first author (E.H.).

The initial phase of data coding involved grouping statements together that had the same content. For example, the category 'have a dog' included statements such as 'have a dog' and 'get many dogs'. In total, 248 categories were originally identified: 132 categories were identified by T.-C.H. and 116 categories were identified by G.J. The result of inter-rater reliability based on McHugh (2012) showed the level of agreement was good (78.6% agreement, κ = .78). Next, categories that had the same meaning were collated. For example, the category 'Have a pet' was created and included similar themed statements such as 'have a dog', 'have a cat' and 'have a pet'. This resulted in a total of 165 categories and again inter-reliability was good (84.8% agreement, κ = .84).

Valence of possible self

The valence of each participant's possible selves was calculated using the same method as Hards *et al.* (2020). Two independent researchers (E.H. and S.R.) blind to MFQ scores, coded each

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Table 1. Example possible selves and self-images coded by valence

	Possible selves 'In the future I will . . . '
Positive	'be successful'
	'be always happy'
	'have fun'
	'enjoy life'
	'be great'
Neutral	'do things'
	'talk more'
	'get involved more'
	'still have the same personality'
	'no idea'
Negative	'be tetchy'
	'have a worry lifestyle'
	'not be useful'
	'get confused'
	'procrastinate'

self-image as either positive (e.g. 'In the future I will improve'), neutral (e.g. 'In the future I will be loud'), or negative (e.g. 'In the future I will fail'; see Table 1). Only possible selves that were explicitly valenced were included in this analysis. Other possible selves (20.2%), such as ones that described future occupations were removed (e.g. 'I will be a police officer').

Inter-rater reliability was good (86.6%, $\kappa = .76$). Two researchers coded a random sample of 10% of the data independently, blinded to depression score, age and gender. The proportion of positive, neutral and negative possible selves was calculated for each participant. Examples of possible selves categorised described as 'positive', 'negative' or 'neutral' are displayed in Table 1. The future valence index (FVI) was then computed, i.e. the difference between the proportion of positive and negative possible selves, plus one (so all values would be positive) was computed. Thus, an overall score of 2 related to fully positive possible selves, 1 denoted neutral possible selves, and 0 denoted fully negative possible selves.

Results

Content of possible self: all data

All data ($n = 584$ adolescents; 52.4% female; mean age $= 14.79$, $SD = 1.44$) were included in these analyses. Adolescents were classified into one of three groups according to their depression severity, namely 'low', 'moderate' and 'elevated'. An MFQ score of 27 was used to identify adolescents with elevated symptoms of depression (Wood *et al.*, 1995); Twenty per cent of adolescents (27.5% females, 12.9% males) scored above this threshold. A score of 12 on the MFQ was used to identify adolescents with low symptoms of depression. This cut-off was used as this was the lowest recorded MFQ score of an adolescent with a depression diagnosis in the IMPACT trial (Goodyer *et al.*, 2011); 41.1% of adolescents (30.7% females, 52.5% males). Adolescents (38.4%) with an MFQ score between above 12 or below 27 were classified as having moderate symptoms of depression (41.8% females, 34.5% males).

Table 2 shows the 10 most commonly generated possible selves and these were overwhelmingly positive. The most common possible self that was generated by all adolescents was 'Have a job'. This was followed by the possible self 'Occupations'. The majority (8/10) of the most commonly generated possible selves displayed in Table 2 related to future interpersonal roles, i.e. 'Get married', 'Have a family'. Two of the most generated possible selves related to personal characteristics and traits, i.e. 'Be successful' and 'Be happy'. We also compared gender differences

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Table 2. Proportion of the most common possible selves generated by all adolescents

		All data			
	Descriptor	All	Males (n = 278)	Females (n = 306)	Chi-square
1.	Have a job	35%	34%	35%	χ^2 (1) = .08
2.	Occupations	29%	30%	29%	χ^2 (1) = .04
3.	Be happy	27%	21%	32%	χ^2 (1) = 10.45*
4.	Have a family	21%	14%	27%	χ^2 (1) = 15.38*
5.	Go to university	19%	14%	24%	χ^2 (1) = 9.26*
6.	Travel	19%	13%	24%	χ^2 (1) = 12.9*
7.	Have a house	18%	21%	15%	χ^2 (1) = 3.37
8.	Be successful	16%	17%	15%	χ^2 (1) = .54
9.	Have children	14%	13%	14%	χ^2 (1) = .14
10.	Get married	14%	12%	15%	χ^2 (1) = .76

*Bonferroni correction applied, adjusted p-value was p = .005.

in the most common possible selves using chi-squared analyses. Females more often described possible selves in relation to 'Travel' (i.e. 'travel the world'), 'Have a family' (i.e. 'have a nice family'), 'Go to university' (i.e. 'attend X university') and 'Be happy' ('have a happy life') than males.

Content of possible self: depression severity

Table 3 shows the most common possible selves generated by adolescents who reported different levels of depression symptoms. There were few between-group differences; for example, 6/10 possible selves (i.e. 'Have a job', 'Be happy', 'Occupations', 'Have a family', 'Have a house', 'Go to uni') were often generated by adolescents in each of the three depression severity groups. However, the possible selves 'Help people' and 'Be independent' were the only two possible selves that were more often generated by the elevated group than by adolescents who reported fewer symptoms of depression.

A difference score was also calculated to identify possible selves more often generated by those with elevated symptoms of depression versus those with the lowest symptoms of depression. The 10 possible selves with the largest difference score are displayed in Table 4. The possible selves 'Try hard' and 'Be myself' were 3.5 times more likely to be generated by adolescents with elevated depression than by those with few symptoms of depression. Adolescents with elevated symptoms of depression also generated significantly fewer possible selves categorised as 'Be rich' than those with low depression symptoms.

FVI as a predictor of depression

A hundred and eighteen adolescents were excluded from the analysis as they did not generate any possible selves that could be coded as either positive or negative (e.g. 'I will go to uni'). Data from 466 adolescents aged 13 to 18 years were used (53.0% females). Their mean age was 14.84 (SD = 1.49). Preliminary analyses were performed to assess any violations of assumptions; MFQ scores were positively skewed and FVI was negatively skewed so bootstrapping was used (Field, 2013). The measure of depression included in the analyses was a continuous total score of depression severity (MFQ). The mean MFQ score was 17.38 (SD = 12.30; range 0–56). Girls (M = 20.54, SD = 12.67) had higher depression symptoms than boys (M = 13.83, SD = 10.85, $t_{463.4}$ = 6.16, p < .001, 95% BCa CI [4.52, 8.83]). Depression symptoms were not associated with age (see Table 2).

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Table 3. Proportion of most common possible selves across each depression group

	Elevated symptoms (MFQ>27) (n = 120)		Low symptoms (MFQ<12) (n = 240)		Moderate symptoms (27>MFQ>12) (n = 224)	
	Descriptor	%	Descriptor	%	Descriptor	%
1.	Have a job	35%	Have a job	1%	Occupations	1%
2.	Be happy	29%	Occupations	0%	Have a job	8%
3.	Occupations	26%	Be happy	8%	Travel	5%
4.	Have a family	22%	Have a family	2%	Be happy	5%
5.	Have a house	16%	Have a house	2%	Go to university	1%
6.	Have children	15%	Go to university	9%	Have a family	8%
7.	Have pets	15%	Be successful	17%	Be successful	8%
8.	Go to university	13%	Travel	17%	Have pets	16%
9.	Help people	13%	Get married	17%	Have a house	15%
10	Be independent	13%	Have children	16%	Get married	12%

Table 4. Differences of descriptors between depression groups

Descriptors	Elevated	Low group	Differences	χ^2
Have pets	15%	7%	8%	5.17
Try hard	10%	3%	7%	8.19*
Be myself	9%	2%	7%	9.45*
Have a house	16%	22%	−6%	1.95
Travel	10%	17%	−7%	3.20
Be rich	2%	9%	−7%	7.23*

*Bonferroni correction applied, adjusted p-value was p = .008.

Table 5. Correlations of the variables included in the analysis (n = 466)

Measure	1	2	3	4
1. Depression scores	—	−.27**	.02	−.16**
2. Gender	—	—	−.08	−.07
3. Age	—	—	—	.02
4. Future valence index (FVI)	—	—	—	—

**p < .001.

The valence of possible self was assessed using the future valence index (FVI). The average FVI score was 1.72 (SD = .50), indicating that on average participants generated positive possible selves. There was no association between age and 'possible self' (see Table 5) and no gender difference (males, M = 1.68, SD = .52; females, M = 1.75, SD = .47, $t_{442.4}$ = 1.58, p = .115, 95% BCa CI [–.02, .16]). There was a small negative correlation between the valance of 'possible self' and depression severity; adolescents who generated more negative possible selves had higher depression symptoms (see Table 5).

A hierarchical multiple regression was computed to examine the contribution of the valence of the possible self in predicting severity of depression symptoms (Table 6). Both depression severity and the FVI were not normally distributed; however, regression was deemed appropriate due to the large sample size. All other assumptions were met.

Gender was entered at step 1 and was a significant predictor of depression symptoms $F_{1,464}$ = 37.25, p < .001. Gender accounted for 7.2% of variance in severity of depression

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Table 6. Hierarchical multiple regression: predictors of depression symptoms

				95% BCa CI for odds ratio	
	ΔR^2	*b* (SE)	β	Lower	Upper
Step 1	.07**				
Constant		27.25 (1.71)		23.83	30.82
Gender (0 = male)		−6.71 (1.10)	−.27**	−8.93	−4.57
Step 2	.03**				
Constant		31.02 (1.90)		26.70	34.87
Gender		−7.05 (1.08)	−.29**	−9.21	−4.93
Future valence index (FVI)		−4.57 (1.09)	−.19**	−7.06	−2.16

** $p < .001$.

symptoms. FVI was entered at step 2. This was significant $F_{1,463} = 17.78$, $p < .001$ and explained an additional 3.4% of the variance in depression symptoms. The final model with all predictors, was significant ($F_{2,463} = 28.19$, $p < .001$), and accounted for 10.9% of the variance in depression severity. Gender and the valence of possible selves were both independent predictors of severity of depression.

Discussion

This is the first study to examine the content of possible selves generated by adolescents and the relationship between the 'possible self' and severity of depression in adolescents with a range of depression symptoms using an open-response measure. This is important because the development of the 'possible self' during adolescence has the potential to impair motivation, disrupt emotion and trigger episodes of depression, and maintain depression (Roepke and Seligman, 2016). Additionally, research has recommended that strategies that focus on improving future outlook in the treatment of depression are important (e.g. Vilhauer *et al.*, 2012; Vilhauer *et al.*, 2013), thus further investigations about how adolescents with elevated symptoms of depression describe their future outlook are needed.

Our results showed that adolescents most often generated positive possible selves. This is consistent with research suggesting that adolescents are positively biased when describing their future (Iovu, 2014). Adolescents also tended to generate interpersonal roles most often. This finding is in line with theory which suggests that the development of abstract thinking enables adolescents to think about their future goals and possibilities (Inhelder and Piaget, 1958; Nurmi, 1991), therefore it is understandable that commonly generated possible selves reflect key, general milestones such as 'getting married' and 'having a family'. Surprisingly there was a high degree of similarity of the most generated possible selves between adolescents with elevated symptoms of depression and those with fewer depression symptoms. All adolescents regardless of their depression symptoms commonly generated predominantly positive possible selves which described future interpersonal roles. Adolescents with elevated depression symptoms also generated more possible selves such as 'Try hard' than those with fewer symptoms. These results are novel and interesting, and suggest that adolescents may remain 'hopeful' about the future despite experiencing clinically significant symptoms of depression.

Our results demonstrated a small, negative association between the severity of depression symptoms and the valence of 'possible self', i.e. adolescents who had a more negative 'possible self' were likely to report more severe symptoms of depression. Adolescents who generated a more negative possible self, reported more symptoms of depression. These findings are consistent with

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the cognitive model of depression (Beck, 1967), i.e. that a negative view of the self and future is observed in depression.

However, the valence of the possible self was not a *strong* predictor of depression symptoms in adolescents. A possible explanation is that because a key developmental task for adolescents is to establish a sense of 'who I am' (Harter, 2012) the evaluation of the 'current' self may be more salient to adolescents than their 'possible self'. Specifically, advances in cognitive development (i.e. the development of abstract thinking; Inhelder and Piaget, 1958) enable young people to construct more complex perceptions of their self in adolescence than in childhood (Harter, 2012). This development allows adolescents to increasingly engage in self-reflection. The development of perspective-taking also allows adolescents to consider how they are perceived by others (Sebastian *et al.*, 2008). Thus, significant development occurs during this time, which permits adolescents to construct an understanding of 'Who am I?' (Erikson, 1968). This is consistent with recent evidence that when adolescents describe their current self-evaluation, a more negative view of the self predicts 32.3% of the variance in depression symptoms (Hards *et al.*, 2020). Thus, it may be the case that adolescents are beginning to imagine their personal future for the first time (Bohn and Bernsten, 2013; Harter, 2012; Nurmi, 1991) and that this continues to develop across adolescence and early adulthood.

There are important methodological differences between the current study and previous research. Whereas previous research used standardised measures of 'the self' and 'the future' such as the Cognitive Triad Inventory (i.e. Jacobs and Joseph, 1997), we used an idiographic and self-generated measure of the 'possible self' (and of the current self). Therefore, it was possible to examine how the content of possible selves may differ in respect to depression severity. The use of a self-generated method may be more sensitive as it enabled adolescents to describe their own personal possible selves. However, this task relies on each adolescent drawing on their memory and requires both motivation and working memory. This relies on executive functioning skills which are impaired in adolescents with more severe symptoms of depression (Fisk *et al.*, 2019). Thus, adolescents with more severe depression symptoms may have struggled to self-generate responses on both tasks. It is also possible that the test environment, i.e. in a classroom full of their peers and in front of a researcher, may influence the types of possible selves generated. It may be that more negative possible selves were inhibited, for example. Online data collection might provide a more neutral context for future data collection.

Limitations

We did not measure the temporal distance of the participant's possible selves, i.e. the time between the self 'now' and the future possible self. This is important because adults with more severe depression symptoms judge possible futures that are distant as more positive than near possible futures (Sokol and Serper, 2017). Therefore future research should use fixed-time points (e.g. 'Next year I will . . . '; 'In the next five years I will . . . ') to examine the influence of temporal distance on the valence of adolescent possible selves with respect to depression severity. It is also important to note that this study used a non-clinical sample and a cross-sectional design, therefore it is not possible to make any conclusions about the causal relationship between the valence of the possible self and depression. Future research should recruit adolescents with a diagnosis of depression and use a longitudinal, prospective design to examine whether negative possible selves are associated with clinical depression, and whether these possible selves become more negative over time.

Conclusion

The results of this study may have important implications for the theory and treatment of adolescents with depression. Firstly, they suggest that adolescents with more severe symptoms of

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depression report a negative future possible self, consistent with the cognitive model of depression (Beck, 1967). However, the results of the present study suggest that for adolescents a negative view of the future is not strongly associated with depression. Roepke and Seligman (2016) suggested that treatment for depression should focus on changing unhelpful future thinking, rather than addressing current dysfunctional beliefs about the self. Horwitz *et al.* (2017) suggested that increasing access to positive expectations about the future is also an important clinical intervention for adolescents. However, the results of this study suggest that for adolescents, this type of intervention may not be appropriate as adolescents may remain 'hopeful' about their future despite experiencing clinically significant symptoms of depression. Further research is needed with clinical samples and longitudinal designs to establish this.

Data availability statement. Data are not publicly available due to restrictions such as containing information that could compromise the privacy of research participants.

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Author contributions. **Emily Hards:** Conceptualization (lead), Data curation (equal), Formal analysis (lead), Funding acquisition (lead), Investigation (equal), Methodology (equal), Writing – original draft (lead), Writing – review & editing (lead); **Ting–Chen Hsu:** Formal analysis (supporting), Writing – original draft (supporting); **Gauri Joshi:** Formal analysis (supporting), Writing – original draft (supporting); **Judi Ellis:** Conceptualization (supporting), Formal analysis (supporting), Investigation (supporting), Methodology (supporting), Supervision (supporting), Writing – review & editing (supporting); **Shirley Reynolds:** Conceptualization (supporting), Formal analysis (supporting), Investigation (supporting), Methodology (supporting), Project administration (supporting), Supervision (lead), Writing – original draft (supporting), Writing – review & editing (supporting).

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