Literature Review: The Effectiveness of DNA-V for Children and Young People with Mental Health Difficulties.

Abstract

Many children and young people struggle with their mental health. With the long waiting lists and cost constraints that the NHS and CAMHS are facing within the current mental health care climate, different programmes and interventions are being implemented to manage these difficulties and provide the best care for children and young people struggling. Currently, the main gold standard intervention for children and young people is CBT, however due to the expensive nature and long waits for this treatment other programmes have been considered. For example, DNA-V. This review aims to evaluate the literature about DNA-V and its effectiveness for children and young people with mental health difficulties. This review includes direct research on DNA-V's effectiveness for young people specifically. However, due to the newer nature of the model there is a lack of research on DNA-V used purely for adolescent's mental health. This literature review also includes some research evaluating ACT which is a primary basis for DNA-V, from which it was developed to be suitable for young people. The limited literature did conclude that DNA-V has been found effective at reducing symptom severity and disorder distress in children and young people, specifically with anxiety disorders. The interventions effectiveness is also supported by the literature on ACT, which found that programmes based on these principles are effective at treating young people with a range of mental health difficulties. A main limitation of this review is that there is a large gap in the research about DNA-V's effectiveness in a clinical mental health setting. Much of the research is also surrounding young people with anxiety, limited research was found for other disorders. Future research should be conducted about DNA-V as a programme for young people with mental health difficulties before the effectiveness of the intervention can be confidently concluded.

1.0 Introduction

1.1 Background

Currently the gold standard therapeutic intervention given to children and young people with mental health struggles is Cognitive Behavioural Therapy (CBT) (Freidberg et al., 2021), as supported by the National Institute for Health and Care Excellence (NICE). However, CBT is expensive to run (Taylor et al., 2022; James et al., 2020). With the National Health Service (NHS) and Children and Adolescent Mental Health Service (CAMHS)'s money constraints, running CBT may be a difficulty. CBT as an intervention is not always effective for all young people also, due to a range of factors. For example, it has been found that up to 50% of children with anxiety disorder do not attain remission with CBT (Wang et al., 2017). These points have all led to difference programmes and interventions being tested and implemented to try to access all young people's needs, reduce the waitlists, and be as cost efficient as possible.

DNA-V is a programme that has been developed from Acceptance Commitment Therapy (ACT) and other positive psychological principles (Hayes & Cairrochi, 2015) administered in a group-based setting to support young people with their mental health and tackle some of the previous mental health service struggles. The effectiveness of this programme is what this literature review aims to evaluate through a search of the research.

1.2 Definition of DNA-V

DNA-V refers to 'Discoverer-Noticer-Advisor which builds Values and Vitality'. It is an intervention model built upon Acceptance Commitment Therapy (ACT), positive psychology and contextual behavioural science which aims to help people develop flexible psychological strength and values to deal with challenges and stress (Hayes & Cairrochi, 2015). DNA-V is a group-youth model variation of ACT.

1.3 Theoretical underpinnings of DNA-V

Acceptance Commitment Therapy (ACT) was developed based upon CBT, with a primary aim to reduce psychological inflexibility (Hayes et al., 2011). ACT is mindfulness based, designed to provide skills that enable the individual to handle difficult thoughts and feelings more effectively (Hayes et al., 2011). It is an intervention that has a focus on prosocial behaviour, improving functioning in adolescents (Petersen et al., 2022, cited in Pinar et al., 2024). This is a primary basis of which DNA-V was developed from, developed for use with young people.

DNA-V also has a large influence from positive psychology, which is a psychological approach specifically aiming to emphasise peak functioning in individuals (Hayes & Ciarrochi, 2015). Positive psychology's main focus is functioning and developing skills and strengths within people to develop their best selves (Ciarrochi et al., 2016).

Contextual behavioural science is a more scientific approach that works towards finding solutions to human problems with this framework, which underlies DNA-V (Hayes et al., 2012).

1.4 Scope

A literature review has been conducted, searching multiple different academic databases to analyse the effectiveness of DNA-V programmes for children and young people with mental health difficulties. Due to being a request by the Sussex CAMHS team, the review will examine the effectiveness of DNA-V for young people up to the age of 18 years old.

2.0 Effectiveness of DNA-V in improving mental health outcomes in children and young people

2.1 Literature evaluating DNA-V specifically

There is limited research that has been conducted specifically on the use of DNA-V and its effects on children and young people's mental health. A key piece of research found was by Petersen and Pimentel (2024), who conducted a review of literature that studied the effectiveness of ACT and DNA-V at improving adolescent anxiety. They found that children and young people that received DNA-V overall rated improvements in their anxiety symptomology. One specific study by Petersen and Pimentel, that was highlighted within this review, examined an eight-week group of DNA-V for young people at a community outpatient mental health unit (Petersen & Pimentel [in preparation], cited in Petersen & Pimentel, 2024). They found that all young people rated the treatment as 'helpful' and provided positive feedback. They also found that 50% of the adolescents reported minor improvements in their anxiety symptom severity and increases in their psychological flexibility. This research thus supports the use of DNA-V to effectively be used for treatment of children and young people's anxiety.

Another pivotal study on the effectiveness of DNA-V was by Faulkner et al. (2018). They implemented a school-based form of DNA-V in a physical education class at the young people's school to evaluate the efficacy of the programme in improving adolescent's wellbeing. They directly compared the adolescent's sleep hygiene and physical activity ratings to a control group and found that 70% of the students rated the DNA-V-PE as either 'somewhat useful' or 'very useful'. Physical activity levels also increased within the DNA-V-PE group. However, no improvements were found in sleep hygiene or psychological flexibility. Therefore, DNA-V was found to be an intervention that young people themselves found useful but other aspects did not have an effect. Due to this study being an adapted version of DNA-V in a school setting, though the results can be considered, no decisive conclusion can be determined about how effective DNA-V could be presented in a clinical CAMHS setting.

A large issue within this field is that there is little research directly conducted on the effectiveness DNA-V as an intervention for children and young people's mental health difficulties, primarily due to DNA-V being a relatively newer model. There is however more research on ACT, which is the base that DNA-V was developed from, therefore we could use that to support this review.

2.2 Literature evaluating the use of ACT, to support DNA-V

ACT has a larger evidence base, due to being a wider more researched intervention. Petersen and Pimentel (2024)'s review assessed the literature supporting ACT for adolescents as well as DNA-V and found that it does positively support children and young people with anxiety. A wider range of research has been conducted that supports the efficacy of ACT as a therapy for adolescents with mental health difficulties. Pinar et al. (2024) conducted a meta-analysis of randomised control trials (RCTs). 27 RCTs were analysed, with a combined participant total of 2860 adolescents, and found that ACT was more effective for treating young people with anxiety and depression when compared to those on a waitlist or no-treatment. It was also found that ACT was superior for young people with depression compared to active controls. Though ACT did not outperform CBT, it was found to be a suitable alternative. Therefore, this meta-analysis by Pinar et al. (2024) provides a strong evidence base for the effectiveness of ACT interventions for adolescents with depression and anxiety.

More in-depth support for the effectiveness of ACT on adolescent anxiety was also found by Pires et al. (2023), who conducted a case study on a 17-year-old boy with test anxiety and diagnosed social anxiety disorder. An online ACT-based model called 'acting with acceptance, mindfulness and compassion to cope with test/exam anxiety' (AcAdeMIC) was used. Clinical improvement was found on the boy's test anxiety, which increased by the 3-month follow-up, and the social anxiety symptoms also generally improved despite the programme not directly targeting them. The young person also reported improvements in his shame and self-criticism levels. So, though this study used an online adapted version of ACT, it provides further support for the effectiveness of ACT and ACT theory of treating adolescent mental health difficulties, particularly anxiety.

Literature was also found that supports the effectiveness of ACT interventions on other adolescent mental health difficulties. For example, ACT was found to have an averaged 44% reduction in obsessive compulsive disorder (OCD) compulsions at a three-month follow-up and a 12-61% reduction in OCD overall severity (Armstrong, 2011). ACT was also found to have a reported range of 68-84% reduction in post-traumatic stress disorder (PTSD) symptoms in adolescents (Woidneck, 2013). Thus, ACT has a larger evidence base supporting the effectiveness of the intervention on a range of adolescent mental health difficulties.

This evidence basis for ACT as an intervention, though not directly DNA-V, does help support the research question due to DNA-V being based upon the principles of ACT. However, it should not be the sole evidence proving the effectiveness of DNA-V. It supports the theoretical framework of the programme; however, the implementation design is highly different. Therefore, it must be used in conjunction with research directly on DNA-V before concluding its effectiveness.

3.0 Critical Evaluation of the Literature

3.1 Lack of research in the area

The most predominant limitation within this literature review, and the research area in general, is the lack of literature on the topic. For example, this literature review found only two primary pieces of research on DNA-V specifically regarding children and young people and its effect on mental health difficulties (Faulkner et al., 2018; Petersen & Pimentel, 2024). Out of this, one study was not directly related to the implementation of DNA-V in an NHS CAMHS setting and was a school-based adaptation focusing on physical education and activity. Therefore, not directly applicable.

Of the research that has been included regarding mental health specifically, most of it related to DNA-V or ACT based models on anxiety disorders in young people. There is a severe lack of research surrounding its effectiveness of depression for example.

Research was found on ACT's effect on young people's mental health difficulties to support DNA-V, due to DNA-V being developed from ACT, however this too was limited. Though this helps evaluate the effectiveness of the theoretical basis of DNA-V, it has its limitations. For example, the programmes used in the studies evaluating ACT

had completely different implementation designs that DNA-V. A majority, if not all, were done on an individual base. DNA-V is run as a group programme, as least in CAMHS, thus the effectiveness may completely differ.

3.2 Methodological approaches

One issue is that much of the research is not directly DNA-V. A majority of literature found was on ACT, with some ACT-based. For example, Pires et al. (2023) used AcDeMIC which is an ACT-based online intervention. ACT is the theoretical framework that DNA-V was based on, so literature with it as a focus could provide evidence supporting the effectiveness of the theory. However, it can not be a direct illustration of the effectiveness of DNA-V. Another example is the study by Falkner et al. (2018), where they used an adaption of DNA-V for schools called DNA-V-PE. This model is not a clinical usage of DNA-V, so is not directly applicable to a Sussex CAMHS context. Therefore, a large limitation of this literature review is that a majority of the interventions used within the studies examined are not a direct clinical DNA-V model.

Another methodological limitation is that much of the data collected was self-report data. For example, Faulkner et al. (2018)'s study used self-report measures gathering data on young people's satisfaction, psychological flexibility and their sleep hygiene. Another large example of this is from the meta-analysis on the effectiveness of ACT on depression and anxiety symptomology (Pinar et al., 2024) who directly highlighted the possible biases within their study samples due to self-report measure usage. The issue with self-report data is that the results could lack in validity, due to various biases. Participants may alter their responses based on the study's aim, or other external factors, which could alter how valid the outcomes could be.

A more specific limitation regarding some of the data collection measures is that there is only one child-specific measure for psychological inflexibility, Children's Psychological Flexibility Questionnaire (CPFQ). Psychological flexibility is a big factor within the DNA-V framework. Only having one specific child measure for it limits the breadth of data that can be collected on psychological flexibility from children (Petersen & Pimental, 2024). A limit on the amount of data collected for this, effects the amount of research that can be targeted towards DNA-V's effectiveness for children.

3.2 Samples and participants

The biggest limitation in this field of literature is relating to sample size. The majority of the limited research that exists on DNA-V specifically or ACT more broadly have small participant samples. This presents an issue with generalisability, as the small sizes could mean that the results may not be representative of the wider population. A large range of young people struggle with their mental health, are seen by CAMHS, and are waiting to receive interventions to support them. Small sample groups withing the research may mean that the findings do not reflect this.

Another limitation that should be considered is that fact that none of the research found on DNA-V or ACT was directly conducted within England or the United Kingdom more broadly. Much of the research was from the United States (Faulkner et al., 2018; Armstrong, 2011; Woidneck, 2013), one study was from Portugal (Pires et al., 2023), and some of the multiple study reviews were unclear (Petersen & Pimentel, 2024; Pinar et al., 2024). This could pose an issue, as it could be questioned whether the results found were location specific. It could also pose the question on whether the implementation of DNA-V would be successful at reducing young people's mental health difficulties within an NHS organisation, as none of the research examined reflects this.

4.0 Conclusion

In summary, the literature surrounding this specific research question is small. The recent literature review made prior, by Petersen and Pimentel (2024) did find that DNA-V can be effective for young people struggling with anxiety. Though they also highlighted how little research there is. More broadly it was found that DNA-V can be effective in

increasing physical activity in young people, with many young people rating the programme as useful (Faulkner et al., 2018). The theoretical framework for DNA-V also has a wider range of support, with ACT programmes being found effective for a range of mental health difficulties young people face.

However, there is a large gap within the literature evaluating DNA-V's effectiveness for young people with mental health difficulties in a clinical setting. Of the literature found, it was highly specific to anxiety disorders. The research supporting ACT can also only be used to support DNA-V's effectiveness as a programme cautiously, due to the implementation of it in comparison to DNA-V differs. DNA-V is a group programme at Sussex CAMHS, which much of the ACT research used an individual implementation. This means that a conclusion made on DNA-V's effectiveness in this context cannot be confidently confirmed.

More research needs to be conducted in general on DNA-V and its effectiveness in supporting young people's mental health. Specifically, this future research should be focused on DNA-V used within a clinical mental health treatment setting, like within CAMHS. An effective piece of research would test DNA-V's effectiveness for young people struggling with their mental health, compared directly to a test of CBT's effectiveness as the current leading treatment option. This would provide more solid evidence for the use of DNA-V.

5.0 References

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