

# The Worth Warrior App

A booklet for health professionals from stem4



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# About

Worth Warrior is a free app created for young people to manage negative body image, low self-worth, and related early-stage eating difficulties or disorders. Created for teenage mental health charity stem4 by Dr Krause, a Consultant Clinical Psychologist, in collaboration with young people, the app uses principles from the evidence-based Cognitive Behavioural Therapy for eating disorders (CBT-E).

stem4, developer of Worth Warrior, has involved several clinicians specialising in eating disorders to help with ensuring that the model is clinically relevant. Like all stem4's award-winning apps, it is free, private, anonymous, and safe.

stem4 is a London-based teenage mental health charity creating a portfolio of mental health apps for young people and resources for mental health literacy in secondary schools and colleges.

Dr Nihara Krause is a Consultant Clinical Psychologist with many years of clinical practice and is the clinical creator of the stem4 digital portfolio.

stem4 thanks the National Institute of Health Research (NIHR) for their generous sponsorship of an Invention for Innovation grant that has enabled the development of the Worth Warrior app and this user guide which forms one of three user guides – for Young People, for Parents and Carers and for Healthcare Professionals.

# Contents

# About eating disorders and the psychological model used in the Worth Warrior app



Eating disorders are complex and life-threatening mental illnesses starting in adolescence and early adulthood, when the young person is still developing, causing significant brain and body changes that negatively affect chances of recovery.

Treatment outcomes are significantly worse after an illness duration of three or more years, compared to earlier intervention. Whilst serious, eating disorders respond well to targeted treatment and access to early treatment increases the possibility of a full recovery.

Eating disorders provide some strong indicators for the application of Cognitive Behavioural Therapy (CBT) principles. The first is that low self-esteem or self-worth is seen as a core contributor to eating disorders and this, together with over valuation of weight and shape, is cognitive in nature. The second is that CBT is applied in eating disorders and several evidence-based adaptations of the CBT model have been created including Cognitive Behavioural Therapy for Eating Disorders (CBT-E) by Fairburn et al (2015).

This model focuses primarily on Bulimia Nervosa. Brief Cognitive Therapy for Non-Underweight Eating Disorders (CBT-T) by Waller et al also focuses on the application of a CBT model for the different presentations of eating disorders and body image issues. The NHS Long Term Plan 2019 emphasises critical priorities in the digital transformation of NHS care, and accessibility to eating disorder care is a government priority (2019, 2020, 2021).

Although the government made a commitment to ensure that 95% of under-19s receive treatment, current figures estimate this figure is not being met. FREED (First Episode Rapid Early Intervention for Eating Disorders) was introduced to address this need. It is a service model and care package for 16–25-year-olds, who have had an eating disorder for three years or less and includes Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, or subclinical eating disorders.

This model, also with a CBT focus, is currently being upscaled to 20 sites in the UK. However, demand continues to grow as the number of under-19s waiting for urgent treatment has more than tripled during the pandemic, while the number waiting for routine treatment has increased between Apr-June 2021 (RCPsych 2021).



# About and how to use the Worth Warrior app



*Worth Warrior is a free app to help young people manage low worth and poor body image leading to eating difficulties and disorders\*.*

Created for the teenage mental health charity stem4, the clinically-led app has been co-designed with input from young people and user tested by young people. Patient Public Involvement (PPI) has been included throughout the study. A small pilot study is being carried out until the end of December 2022, looking at pre- and post-use data in a small sample of young people and results will be published in 2023 and included in an updated version of this booklet.

\*Please note, we can create a licensed version for organisations that wish to provide localised information and tailor localised services to meet need (see Chapter 6 for our offer).



## User engagement and providing information about the Worth Warrior app:

Individuals with low self-worth, eating and body-image based difficulties and eating disorders often experience conflict within themselves when they try and change their acceptance of there being a problem or try to change behaviours. As such, they may present as ambivalent of accepting any help.

This can lead to misunderstanding on both sides; for a clinician - a challenge that may seem difficult to overcome, and for the person with an eating disorder - one of feeling unheard or invalidated. If a young person has been asked by an educational establishment or parent/carer to attend an appointment or has waited a while on a waiting list, then it may be even harder to offer help that's taken up effectively or to make a collaborative partnership work.

To ensure that young people engage with using the Worth Warrior app in conjunction with whatever else is being offered, in addition to treatment or as a stand-alone support tool, it's important to ensure that the messaging is helpful and increases motivation for use. The following instructions have been generated using the research data from the National Eating Disorders Collaboration Report ([nedc.com.au](http://nedc.com.au)) on using online resources to help young people with eating disorders (2014). This study defines several 'goals' requested by young people when using online tools.



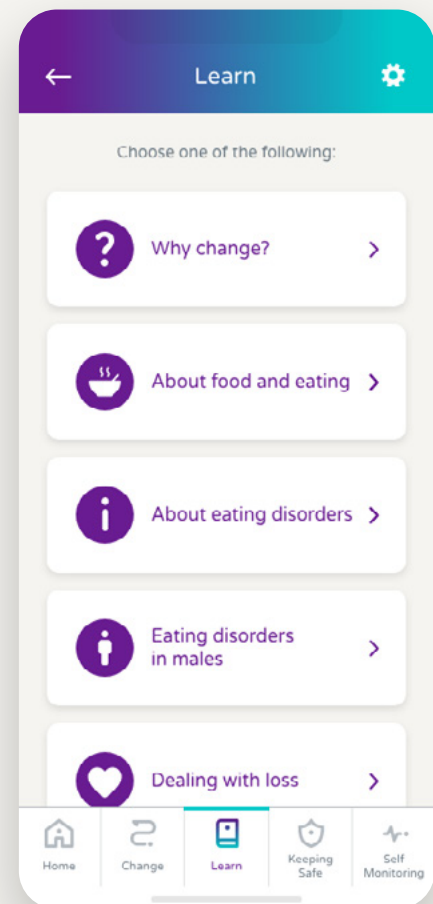
## Goal 1

### *'Help me recognise what's going on for me'*

In addition to providing young people with verbal feedback of their diagnosis, they can be referred to the *'Learn'* section of the app to read about eating disorders together with a range of other informative categories.

It will also be useful to give them some information about the Worth Warrior app. In addition to the user guide that can be downloaded for free on the website ([www.worthwarrior.co.uk](http://www.worthwarrior.co.uk)), you could say the following:

*'The Worth Warrior app is a helpful self-management tool; you can learn to change negative thinking and worries, set goals for change, learn to self-reassure, manage difficult feelings and monitor progress whilst working on keeping things in check.'*



## Goal 2

### *'Help me easily access information that's relevant to me'*

Young people want to access information relevant to them. It will be helpful to let young people who are given the Worth Warrior app know that those aged 16-21 have had input into the app from concept to finish.

In the *'Learn'* section, in addition to information about eating disorders, they can also find out relevant information such as:

- Reflecting on why they should change
- About food and eating
- Physical signs to look out for
- Eating disorders in males
- Dealing with loss
- Dealing with perfectionism
- Social media and eating disorders



### Goal 3

#### *‘Provide me with actionable help’*

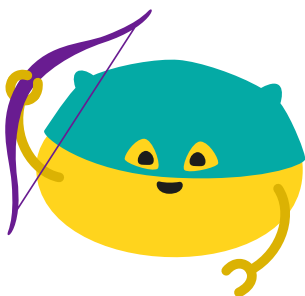
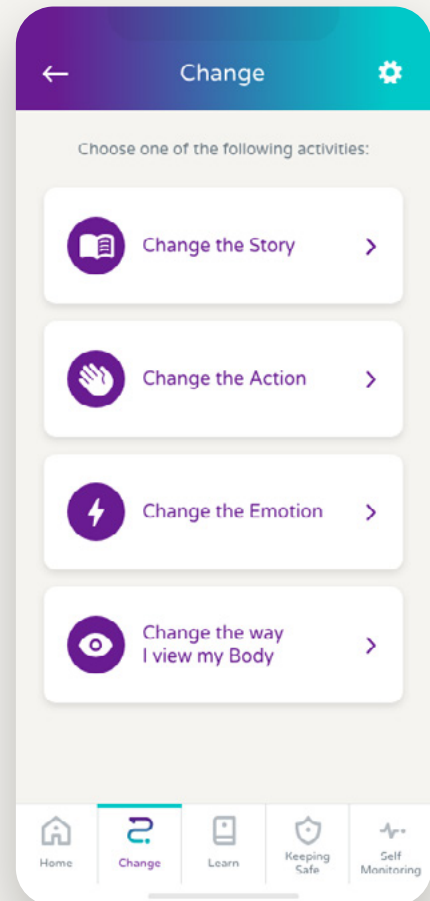
In the National Eating Disorder Collaboration report, ‘young people saw actionable help as the highest priority for online resources’.

Explain to young people that the Worth Warrior app follows an actionable plan that is in accordance with a treatment approach called Cognitive Behavioural Therapy for Eating Disorders (CBT-E). All actions can be found in the *‘Change’* section of the app.

The *‘Change the Story’* section of the app helps identify negative self-thoughts and teaches users how to substitute positive self-thoughts.

*‘Change the Action’* focuses on identifying negative behaviours and altering them.

In *‘Change the Emotion’* users are provided with alternative, self-soothing behaviours to manipulate their eating and in *‘Change the way I view my Body’* users are taught how to separate fact from assumption in terms of body perception.



The archery analogy of the Worth Warrior app is:

*“To hit a target of worth takes practice and courage. Believe you can do it, keep trying and you will get there.”*

Encourage users to practice using the app to help it make change. Support them in listening to the fact that it will be difficult, but that persistence will help.

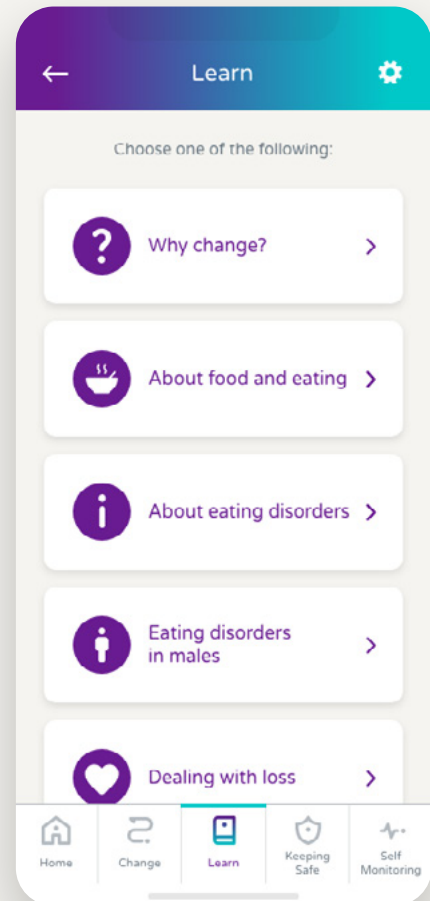
#### Goal 4

##### *'Show me that I'm not alone'*

Although story sharing was seen as valuable in the National Collaboration Eating Disorder Report which outlines the goal above, the Worth Warrior app has chosen not to share stories of individuals with eating disorder issues. This is because many young people tell us that whilst it can be helpful, it can also be triggering.

In addition, the focus of the app is to help build self-worth and to start to focus on individual strengths rather than defining yourself through an eating disorder.

Peer support and helpful family/carer support, however, can be helpful. Please recommend stem4's [Combined Minds app](#) which provides helpful guidelines for families and friends on supporting someone with an eating disorder. Combined Minds uses a Strengths Based Approach and signposting.



#### Goal 5

##### *'Be where I am'*

The Worth Warrior app is free, with no in-app purchases. It doesn't use any data and doesn't need Wi-Fi for use. It is available on an individual's mobile device whenever they need to use it.

#### Goal 6

##### *'Give me the choice to remain anonymous'*

The app is completely anonymous and does not collect any identifiable data. It has embedded analytics which provides stem4 with anonymised information on demographic data and impact.



## Goal 7

### *'Show me I can trust the site'*

The Worth Warrior app is stem4's fifth app.

Our digital app library has around 4 million downloads across the world. We build our apps to clinical safety standards and meet strict NHS standards. The Worth Warrior app uses a known and validated treatment approach.

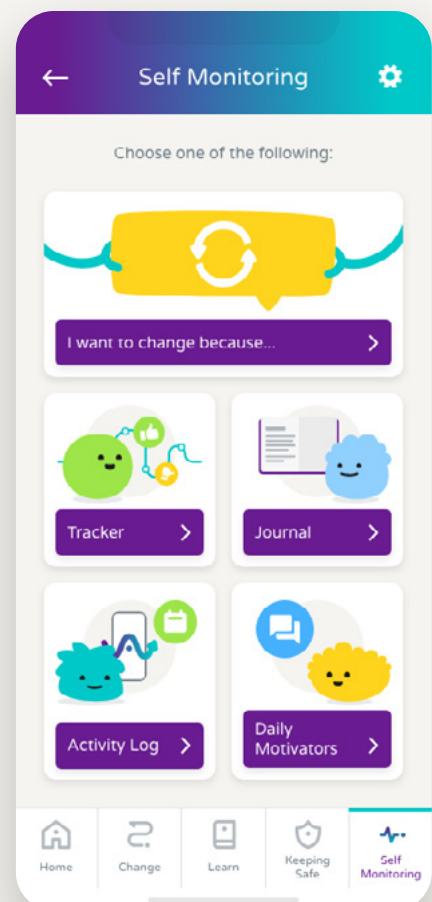
The stem4 apps have been endorsed by many organisations and by a variety of celebrities. The Worth Warrior app has been funded by the National Institute of Health Research (NIHR) which requires that we meet rigorous standards and provide the aforementioned research study indicating evidence of impact.

In addition to the young people generated goals, the app also offers the user the following sections:

The *'Keeping Safe'* section allows users to build a 'safety net' of helpful thoughts, behaviours, people to contact, and signposts to help. It also helps users to keep a section of 'golden' arrows which are positive thoughts that they have generated whilst working through the *'Change the Story'* and *'Change the way I view my Body'* sections.

Finally, in the *'Self Monitoring'* section, users can monitor and keep track of which app activities help, record thoughts and feelings in a journal, and view daily motivators (these are encouraging statements).

They can use the app to monitor their thoughts, feelings and behaviours and make change. They can also share their results with a therapist or helpful parents/carers and friends.



# Physical risks or 'red flags' to look out for



*“The Worth Warrior team at stem4 encourage you to monitor physical signs and symptoms that indicate that your health may be at risk. The following list might seem scary but the young people we worked with in creating the app told us that it would be useful to know what calls for a visit to the doctor.*

*This list doesn't cover all possible 'red flag' symptoms, but does provide an idea of the kinds of things to look out for. If you are worried about the physical changes you notice, or feel that your physical health is declining, then even if you don't have any of these red flags already, please get a health check to confirm you are keeping well.”*

The list below is the same as in the user booklet:

- Weight loss – significant, rapid
- Rapidly fluctuating weight due to binge eating
- Increasing tiredness getting in the way of being able to do the things you would like to
- Stomach aches and pains, especially after eating
- Digestive problems, for example being constipated
- Mood changes, for example quick to get angry, anxiety/panic, low mood
- Feeling very cold when the temperature is not particularly low
- Feeling light-headed
- Fainting when you haven't had a history of doing so
- Nutritional problems related to under eating, for example low iron
- Low blood pressure
- Fine hair growth on your body
- Finding it hard to concentrate
- Constant and/or repetitive thoughts about food and body image worries
- Avoiding social situations where there is food and eating
- Aches and pains in your muscles, especially when climbing up-stairs or squatting and standing
- Very low mood
- Being on online sites around body matters, exercise, eating disorders (including social media)
- More frequent fractures
- In females, disruption or stopping of periods
- Numbness and tingling of hands
- Blood in stools or in vomit
- Dry, yellow-coloured skin
- Sleep disturbance, especially waking up early in the mornings
- Bloating of stomach

Please speak to a responsible adult or make an appointment with your GP or physician.

## Signposts and resources

### UK

Here are some National UK organisations that you may find helpful:

### Mind



## US

The National Eating Disorders Association (NEDA)

The National Association of Anorexia Nervosa and Associated Disorders (ANAD)

National Alliance on Mental Illness

Crisis Text Line

## Canada

Crisis Text Line

Kids Help Phone (English and French)

## Australia

The Butterfly Foundation

Kids Helpline

You may also wish to indicate which local resources they could connect to:

### Local resources

# Pilot study and anonymised data analytics



This study is a preliminary evaluation of a new app called the Worth Warrior (WW) app for young people who experience early-stage eating disorders.

Worth Warrior was developed by a clinical psychologist, CEO and Chief Clinical Officer of a mental health charity for children and young people called stem4. The WW app uses techniques from a talking therapy called Cognitive Behavioural Therapy for eating disorders to help tackle the symptoms of early eating disorders and low self-esteem.

We would like to know if this app works well and if it can help young people manage their early symptoms of eating disorders and improve their self-esteem. We will use a before and after design to see if the WW app is user friendly and can help to reduce symptoms in young people aged between 17-25 years.

The research will take place over a 7-week period and aims to include up to 30 young people. We would like to collect information using online questionnaires at three time points, followed by a brief interview online.

Young people will be recruited via stem4's networks, social media, and their website. The project is divided into three stages:

- **Time 1:** Introduction and familiarisation with the WW app;
- **Time 2:** Post-app familiarisation (1 week);
- **Time 3:** Follow-up after 6-weeks to see if the app was helpful.

Data will be collected at each time point and during each phase to see if the app helped reduce their symptoms, their experience of using it and its safety. To collect more detailed feedback of using the app and its benefits (or qualitative data), participants will also be invited to take part in a brief online interview at Time 2. This qualitative part of the study will be jointly produced with young people.

The research study commenced in September 2022 and will end in December 2022.

The study is being carried out for stem4 by Informed Thinking, an experienced psychological research organisation. NHS Research Ethics approval has been obtained for this evaluation, number IRAS 314226.

For more information on the study please contact: [coordinator@stem4.org.uk](mailto:coordinator@stem4.org.uk)



## Embedded Analytics

The Worth Warrior app is an app that can be used on iOS and Android devices. The content is downloaded the first time the user opens the Worth Warrior app and then cached. It can still be viewed and used offline.

The Worth Warrior app has been designed with young people to ensure data and device memory/data use in their preferred device is not compromised.



The Worth Warrior app does not collect personally identifiable data and an account does not need to be created to use the Worth Warrior app. No cookies are used. IP addresses are not captured. The Worth Warrior app is standalone and does not connect to any other apps or devices or interact with existing enterprise systems.

Some optional questions are asked in the Worth Warrior app. This information is only used for research purposes and is completely anonymous. Anonymised data on whether tasks helped is collected to ensure that we can monitor the effectiveness of the Worth Warrior app and individual tasks.

Worth Warrior app users can be reassured that all information they document in the app including journal entries are completely private. stem4 has no access to any of this information.



In order to evidence the effectiveness of the Worth Warrior app, the following data will be made available:

- Number of downloads and number of users (on both iOS and Android)
- Anonymised data submitted during onboarding or via the App Settings of the Worth Warrior app (optional) including: Country, County (if in UK), Year of Birth, Gender, Ethnicity, Whether they are receiving professional treatment
- Aggregated data on user activity and its effectiveness
- Analytics on user journeys

Activity is logged to present the user with the following information:

- Interactive self-monitoring graph representing activities carried out over time along with whether these helped or whether these improved worth
- Activity log

All optional question and feedback data collected via the Worth Warrior app is aggregated and cannot be tracked to each user/device. However, the security of this data is still important to us and we will take all steps reasonably necessary to ensure that the data is treated securely. The transfer of data is encrypted over a secure connection (SSL).

Worth Warrior app data is stored using Amazon Web Services (AWS) which has certification for compliance with ISO 27001:2013 – [https://d1.awsstatic.com/certifications/iso\\_27001\\_global\\_certification.pdf](https://d1.awsstatic.com/certifications/iso_27001_global_certification.pdf).

This data is retained for no longer than is necessary and destroyed by 5 years after expiration.

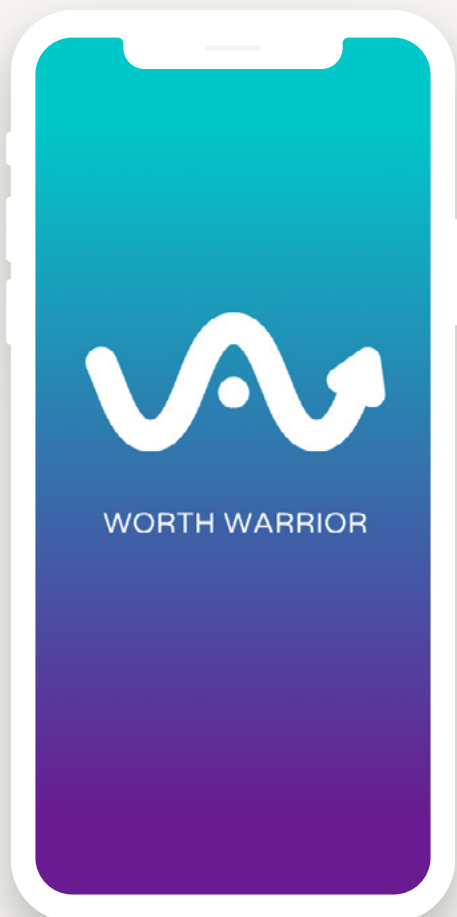
The developers of the Worth Warrior app, stem4, conform to the security requirements set by the Independent Commissioner's Office (ICO). stem4 is compliant with the Data Protection Act 2018 and the GDPR. stem4's nominated Data Protection Officer (DPO) is Yvette Nieslony and can be contacted at [dpo@stem4.org.uk](mailto:dpo@stem4.org.uk).

[You can read our full Privacy Policy here.](#)

stem4 is working towards the [Children's code \(or the Age appropriate design code\)](#) – find out more about this here: [Demystifying the Age Appropriate Design Code | 5Rights Foundation](#).



## Licensing information



stem4 can create a more personalised app for your service. We do this by meeting with you to find out your requirements and then once a price is agreed, create a licensed version for you to use.

The cost includes adding and collation of localised data (for example, postcode), adding signposts to local services, clinical safety re-assessment, as well as hosting.

For an annual fee (3 or 5 year fixed for an annual price, if required), we can provide quarterly analytic information as well as local insights on usage, user feedback and need.

## References

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Waller, G, Turner, H.M, Tatham, M, Moutford, V.A and Wade, T.A (2019) Brief Cognitive Behavioural Therapy for Non Underweight Patients; CBT-T for eating disorders, Routledge

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