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Children's concepts of childhood and adolescent depression

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<u>Abstract</u>

Background: Research on adolescent Mental Health Literacy (MHL) is rapidly increasing, however equivalent research in children is lacking. Exploring children's mental health conceptualisations reveals how their knowledge develops and provides the evidence base for the development of mental health education for younger age groups.

Methods: 105 children aged 8-9 and 11-12 years were interviewed using a vignette methodology structured according to the model of illness representations, exploring: recognition, causes, consequences, timeline and curability of depression. Age, gender and experience differences were explored.

Results: Children were able to identify the existence of a psychological difficulty in a depressed peer, however, they struggled to categorise depression as a mental illness, or to label depression. Children referred to a variety of causal factors, primarily environmental and interpersonal rather than internal biological causes. Children considered depression to be curable within a short period of 1-2 months and anticipated negative outcomes if left untreated. Older children's concepts were more sophisticated than younger children's. Gender and experience were not associated with depression concepts in this age range.

Conclusion: Age trends in children's mental health concepts are evident, in accordance with previous studies. Children from the age of 8-9 years demonstrate detailed concepts of depression. However, mental health educational interventions are needed to target specific gaps and misconceptions in children's understanding.

<u>Key Practitioner Messages:</u>

1. Most 9 to 12 year olds are able to recognise depression as a problem when described in a vignette, however only half relate the problem to mental health and only one fifth label it as depression.

2. Children consider a range of causes for depression and refer to more environmental/external than individual/internal factors.

3. Professionals working with children with depression should consider exploring children's understanding and treatment expectations. Children expect depression to be cured within 1-2 months if treatment is provided, concepts of illness timeline varies with age.

4. Minimal gender and depression experience differences were found. Although further studies are needed, clinicians should be aware that children with experience of depression (personal or in parent or sibling) do not necessarily have more knowledge about depression than their peers with no contact or experience.

5. Children from the age of 9 years have naïve concepts of depression. Universal mental health education is needed to increase children's understanding of mental health difficulties experienced in their age group.

Introduction

Research interest in children's understanding of physical illness is evident in the last forty years, aiming to facilitate communication with health professionals, children's involvement in decision-making and health education (Rushforth, 1999). In comparison, there is far less research on children's concepts of mental illness (Hennessy & Heary, 2009). Recently, studies have examined adolescent mental health literacy (MHL), for example for depression (Burns & Rapee, 2006) or anxiety disorders (Coles & Coleman, 2010). However, researchers highlight the lack of research in younger children (Fox, Buchanan-Barrow & Barrett, 2010; Hennessy, Swords, & Heary, 2008).

Despite the lack of evidence on the mental health concepts of younger children there is an increasing focus on early intervention and prevention for mental health problems through education (e.g. Curriculum for Excellence in Scotland) and health policies (e.g. Mental Health Strategy for Scotland, 2012-2015). The development of educational programmes presupposes an understanding of young people's existing perceptions of mental health difficulties. However, research on what information would be relevant and appropriate to include in mental health education for children is scarce (Hennessy et al., 2008). For mental illness, psychoeducation is a key component of effective psychological treatments, and has been found effective as a sole intervention for adults (Donker et al., 2009) and as part of preventive interventions for children and young people (Horowitz & Gardner, 2006; Merry, 2011). Research evidence can thus inform both preventive and therapeutic interventions on how children view mental illness and what components of mental health education children would benefit from the most. Furthermore, children with mental health problems are more likely to be excluded from their peer group. Research shows that stigma develops from the early years of primary school (Hennessy et al., 2008; Hinshaw, 2005) and therefore anti-stigma interventions should be developed for children under the age of twelve years (Heary et al.,

2017). Research into children's conceptualisations of mental health difficulties is likely to enhance our understanding of how negative attitudes and stigma can develop (Hennessy et al., 2008).

The focus of this study is on children's understanding of depression. Prevalence estimates in preadolescent children vary between less than 1% to 2% (Avenvoli et al., 2008; Polanczyk et al., 2015); however little research on children's understanding of paediatric depression has been conducted to date. While adult (Prins et al., 2008) and adolescent depression concepts (Georgakakou-Koutsonikou & Williams, 2017) have been examined in more depth, there is dearth of research in children's (under 12 years) beliefs (Hennessy et al., 2008; Georgakakou-Koutsonikou & Williams, 2017). Therefore, little is known about how children's mental health concepts develop, and which factors are associated with their understanding.

Hennessy & Heary (2009) conducted the first study with children as young as 8 years, examining developmental differences in children's understanding of causes and sources of help for depression, ADHD and conduct disorder. The study included individual interviews and focus groups, using vignettes and open-ended questions. Children provided a variety of explanations for depression, relating to the family, school, peers and individual factors. Children consider the family and friends as the first sources of help, with mental health professionals being underreported.

The role of demographic variables in children's concepts remains unclear. Research reports developmental differences in children's understanding of mental illness (e.g. Fox et al., 2010); their understanding becomes more sophisticated with age (Wahl, 2002). However, adolescent studies have inconsistently reported gender differences in MHL. Where significant differences are found, female adolescents appear to have "higher" MHL (e.g. Coles et al., 2016). Among children, minimal differences are evident (Georgakakou-Koutsonikou &

Williams, 2017). Finally, the potential role of experience and contact with people with mental health problems is under-examined (Hennessy et al., 2008) although there are indications that experience is associated with more sophisticated views (Georgakakou-Koutsonikou & Williams, 2017).

Theoretical Framework

The aim of this study is to provide a comprehensive account of children's conceptualisations of depression, structured according to the common sense model of illness representations (CSM) (Lau & Hartman, 1983; Leventhal, Meyer, & Nerenz, 1980). The model derives from adult literature and is a conceptual framework within which to examine the experiences of affected populations. However, adopting the CSM as an organisational framework allows for a thorough examination of children's beliefs, organised in five dimensions: identity (label and symptoms of the illness), causes, consequences, curability and timeline to recovery. The framework has been used in previous research examining children's concepts of health and illness (Babooram, Mullan, & Sharpe, 2011; Myant & Williams, 2005; Paterson et al., 1999; Vatne et al., 2015) as well as mental illness (Fox et al., 2010). The framework allows to broaden the focus from the aspects previously examined in the mental health literacy field, to include perceived aetiology, consequences and curability of depression.

The specific questions are:

1. Do children recognise depression in a vignette? What are the main symptoms they recognise for a depressed hypothetical peer?

2. What are children's perceived causes, consequences, curability and timeline to recovery for depression?

3. Are there age differences, gender differences or differences based on experience in children's depression concepts?

Methods

Design

The study followed a mixed-methods cross-sectional design, as it explores both a descriptive account of children's concepts of depression as well as factors related to children's concepts and thus includes both qualitative and quantitative analysis (Tashakkori & Creswell, 2007), adopting a structured individual interview approach using vignettes. The methodology resembles the one used by Hennessy & Heary (2009), and allows an in-depth exploration of children's concepts, while quantifiable data allow group comparisons (Georgakakou-Koutsonikou & Williams, 2017).

Participants

Participants were 105 primary school pupils from two year groups (Primary 4 and Primary 7) from three schools in Midlothian (Scotland), two public (N_1= 41, N_2=12) and a private school (N_3=52) (table 1). The age groups included are considered to correspond to cognitive developmental stages in understanding of health (e.g. Bibace & Walsh, 1980; Siegal & Peterson, 1999; Siegal, 2008), and allow for comparison with previous studies (Hennessy & Heary, 2009).

(insert table one here)

Measures

Vignettes. Vignettes were designed to capture key elements of depression as it is experienced by children of different ages. Three vignettes portray a character of 8, 11 and 14 years, meeting criteria for a major depressive episode, according to DSM-IV (American Psychiatric Association, 2000) and ICD-10 (World Health Organisation, 1992). While the first two vignettes (8 and 11 years) correspond to participants' age groups, the third vignette (14

years) was introduced to portray symptoms of depression that are common in adolescence (e.g. suicidal ideation). Professionals from a Child and Adolescent Mental Health team (N=8) reviewed the vignettes to ensure that they described developmentally relevant symptoms of depression. A fourth control vignette portraying a child of the same age as the participant without depressive symptoms was used to examine whether children are able to separate between clinical depression and common emotional variations. The gender of the characters was counterbalanced between same age depression and control vignettes and between the remaining two vignettes, as gender of the characters has been found to elicit different responses (Swords, Heary & Hennessy, 2011).

Interview Schedule. Each vignette was followed by a fixed sequence of questions. Children were asked "*do you think there is something the matter with X*" (problem recognition) and asked to identify what it is (depression recognition*)*. Children were then asked whether they thought the character had a mental health problem ("*do you think X could have a mental health problem?*") (mental health problem agreement) and in turn given the prompt "*some people would suggest that X might have depression*" and asked whether they agreed (depression label agreement). This procedure allowed examination of whether participants consider the problem to be related to mental health and their agreement with depression label. The questions that followed reflect the remaining four dimensions of the CSM: causes ("*What might be the reason for X's problems*"); consequences ("*What might happen if X doesn't get help*"); curability ("*do you think X can recover*"); and timeline ("*how long do you think it might take to recover*"). Participants were encouraged to provide multiple answers (e.g. *"can you think of anything else?"*) to reach saturation. At the end, participants were asked if they knew somebody or had a personal experience with depression *("do you know someone who has had depression?"* and *"have you ever had depression?"*). Participants were asked to identify the

main symptom ("*what was the hint that there is something the matter with X*") of depression. The questionnaire included additional questions related to help-seeking, which will be presented in a subsequent paper.

Procedure

Children were interviewed individually within the school setting. All four vignettes were read to each participant in a random order, followed by the questions in a set sequence after each vignette (as above). The interviews were recorded using a digital audio recorder and data transcribed for subsequent analysis.

Ethical approval

The study was approved by the University of Edinburgh and the City of Edinburgh Council Research Ethic Committees. Parental and child informed consent were obtained. No incentives were used. No participant withdrew and the average response rate was 66.3% within the participating schools. In total, 13 schools were contacted, of which three responded positively in the invitation (23%).

Coding and Analytic Approach

Content analysis was performed for each coding category, following quantitative content analysis techniques (Krippendorff, 2004) using Dedoose Software (2016). The coding scheme was inductively developed and included the categories, operational definitions and examples of units coded within the category. The coding unit varied from a word to a phrase that described a unified idea. After reading all the interviews, responses were grouped in categories to form the initial coding categories of each dimension. Next, examples of responses indicative of each coding category were identified. Operational definitions were developed to facilitate consistency of coding across responses and between the two raters.

Inter-rater unitisation reliability check was performed between two raters in collaboration. Changes were made accordingly, and recoding of relevant categories was conducted. Specifically, the definition of one causal category was expanded and recoded. Inter-rater reliability on the coding was conducted on 10% of the data, performed by a second blind-rater (Hodson, 1999; Neuendorf, 2002). Cohen's kappa coefficient was 0.84 for causes and 0.94 for consequences. Disagreements were resolved through discussion. Next, quantitative variables were created to examine group differences (age, gender, experience), using IBM SPSS 22 software.

To answer question 1, the first depression vignette presented before the introduction of the prompt was analysed first ("unprompted recognition"), as the prompt could affect recognition in subsequent vignettes; therefore, recognition percentages and percentages in the "depression label agreement" category should be treated with caution. For depression recognition, acceptable responses include "depression", "depressed", "sadness", "feeling low", "mood swings". For the remaining recognition categories (problem recognition, mental health problem recognition and depression label agreement) considering numerous responses that showed uncertainty (e.g. "a little bit", "in the middle") a three-level coding was used including no recognition/disagreement, partial recognition/agreement and full recognition/agreement.

Causes were coded in seven categories: family factors, peer factors, school factors, individual factors, physical health factors, loss and tautological responses. The latter category includes responses where participants used symptoms from the vignette as causes. It should be noted that tautological responses differ between vignettes, as similar but not identical symptoms are presented in each vignette.

Consequences were coded in a scale, with higher scores indicating more negative consequences: positive outcome, symptom persistence, and deterioration of depression. Due

to the predominant frequency of negative outcomes, further content analysis was performed to identify subcategories of negative outcomes.

For timeline, due to the wide range (from ½ hour to 1.5 years) and vagueness (e.g. "*three or four weeks*") of responses, categories were divided according to common responses and categorised in an ordinal variable with seven values.

For curability, a three-level scale was created: not curable, possibly curable and curable, as numerous children showed uncertainty (e.g. "*possibly 'cause it's really serious*").

Children were prompted to give as many answers as possible to reach saturation, where relevant (e.g. causes). Although a single utterance was not coded into more than one category, multiple answers from each participant were coded for each dimension. That is, one participant could provide multiple answers for depression causes, and was prompted to do so to reach saturation. This process allowed us to explore children's concepts in detail, in accordance with the main aim of the study.

Quantitative Analysis. To answer question 2, frequency analysis of coding categories was conducted for each dimension (causes, consequences, curability, timeline). To provide frequencies for questions 1 and 2, responses from the three depression vignettes were combined, thus resulting in a total number of 315 responses, following a previously used methodology (Burns & Rapee, 2006). To answer question 3, each dimension was examined in association with age group, gender and experience. Participants with experience are children that reported that they have had a personal or indirect experience of depression. For recognition, a total score for each participant was calculated, creating a scale from 0 to 3, with higher scores indicating depression was more frequently recognised by the participant. For each causal category, a total score was calculated, thus a scale from 0 to 3 was created, with higher scores indicating that the cause was more frequently endorsed by the participant. The

same process was followed for each separate category of consequences, and independent t-tests were conducted. Where Levene's test was significant, the unequal variances t-test result is reported. For the remaining ordinal categories (consequences scale, curability and timeline), total scores were analysed using the Mann-Whitney test. Effect sizes are calculated using Pearson's correlation coefficient (Field, 2005).

Results

Recognition of Depression

The vast majority of participants were able to recognise that the characters had a problem (problem recognition); however, small numbers of children were able to recognise depression (figure 1). 17% of the participants recognised depression (table 2). Children's recognition was significantly higher in the depression condition than for the control condition (4.7% of participants), p=.011, OR= 3.6. Interestingly, some children did identify a mental health-related problem, however could not specify it. When they did, some children confused depression with anger problems, anxiety problems, phobia, and autism (*"She could have… she could have the same as John, like a little bit of, um, autism"* (girl, 11-12 years, CV), *"Well, I think he could have an anger problem, or ADHD."* (girl, 11-12 years, AV) *"I think she might have anxiety, or she might be depressed."* (girl, 11-12 years, AV), *"Like maybe she has a fear of arachnids or something"* (boy, 8-9 years, CV)).

11-12 year-olds were significantly more likely to recognise depression in unprompted depression recognition than 8-9 year-olds, $\chi^2(1)= 5.917$, p< .05, OR= 5.65. In combined vignette scores, 11-12 year-olds were significantly better at recognising depression (M=.91, SD=.77) than 8-9 year-olds (M=.24, SD=.49), t(103)=4.842, p <.001. No age differences were found in problem recognition, mental health problem recognition or agreement with depression label. No gender or experience differences were found (tables 4 and 5).

(Insert Figure 1 here)

Main Symptom. As symptoms are not identical between vignettes, results are presented separately. For the child vignette (8 years), the most common symptoms children recognised were sleep problems (21% of participants), decline of school performance (20.6% of participants) and sadness (14.4% of participants). For the preadolescent vignette (11 years), children identified low mood (31.7% of participants), falling out with friends (17.3% of participants) and losing interest in hobbies (13.5% of participants). For the adolescent vignette (14 years), main symptoms were suicidal thoughts (40.6% of participants), feelings of worthlessness (15.8% of participants) and sadness (13.9% of participants).

Children's perceived causes of depression

Peer relationships constitute the most frequently reported cause (45.2% of participants), referring to bullying, disputes with friends, loneliness and the devaluing behaviour of peers. Family factors were common (37.2% of participants), especially in 11-12 year-olds. Most common parental factors were parental divorce and parental disputes. Less common were: "negative" parenting (unsupportive parents, physical neglect and physical abuse), Arguments between parent and child and being unloved by parents. Individual factors included explanations that reflect the character's internal state, personality or temperament. The category includes worrying, preoccupation with negative thoughts and references to low self-esteem. 32.4% of children referred to individual factors. Physiological factors (16.3% of participants) include fatigue, sleep difficulties, eating problems, physical illness/injury and puberty. Inheritance and explanations related to brain functions were very rare. 16.7% of participants refer to school factors, included exam stress, stress for school workload, school performance and achievement, transition to Secondary/High School, and negative relationships

with teaching staff. Finally, 9.9% of children referred to loss of a loved one. Tautological responses were reported by 22.4% of participants. Quotes are presented in table 2.

(insert table 2 here)

The mean number of causes suggested for individual vignettes was 1.56 (SD=.59). 11-12 year-olds provided a greater number of causes for depression (M=1.67, SD=.60) than 8-9 year-olds (M=1.32, SD=.49), t(85)= 2.719, p<.01. 11-12 year-olds (M=1.34, SD=.87) reported family factors more often than 8-9 year-olds (M=.70, SD=.88), t(100)=3.535, p<.001. Conversely, 8-9 year-olds (M=.95, SD=.78) used tautological explanations more than 11-12 year-olds (M=.52, SD=.73), t(100)=2.741, p<.01. Boys (M=1.18, SD= .94) scored significantly higher than girls in the individual causal category (M=.79, SD=.70), t(90.117)= 2.382, p<.05. Participants who reported an experience with depression had significantly lower scores in family causes (M=.71, SD=.85) than those without an experience (M=1.21, SD=.92), t(100)=2.239, p<.05.

Perceived Consequences of Depression

Children from both age groups refer primarily to negative consequences of depression, only 1.7% of participants refer to spontaneous recovery. Negative consequences were further analysed, forming seven categories. Emotional consequences (29.5% of participants) include deterioration of sadness, increased worry, anger and loneliness. Social impact (14.6% of participants) involves disputes with friends, being bullied, losing friends and purposefully withdrawing from the peer group. School consequences (13.7% of participants) refer to decline of school performance, school refusal or absenteeism. Behavioural consequences (11.1% of participants) involve disengaging from activities and sports, changes in appetite and sleep. Long-term consequences (adult life) (9.2% of participants) include negative career

prospects, being a bad parent or person, having financial difficulties and not achieving in life. Self-harm (9.2% of participants) includes self-harming behaviour/thoughts and suicidal ideation/ attempts. Finally, cognitive consequences were reported by 6% of participants, including negative thinking and self-beliefs. Quotes are presented in Table 3.

11-12 year-olds scored significantly higher in the consequences scale (M=8.56, SD=.84) than 8-9 year-olds (M=7.88, SD=1.45), U=274, z= -2.038, p<.05, indicating that they consider more negative consequences of untreated depression. 11-12 year-olds (M=.45, SD=.72) considered self-harming behaviour as a consequence more often than 8-9 year-olds (M=.05, SD= .23), t(86.150)=4.127, p<.001. There were minimal gender differences and no experience differences.

(insert table 3 here)

Perceived Curability of Depression

87.2% of children consider depression to be a curable condition, 10.8% of participants as possibly curable and 2% of participants as not curable. No age, gender or experience differences were found.

Perceived Timeline to Recovery

On the timeline scale, the median and mode was 4, referring to a period between one and two months. 3.1% of children view depression to be curable in up to a day, 12.3% of children in a few days, 17.5% of children in a couple of weeks, 34.2% of children in a couple of months, 20.9 % of children in a few months, 5.5% of children in a year, 4.5% of children in more than a year and 2% of participants did not provide an answer. 11-12 year-olds reported significantly longer times needed to recover (M=11.54, SD= 3.61) than 8-9 year-olds (M=9.29, SD=3.89), U=872, z=-2.686, p <.01. Participants with an experience scored significantly lower in perceived timeline to recovery (Mdn=10, M= 8.96, SD= 4.44) than participants with no

experience (Mdn=11, M=11.22, SD= 3.54), U=685. z=2.008, which indicates that participants with an experience of depression expect a shorter recovery period. Age, gender and experience differences and effect sizes are presented in tables 4 and 5.

(insert tables 4 & 5 here)

Discussion

The primary aim of this study was to examine children's concepts of depression, organised according to the CSM. Children provided comprehensive accounts of their depression concepts.

Children are capable of recognising that a vignette character is experiencing difficulties and to differentiate between clinical and control vignettes. However, they do not spontaneously label depression or recognise the mental health nature of difficulties. This finding highlights that children do not lack the capacity to recognise the existence of a problem; rather, their concepts are not yet able to differentiate mental health-related problems. In previous research, adolescent girls were able to list symptoms of depression, however had difficulty to connect symptoms to a mental illness requiring intervention (Pinto-Foltz, Hines-Martin, & Logsdon, 2010). Similarly, Secker et al. (1999) report similar findings from their qualitative study on young people's understanding of mental illness. Secker et al. (1999) report that participants did not classify depression as a mental illness, as they did with other mental illness (e.g. schizophrenia). The authors interpret this finding as a result of personal or indirect experience. As participants were able to relate to some extent with symptoms through experience of normative mood changes or contact with people with depression, depressive symptoms were classified as normal behaviour or as an extension of normality. Conversely,

symptoms which were judged as inexplicable and "abnormal" were considered as mental illness.

Moreover, it is not possible to determine what children actually mean when they identify someone as having depression (Burns & Rapee, 2006), as their use of the term does not necessary correspond to the clinical term used by professionals. This is evident in this study where half of the participants do not consider that the character is having a mental health problem; it is possible that children use the term depression to refer to the emotional state, rather than a disorder. Thus, it is important to ensure a shared meaning between public and professionals. In clinical practice with children as well as in mental health education, defining the terms for mental health problems that are commonly used in everyday language to describe emotional states (e.g. depression, anxiety) would facilitate shared understanding.

Children referred primarily to environmental and relational causes for depression. This finding echoes previous qualitative (Hetherington & Stoppard, 2002) and quantitative research in adolescent populations (Essau et al., 2013). The finding that older children are more likely to attribute depression to family factors is in line with Maas, Marecek and Travers (1978) who report that children are more likely to endorse social/environmental factors with age. Non-significant age differences in other causal categories are in accordance with Hennessy & Heary (2009) who found no age differences in the endorsement of internal and external causes of depression.

Children expect depression to be cured within 1-2 months, which is partly in line with previous research (Fox et al., 2010). In adolescent studies, participants choose a longer period between 1-6 months (Georgakakou-Koutsonikou & Williams, 2017). This is an important finding for both mental health education and clinical practice; even though this short expected recovery time might reflect developmental differences in time perception (Chelonis et al.,

2004; Droit-Volet & Zélanti, 2013), exploring children's duration-related expectations and fostering realistic expectations is important.

Children expect deterioration of emotional symptoms of untreated depression. The fact that small numbers of children refer to self-harm indicates again the lack of knowledge and unfamiliarity with risk. Only 40% identified suicidal thoughts as a symptom of depression, which is a much smaller percentage than in adolescents (Byrne, Swords, & Nixon, 2015). This difference is likely linked to the fact that self-harming behaviours are more evident in adolescence (Hawton, Saunders & O'Connor, 2012) and as such adolescent samples are more likely to be knowledgeable or have contact with people who engage in self-harming behaviours.

This study shows that even from the age of 8 years children demonstrate detailed conceptions of depression. Expanding on Hennessy & Heary's (2009) argument, children are able to speculate not only on causes, but also consequences and prognosis. Using the CSM is a promising framework to expand our understanding of children's views. This study reveals that children do not define depression similar to adults or clinicians and the CSM facilitates a greater understanding of how children conceptualise depression. Correct labelling does not imply that children understand depression as an illness (Burns & Rapee, 2006). The CSM includes a range of illness dimensions in addition to identity. For example, children's perceived consequences in of depression in adult life are likely to be based on a conception of depression as a long-term chronic condition, while very short timelines (e.g. one hour) are more likely to be associated with an understanding of depression as a temporary emotional state.

Age trends are evident in all dimensions, apart from curability, possibly due to a ceiling effect. 11-12 year-olds are more likely to recognise depression and attribute it to a larger number of causes, in line with the development of children's understanding of the multitude

of causes for physical illness (Perrin & Gerrity, 1981). 11-12 year-olds suggest longer recovery periods and more negative consequences, including risk behaviours. Older children's conceptualisations aligned more closely with clinical conceptualisations, in line with Fox et al. (2010), who suggest that at the end of middle childhood mental illness becomes a separate construct and is no longer conceptualised in the same way as physical illness. The findings are also in line with research on physical health concepts, where age predicts more sophisticated concepts of illness (Burbach & Peterson, 1986).

In this study, minimal gender differences were found. This contrasts with adolescent studies that report gender differences in mental health literacy (e.g. Burns & Rapee, 2006; Coles et al., 2016). It is possible that gender differences develop in adolescence, thus the interaction of age and gender with a combined child and adolescent sample should be examined in future studies. Similarly, minimal experience differences were found. The finding that children with an experience expect a shorter timeline to recovery was unexpected. In children's physical health concepts, there is no consensus on the role of experience. While some studies show that children with experience have a better understanding of illness, others show the opposite results (Burbach & Peterson, 1986). In a study examining children's asthma concepts using the CSM (Paterson, Moss-Morris, & Butler, 1999) experience predicted better understanding of some of the examined dimensions. If experience and gender are not associated with depression concepts in this age group, universal mental health literacy interventions would be appropriate for all children (e.g. children of depressed parents, depressed children and general population). In turn, clinicians working with children with experience (personal or in parent or other family member) of depression should be aware that this experience does not necessarily lead to a more comprehensive understanding of depression than that found in their inexperienced peers, highlighting the need for psychoeducation about depression.

Strengths, Limitations and Future Research

This is the first study to provide a detailed account of children's understanding of depression, adopting a methodology that has been used in research with adolescent populations and in children's physical health concepts. However, limitations should be discussed in light of future research directions.

The hypothetical nature of responses in vignette methodologies has been highlighted systematically (Burns & Rapee, 2006; Hughes & Huby, 2002) and as such it is unknown whether children's concepts would equal personal beliefs if experiencing depression. Similarly, triangulating children's self-reported experience with parent report of the child's experience would be beneficial, as in this study it was uncertain what children defined as having an experience with depression.

The use of three depression vignettes facilitated the inclusion of symptoms that are relevant in different age groups (e.g. suicidality in adolescence). However, due to the study design, differences between vignettes would be difficult to interpret. For example, it is unclear whether higher recognition of the adolescent vignette as depressed was due to the description of suicidal thoughts or whether children are more likely to consider an adolescent as depressed. Studies have suggested that the gender of the character might differentiate results (Dolphin & Hennessy, 2014), the age of the vignette character would be an interesting next step. Similarly, comparison between vignettes describing different mental illnesses prevalent in this age group might inform our understanding of how children's conceptualisations develop. For example, Swords et al. (2011) found that only older adolescents (16 years) could differentiate between the help needed for depression and ADHD, while younger adolescents (12 and 14 years) did not distinguish between the two conditions.

In relation to recognition of depression, the range of accepted responses for correct recognition might have resulted in over-estimation of correct recognition. Finally, cultural and ethnic differences were not examined in this study. Adult research indicates cultural and ethnic differences in mental health conceptualisations (Furnham & Hamid, 2014; Anglin et al., 2008). No research examining ethnic or cultural differences in children's conceptualisations of depression was identified. This would be an interesting research focus for future studies.

Conclusion

Children are able to identify emotional difficulties displayed by hypothetical peers and consider possible causes, consequences, and prognosis of depression. Older children have more comprehensive depression concepts, in terms of recognising depression, suggesting longer recovery periods, expecting more negative outcomes if untreated and being more aware of potential risk. However, differences between children's and adult or professionals' conceptualisations of depression are evident. In clinical practice, it is important to take into consideration children's beliefs and to target misconceptions. The findings of this study provide an initial detailed account of children's depression conceptualisations and highlight areas where mental health education should focus upon.

access to the data and takes responsibility for the integrity of the data and the accuracy of the data analysis.

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Table 1

Participant Demographics

	8-9 years N (%)	11-12 years N (%)	Total N (%)
Gender			
Male	18(17.1%)	34(32.4%)	52(49.5%)
Female	20(19.0%)	33(31.4%)	53(50.5%)
Total	38(36.1%)	67(63.8 %)	105(100%)
Experience			
None	26(24.8%)	56(53.3%)	82(78.1%)
Indirect	5(4.8%)	8(7.6%)	13(12.4%)
Direct	2(1.9%)	2(1.9%)	4(3.8%)
Both	5(4.8%)	1(1%)	6(5.7%)
Age (M, SD)	8.86(.32)	11.84(.32)	10.76(1.47)

Table 2

Quotes of Causal Categories

Type of Cause	Quotes (Gender, Age group, Vignette)
Family factors	*"His mum and dad argued"* (Girl, 8-9 years, AV) *"Maybe his parents aren't treating him right, or aren't supporting him"* (Girl, 11-12 years, CV)
Peer factors	*"Maybe his friends are being a bit mean to him".* (Girl, 8-9 years, PV) *"Maybe she's feeling quite lonely 'cause she got no friends"* (Boy, 11-12 years, CV)
School factors	*"She didn't feel happy, because she's not doing that well in school"* (Boy, 11-12 years, AV) *"Probably worrying about next year because in year 7 usually it's the end, then you're going to senior school"* (Boy, 8-9 years, PV)
Individual factors	*"She doesn't trust in herself, she doesn't think she can do things. She doesn't think that, like, people love her and acknowledge her."* (Boy, 11-12 years, AV) *"Um, maybe, she just has low self-esteem"* (Boy, 11-12 years, CV) *"Um, he thinks he's not like that good at stuff, he doesn't really like himself for that"* (Boy, 8-9 years, PV)
Physical factors	*"He's not got a lot of sleep"* (Boy, 8-9 years, PV) *"I think he might have an illness or something, or an ache"* (Girl, 11-12 years, CV)
Loss	*"I think maybe someone's died in her family, and she's getting all sad about it"* (Girl, 8-9 years, CV) *"Probably something bad, like losing a family member"* (Boy, 11-12 years, AV)

Note. CV= Child Vignette, PV= Preadolescent Vignette, AV= Adolescent Vignette

Table 3

Quotes of Negative Consequences of Untreated Depression

Type of Consequence	Quote (Gender, Age group, Vignette)
School	*"She might, um, get really depressed, and maybe not even go to school"* (Girl, 8-9 years, AV) *"I think his schoolwork would probably get lower and lower"* (Girl, 11-12 years, CV)
Adult life	*"Might end up having a very poor job or be homeless"* (Boy, 8-9 years, MV) *"He might not get into any university or college"* (Boy, 11-12 years, AV)
Suicidality	*"He might decide that he wants to kill himself one day"* (Girl, 8-9 years, AV) *"She could attempt suicide"* (Boy, 11-12 years, PV)
Emotional	*"He might get too angry … And he'll just feel sad and worried"* (Boy, 8-9 years, PV) *"She's not like, showing her feelings and she'll just keep it into herself, like, keep hurting her and stuff"* (Girl, 11-12 years, AV)
Behavioural	*"She might start like pushing people around"* (Boy, 8-9 years, CV) *"It might get even more and he could start hitting people if he gets too angry"* (Girl, 11-12 years, AV)
Negative Thinking	*"She'll probably just keep thinking that she doesn't matter"* (Girl, 8-9 years, AV) *"Thinking that she's not as good as other people and then just get worse and worse"* (Boy, 11-12 years, PV)
Social impact	*"She'll probably not have friends anymore"* (Girl, 8-9 years, MV) *"She might not be able to get friends in high school"* (Boy, 11-12 years, CV)

Note. CV= Child Vignette, PV= Preadolescent Vignette, AV= Adolescent Vignette

Table 4

Age Differences in Children's Depression Concepts

	8-9 years M (SD)	11-12 years M (SD)	U/ t, p value	OR/ r
Recognition				
Problem	5.76(.54)	5.75(.64)	U=1206,z=.307	r=.03
MH problem	2.00(1.70)	2.30(1.46)	U=676,z=.945	r=.09
Label Agreement	3.19(1.91)	3.71(1.81)	U=325.5,z=.985[a]	r=.13
Total Depression	.24(.49)	.91(.77)	t(103)=4.842***	r=.43
Unprompted Depression (n,%)	2 (5.3%)	16 (23.9%)	$\chi^2(1)$= 5.917*[b]	OR=5.7
Causes				
Number of Causes	1.32(.49)	1.67(.60)	t(85)=2.719**	r=.28
Family factors	.70(.88)	1.34(.87)	t(100)=3.535***	r=.33
Peer factors	1.35(.92)	1.35(.93)	t(100)=.013	r=.01
School factors	.51(.90)	.49(.75)	t(100)=.127	r=.01
Individual factors	.81(.78)	1.08(.87)	t(100)=1.541	r=.15
Physical health	.49(.61)	.51(.66)	t(100)=.160	r=.02
Loss/ bereavement	.19(.40)	.37(.60)	t(97.692)=1.817	r=.16
Tautology	.95(.78)	.52(.73)	t(100)=2.741**	r=.26
Consequences				
Total Scale	7.88(1.45)	8.56(.84)	U=274, z= 2.038*[a]	r=.26
School	.59 (.80)	.47 (.79)	t(60)=0.54	.07
Adult	.35 (.61)	.27 (.54)	t(60)=0.54	.07
Self-Harm	.06 (.24)	.58 (.78)	t(58.764)=3.97***	.33
Emotional	1.24 (.97)	.93 (.86)	t(60)= 1.19	.15
Behavioural	.29 (.59)	.44 (.59)	t(60)= 0.90	.12
Cognitive	.29 (.47)	.20 (.46)	t(60)= 0.72	.09
Social	.41 (.51)	.51 (.63)	t(60)= 0.56	.07
Curability	5.34(1.02)	5.18(1.29)	U=1216, z=-0.434[a]	r=.04
Timeline to recovery	9.29(3.89)	11.54(3.61)	U=872, z=-2.686**[a]	r=.26

Note. * p<.05, two-tailed. ** p<.01, two-tailed. *** p<.001, two-tailed. [a] Mann Whitney (U) test performed as categories are ordinal scales. [b] Chi-square performed as category is binary. MH= Mental Health.

Table 5

*Gender and Experience Differences in Children's Depression Concepts*

	Gender				Experience			
	Boys M (SD)	Girls M (SD)	U/ t, p value	OR/ r	No M (SD)	Yes M (SD)	U/ t, p value	OR/ r
Recognition								
Problem	5.79(.57)	5.73(.64)	U=1252,z=.756	r=.07	5.76(.60)	5.74(.62)	U=907.5,z=.153[a]	r=.02
MH problem	2.00(1.56)	2.31(1.60)	U=694,z=.831,ns	r=.08	2.13(1.59)	2.28(1.53)	U=525,z=.286[a]	r=.03
Label agreement	3.37(1.89)	3.45(1.89)	U=377,z=.242,ns	r=.03	3.15(1.90)	4.13(1.64)	U=209,z=1.853[a]	r=.25
Total Depression	.65(.71)	.68(.80)	t(103)=.171,ns	r=.02	.73(.75)	.43(.73)	t(103)=1.681	r=.16
Unprompted Depression (n,%)	10 (19.2%)	8 (15.1%)	$\chi^2(1)$=.316, ns	OR=.75	16(19.5%)	2(8.7%)	p=.349 [b]	OR=.39
Causes								
Number of Causes	1.59(.65)	1.53(.53)	t(85)=.445, ns	r=.05	4.37(1.87)	4.13(1.71)	t(85)=.685	r=.07
Family factors	1.12(.92)	1.10(.93)	t(100)=.130	r=.01	1.21(.92)	.71(.85)	t(100)=2.239*	r=.22
Peer factors	1.26(.96)	1.44(.87)	t(100)=1.002	r=.10	1.36(.91)	1.33(.97)	t(100)=.109	r=.01
School factors	.50(.86)	.50(.75)	t(100)=0	r=.0	.44(.74)	.71(1.01)	t(100)=1.374	r=.14
Individual factors	1.18(.94)	.79(.70)	t(90.117)=2.382*	r=.23	.99(.84)	.95(.86)	t(100)=.170	r=.02
Physical health	.48(.61)	.52(.67)	t(100)=.308,ns	r=.03	.56(.65)	.29(.56)	t(35.394)=1.898	r=.17
Loss/ bereavement	.30(.58)	.31(.51)	t(100)=.071,ns	r=.01	.31(.29)	.29(.56)	t(100)=.172	r=.02
Tautology	.64(.78)	.71.(.78)	t(100)=.466,ns	r=.05	.68(.83)	.67(.48)	t(100)=.065	r=.01
Consequences								
Total Scale	8.29(1.20)	8.43(.98)	U=448.5, z=.406,ns	r=.05	8.48(1.01)	7.92(1.24)	U=223,z=1.633[a]	r=.21
School	.59 (.89)	.43 (.70)	t(60) = .81, ns	.11	.46 (.73)	.67 (.99)	t(60) = .82, ns	.11
Adult	.33 (.62)	.26 (.51)	t(60) = .53, ns	.07	.32 (.59)	.17 (.39)	t(60) = .86, ns	.11
Self-Harm	.67 (.88)	.26 (.51)	t(39.068) = 2.17*	.29	.42 (.70)	.50 (.80)	t(60) = .35, ns	.05
Emotional	.74 (.76)	1.23 (.94)	t(60) = 2.19*	.27	.96 (.88)	1.25 (.97)	t(60) = 1.01, ns	.13
Behavioural	.44 (.58)	.37 (.60)	t(60) = .48, ns	.06	.40 (.57)	.42 (.67)	t(60) = .09, ns	.01
Cognitive	.22 (.42)	.23 (.49)	t(60) = .05, ns	.01	.22 (.47)	.25 (.45)	t(60) = .20, ns	.03

Social	.52 (.64)	.46 (.56)	$t(60) = .4$, ns	.05	.48 (.61)	.50 (.52)	$t(60) = .10$, ns	.01
Curability	5.02(1.43)	5.45(.87)	U=1189, z=1.384, ns	r=.14	5.23(1.10)	5.26(1.54)	U=825.5,z=1.040[a]	r=.10
Timeline	10.46(4.24)	10.98(3.45)	U=1293,z=-.547, ns	r=.05	11.22(3.54)	8.96(4.44)	U=685,z=2.008*[a]	r=.20

Note. * p<.05, two-tailed. ** p<.01, two-tailed. *** p<.001, two-tailed. [a] Mann Whitney (U) test performed as categories are ordinal scales. [b] Fisher's Exact test

Figure 1

Recognition percentages by age group
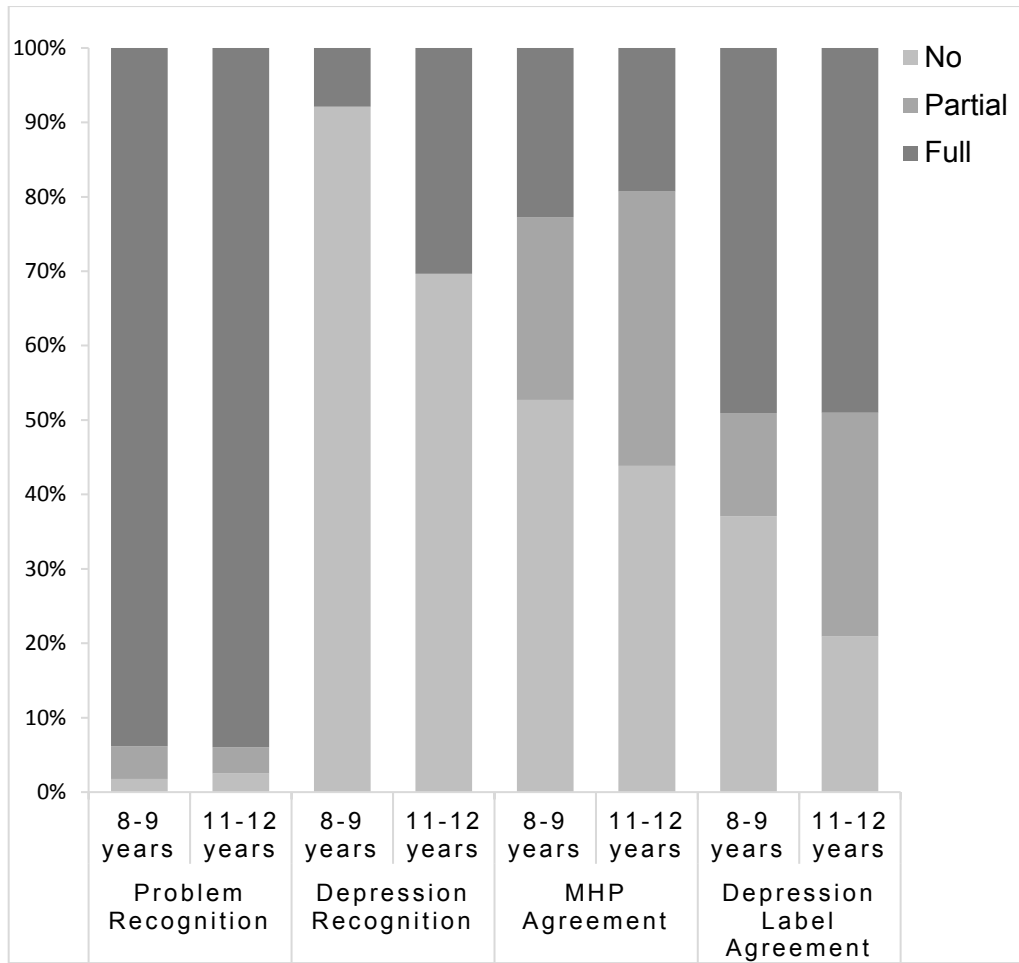
Note. MHP=Mental Health Problem. Depression Recognition was a binary category thus "partial recognition" does not apply