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What works for mental health problems in youth? Survey of real-world experiences of treatments and side effects

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Abstract

Aim

Despite youth being the most common age group for onset of mental disorders, there is less knowledge on the benefits and harms of treatments in young people. In addition, efficacy data from randomised controlled trials may not generalise to how treatment works outside of research settings. This study aimed to investigate young people's perceived effectiveness of different treatments for mental health problems, the professionals who delivered these, and the experience of negative effects.

Methods

We developed a consumer report website where young people who were ever diagnosed with a mental disorder provided ratings on the helpfulness or harmfulness of different types of professionals, mental health treatments (medical, psychological, complementary/alternative), and self-help strategies, and whether they had experienced particular negative effects.

Results

557 young people aged 12 to 25 years, who were recruited from English-speaking, high-income countries, provided 1258 ratings of treatments. All treatments showed varied perceptions of effectiveness. Medical and psychological treatments were rated moderately helpful on average with low rates of harmfulness. Self-help strategies were rated as being as helpful as professional treatments. Side effects related to the head or mind (e.g. concentration difficulties, inability to feel emotions, depression, and irritability) were the most common across all types of medicines. For psychological treatments, treatment being too expensive and feeling worse at the end of a session were the most commonly reported negative effects.

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Conclusions

Study findings may be a useful guide to clinicians, researchers, young people and their families about what is likely to work in real-world settings.

Keywords

Adolescence, consumer behaviour, mental disorders, psychotherapy, psychotropic drugs

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Introduction

Mental disorders typically first develop in childhood or adolescence, with approximately half developing by the mid-teens and three-quarters by the mid-20s (Kessler et al., 2007). Despite youth being the most common age group for onset of mental disorders, there is less knowledge regarding efficacy and safety of psychotherapies and pharmacological treatments for adolescents experiencing a mental disorder (Crowe & McKay, 2017; Locher et al., 2017; Mychailyszyn & Elson, 2018; Solmi et al., 2020). There are fewer studies conducted in youth samples compared with adults, most existing studies do not assess the long-term effectiveness of treatments, and generally these studies do not represent real-world clinical practice (Reynolds, Wilson, Austin, & Hooper, 2012; Rith-Najarian et al., 2019; Weisz, McCarty, & Valeri, 2006). Furthermore, treatment studies in adolescents generally find a smaller effect than those conducted with adults, indicating that treatments may be more effective with adults than adolescents with similar symptoms (Cipriani et al., 2016; Klein, Jacobs, & Reinecke, 2007; Tsapakis, Soldani, Tondo, & Baldessarini, 2008). Other treatment approaches have received even less research attention, particularly in youth. Complementary or lifestyle interventions, such as yoga, exercise and omega-3, have some supporting evidence in adults, but there are very few trials conducted with adolescents, despite their popularity (Bailey, Hetrick, Rosenbaum, Purcell, & Parker, 2018; Cooney et al., 2013; Cramer, Lauche, Langhorst, & Dobos, 2013; Hallahan et al., 2016; Lawrence et al., 2015; Olesen, Butterworth, & Leach, 2010; Parslow et al., 2008).

Studies investigating the efficacy of treatments for mental disorders are usually conducted as randomised controlled trials (RCTs), which pose limitations to the applicability and generalisability of the information obtained beyond the study (Frieden, 2017). RCTs are conducted under strict experimental conditions that are dissimilar to how treatments would be administered outside of the clinical trial. For instance, many trials are carried out in specialised research settings, the effects of the treatment are compared to the effects of 'doing nothing' (rather than comparing it to a realistic alternative), and people with comorbid disorders and other differences are excluded from participating (Lorenzo, Lorenzo Luaces, Zimmerman, & Cuijpers, 2018). Recent evidence suggests that 40-60% of adolescents with depression would be excluded from typical clinical trials of antidepressants and psychotherapy, often due to suicide risk (Blanco et al., 2017). All of the above are not reflections of how treatment works outside of research studies (Seligman, 1995). In reality, for example, mental disorders are often comorbid (Cohen et al., 1998), and therapists tailor their therapies to the needs of their client instead of systematically following a manual (Klein et al., 2007). Another limitation is that RCTs usually examine treatment effects over relatively short time periods, such as several weeks or months, and longer-term effects are less well understood. Furthermore, meta-analyses of these RCTs contain publication bias; studies are more likely to be published if they find a treatment effect, and so the studies available to be selected in the analyses are biased towards finding a treatment effect to some degree (Cohn, 1996).

More research needs to be conducted in order to find out what treatments are effective for young people and what the commonly experienced negative effects of these treatments are. A complementary approach to evidence from RCTs is gathering evidence about perceived effectiveness (or 'helpfulness') from young

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people who have undertaken a treatment. Although there is a body of research on consumer *preferences* for treatment, there are few studies assessing the perceived effectiveness of treatments in adolescent or young adult populations. An exception is Edlund et al. (2015), which evaluated the perceived effectiveness of medication and counselling in an American national sample of adolescents with major depression. Whilst the study reported that these treatments were rated very helpful by a third to a half of respondents, it did not examine the helpfulness of different types of counselling or medications or other treatment approaches, and focused on one type of mental disorder only. In addition, negative effects are important to understand as they may drive treatment discontinuation, which is recognised as a significant problem in youth mental health care (de Haan, Boon, de Jong, Hoeve, & Vermeiren, 2013; Seidler et al., 2020). Key predictors of discontinuation include both treatment effects and therapist effects, such as the therapeutic relationship, although this is rarely measured from the adolescent's perspective (de Haan et al., 2013).

The aim of the study was to investigate young people's perceived effectiveness of different treatments for mental health problems, the professionals who delivered these, and the experience of side effects or negative effects from these treatments. We also investigated self-help strategies, which are commonly used but difficult to evaluate in RCTs.

Methods

Website

For this study, we developed a consumer report website where young people aged 12-25 years with a current or past mental disorder could report on their experiences with treatments. The 'What Works 4 U' (WW4U) website (now shut down) was designed as a vehicle for young people to share their experiences with mental health treatments and learn from others. Young people could report anonymously what mental health treatments they found to be effective or ineffective, as well as their side effects, which types of professionals they found to be useful, and what self-help strategies they found to be helpful. These ratings were automatically aggregated and reported on the website for other people to learn from. The website reflected the Health 2.0 values of empowerment of healthcare consumers, open-source generation of medical content and the dissemination of user-generated content (Scanlan, Jorm, Reavley, Meyer, & Bhar, 2017). It was designed to appeal to a youth audience, with minimal typing required and a youth-friendly look and feel (see Figure 1 for a screenshot). A project reference group consisting of youth mental health service users provided feedback on the website, which was incorporated to improve website appeal and usability.

Participants

Potential participants were invited to access the WW4U website via a mix of online and offline promotion. Eligible participants were from major English-speaking countries, including Australia, United States, Canada, Ireland, the United Kingdom and New Zealand. Online promotion included links from youth mental health websites, such as headspace (Australia), Youth Advocates for Mental Health (USA), Mind (UK), and teenmentalhealth.org (Canada). Participants were also recruited via promotion on Twitter and paid advertising on Facebook and Google ads targeted to searches for help for anxiety and depression. In addition, hard-copy advertisements were distributed to youth mental health clinics and mental health support groups in Australia. Recruitment took place between April 2011 and October 2017, although half of participants were recruited in 2016 or later. The study received a waiver for parental consent for minors and was approved by the University of Melbourne Human Research Ethics Committee (HREC# 1851512.1). For this study, data were analysed from participants aged between 12 and 25 years who reported experiencing a mental health problem and provided at least one rating of a professional or treatment. This age range was selected due to the high prevalence and negative disabling impact of mental disorders during this period (McGorry, Purcell, Hickie, & Jorm, 2007).

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Measures

Participants completed a questionnaire on the WW4U website. All participants provided informed consent and parental consent was not sought for participants aged under 18. The questionnaire began with three demographic questions (age, gender, country of residence). Participants then selected which mental health problem they had been diagnosed with. If they had been diagnosed with more than one, they were asked to start with the one that was most significant to them. Mental health problems were presented in categories: substance-related disorders, psychotic disorders, anxiety disorders (including obsessive -compulsive disorder and post-traumatic stress disorder), mood disorders, eating disorders, personality disorders, and bipolar disorder. They were then asked what age they had first noticed the symptoms, when the symptoms had started to affect their life, and their age when they were diagnosed.

Participants were then presented with a list of professionals and were asked to select which they had seen about their mental health problem (see Table 1). Participants rated the helpfulness of each professional they had consulted using a star-based rating scale, with anchors of 'not helpful' and 'very helpful', or the option to select 'made things worse' (see Figure 1). If they had seen more than one of any type of health professional, they were asked to give an average rating for that type.

Next, participants selected treatments they had received for their mental health problem. These were presented in the following categories: medications, other medical treatments, psychological treatments, complementary/alternative and self-help therapies, 'other things I have done to help myself', and alcohol and drug use (see Table 2). Medications were presented in both generic and branded versions (e.g. fluoxetine and Prozac). Self-help strategies were taken from previous research on strategies recommended by experts for mild depression (Morgan & Jorm, 2009). Participants could also rate other treatments not listed in each category. Each treatment was then rated for its helpfulness for their mental health problem using the same star-based scale described above. Participants were also asked at what age they started using the treatment, how long they used it for, whether they were still using the treatment, and their reasons for stopping.

For medical treatments, medications, and herbal medicines, participants were asked "did you experience any side effects from this treatment?". A list of possible side effects was presented, and participants could select multiple side effects for each treatment. Side effects were presented in categories: head/mind, stomach and bowel, sexual problems, skin, weight (gain or loss), abnormal test results, muscles/body/heart, energy and sleep, dependence/withdrawal problems (see Table 3). Information about the duration of each side effect was not collected.

For psychological treatments, participants were asked "was there anything you did not like about your psychological therapy?". A list of possible negative effects was presented, categorised as therapist-related or treatment-related (see Table 4) and participants could select multiple effects for each treatment.

Finally, participants could return to the start of the questionnaire and repeat the above questions for additional mental health problems they had been diagnosed with.

Analysis

The data were analysed with SPSS 26 and Stata 16. The star-based rating scale was recoded such that Made worse = 1, Not helpful = 2, to Very helpful = 6. Due to the small number of helpfulness ratings for some treatments, 95% confidence intervals were calculated on mean ratings. Participants' reasons for stopping treatments were content analysed into different themes by one author (AM), with multiple reasons possible.

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Results

The sample comprised 557 young people between the ages of 12 and 25 years (M=18.2, SD=3.4). Over half of the sample were aged under 18 (52.8%). The majority were female (86.2%), with the remainder male (10.4%) or not answered (3.4%). Respondents were most commonly recruited from Australia (40.9%), followed by the United Kingdom (22.1%), New Zealand (12.8%), United States (10.8%), Canada (7.5%), Ireland (4.7%) and other (1.3%).

Respondents reported on 1 to 4 different types of disorders they had received a diagnosis for, although most (78.6%) only reported on one. Anxiety disorder (322, 45.1%) and mood disorder (254, 35.6%) were most common. Other types of disorders were less common, including eating disorder (49, 6.9%), personality disorder (31, 4.3%), bipolar disorder (28, 3.9%), psychotic disorder (22, 3.1%) and substance disorder (8, 1.1%). The mean age of diagnosis was 16.0 years (SD=4.3) and the mean duration of illness was 2.33 years (SD=3.3).

Professionals

There were 1,372 ratings of different professionals from 535 respondents (96.1%). Respondents rated 4 professionals on average (IQR 3-6). GPs, psychologists, and counsellors were the most commonly rated.

Professionals with the highest helpfulness ratings were detoxification/rehabilitation program workers, psychologists, psychiatrists, case managers, and youth workers (see Table 1). School counsellors had the lowest helpfulness ratings, with nearly a fifth of ratings indicating they made things worse. Social workers also performed relatively poorly, with 14% of ratings indicating they made things worse.

Treatments

Overall, 519 young people (93.2%) provided 1,258 ratings of different treatments, averaging 2.4 (SD=2.1) per respondent. Table 2 presents the results on the helpfulness of different treatments for mental health problems.

For medical treatments, respondents reported starting medications at age 17.6 on average (SD=3.18) and had taken them for just over a year on average (M=1.14, SD=1.47), with the majority still taking them (61.2%). Mean ratings of helpfulness tended to be around 4 to 5, reflecting moderate helpfulness. Antidepressants, particularly SSRIs, were most frequently rated. About 9% of antidepressant ratings indicated they made things worse. Reasons for stopping treatment were given for 148 medications. Side effects were the most common reason (38.5%), followed by either the treatment not working, it stopped working, or it made things worse (37.2%). Other common reasons were symptoms improving (9.5%) and not agreeing with the treatment (6.1%; e.g. “I don’t like taking pills”, “I didn’t want to be dependent on them”).

For psychological treatments, respondents reported starting treatment at age 16.7 on average (SD=3.15), had received therapy for 1.34 years on average (SD=1.66), with about half still in treatment (46.8%). Cognitive behaviour therapy was the most common and was rated as moderately helpful, with 6% rating that it made things worse. Other types of psychological treatment were much less common. Mindfulness-based cognitive therapy and supportive psychotherapy were rated as moderately helpful from nearly 30 ratings. Reasons for stopping treatment were given for 138 psychological treatment ratings. There was a broader array of reasons for stopping compared to medications. Most commonly, respondents stopped treatment because their symptoms improved (26.8%). However, 21.7% stopped because the treatment didn’t work or made things worse, and 8.7% reported stopping because they disliked their therapist or their treatment approach (e.g. “didn't feel I connected with therapist or he listened to me”, “Too many demands and I felt like not focusing on the main problems”). Respondents also reported stopping because they ran out of sessions (10.1%), they moved or their therapist moved (9.4%), or they couldn’t afford the treatment (7.3%).

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Similar to medical and psychological treatments, mean ratings for self-help strategies tended to be in the 4-5 range, reflecting moderate helpfulness. Making a list of strategies that had worked in the past, and practicing good sleep hygiene, received mean ratings of 5 or above. For substances, cannabis was rated higher than cigarettes or alcohol, with alcohol receiving a relatively low rating of helpfulness.

Overall, there were few ratings for herbal medicines, nutritional medicine or complementary and alternative medicine approaches, so these ratings are not very reliable.

The relationship between treatment ratings and disorder class, age, and gender was explored using multiple regression models. Mean ratings of antidepressants, atypical antipsychotics, benzodiazepines, psychological treatment and self-help strategies were the response variables. Due to the small number of responses for some disorders, disorder class was collapsed into anxiety or mood disorder versus other disorder (substance disorder, psychotic disorder, eating disorder, personality disorder, bipolar disorder). Predictors were entered simultaneously, with females and anxiety or mood disorder as the base categories for gender and disorder, respectively. Results are shown in Table 5. For antidepressants, lower helpfulness ratings were given by males. Helpfulness ratings increased with age for psychological treatments, self-help strategies, and atypical antipsychotics. No predictors were statistically significant for ratings of benzodiazepines.

Side effects/negative effects

356 respondents provided information about side effects or negative effects for 625 treatments. On average, there was a mean of 5.0 negative effects per treatment (SD=4.7). This varied significantly by type of treatment, with medicines associated with more negative effects (M=6.1, SD=5.1) than psychological treatment (M=3.0, SD=2.6), $p<.001$.

Within medications, some types of side effects were experienced more frequently than others (see Table 3). Side effects related to the head or mind (e.g. concentration difficulties, inability to feel emotions, depression, and irritability) were the most common across all types of medicines. Effects on energy and sleep were also frequently reported across medicine types. Abnormal test results were rare, as were skin side effects.

For psychological treatments, treatment-related negative effects were more common than therapist-related ones (see Table 4). In particular, treatment being too expensive and feeling worse at the end of a session were most commonly reported. Feeling uncomfortable with the therapist was reported by nearly a fifth of responses. The pattern of results for CBT was very similar to that for other psychotherapies.

Discussion

This study aimed to collect data on the experience of real-world treatment for mental disorders by young people between 12 and 25 years old. An international sample provided over 1200 ratings on the effectiveness of a variety of medical, psychological, self-help, and complementary treatments for mental disorders. Unlike most treatment trials that are short in duration, many respondents rated treatments they had taken for more than one year.

All treatments showed varied effectiveness across respondents, indicating that no single treatment is suitable for everyone. CBT and antidepressants were the most frequent treatments received, consistent with clinical practice guidelines for treating depression and anxiety in youth (Connolly, Bernstein, & Work Group on Quality, 2007; National Institute for Health and Care Excellence, 2019). Generally, medical and psychological treatments were rated moderately helpful on average. Ratings of harmfulness were low and very similar to those found in trials of routine specialist care for youth with depression or anxiety (Bear, Edbrooke-Childs, Norton, Krause, & Wolpert, 2019) and CBT and pharmacotherapy for depression in adults (Vittengl et al., 2016). It is noteworthy that self-help strategies were perceived to be as helpful as

professional treatments. These particular strategies were selected by experts as likely to be helpful for depression, and previous research has shown that engaging in them can reduce depression symptoms in adults (Morgan & Jorm, 2009; Morgan, Mackinnon, & Jorm, 2013). Self-help strategies and psychological treatments tended to be rated as more helpful with increasing respondent age, potentially reflecting the greater cognitive or organisational capacity required to effectively undertake them (Hetrick et al., 2015).

Negative effects of treatment appeared to be more significant for medical treatments than psychological treatments, as more respondents stopped using medications due to side effects. Data on side effects from medication in youth is limited, particularly from RCTs with longer-term follow-up assessments (Solmi et al., 2020). A recent meta-review of RCTs and cohort studies investigated which medications were associated with particular side effects. It found that nausea/vomiting was the most common side effect from antidepressants and sedation was the main side effect from antipsychotics (Solmi et al., 2020). While our findings showed head/mind side effects were the most common, our data were from the perspective of respondents, rather than based on the number of medications with a particular side effect.

Investigation of negative effects from psychological treatments has been relatively neglected until recently (Cuijpers, 2019). Our findings reinforce the importance of the therapeutic relationship in any psychological treatment and the potential for negative effects from a suboptimal alliance (Jonsson, Johanson, Nilsson, & Lindblad, 2015). Young people reported that not feeling comfortable with their therapist, or not feeling cared about or listened to, as relatively common negative experiences and a reason for stopping treatment. Young people and their families should know that persistence is key in finding the right fit with a therapist, as it is common to seek help from several professionals before obtaining treatment perceived to be helpful (Harris et al., 2020). Better ways of determining a good fit between therapist and client could prevent treatment discontinuation and delays in obtaining helpful treatment. Concerningly, 29% of reported negative effects were the young person feeling worse at the end of the session. Therapists may not always succeed in the challenging balancing act of raising difficult issues or feelings during a session whilst instilling a sense of hope that they can be overcome (Berk & Parker, 2009). While our data do not make clear whether respondents perceived feeling worse after a session to be worth it in the longer term, this finding may be useful for youth mental health clinicians to share with their clients regarding treatment expectancies.

These results should be considered in the light of study limitations. Respondents were a convenience sample of young people with self-reported mental disorders who volunteered to share their experiences. Their experiences may not be representative of the wider population of young people with mental disorders. For example, we recruited fewer males than females, who may have different experiences with treatments, particularly psychotherapy (Seidler, Rice, Ogrodniczuk, Oliffe, & Dhillon, 2018). We also didn't ask about other demographic variables such as ethnicity or whether they received treatment in public or private settings, so we unable to judge whether participants are a similar group to those who participate in research treatment trials. We did not collect data on the helpfulness of peer support workers, or data on the severity of disorder, making it difficult to compare across treatments that may be used or helpful for different levels of problem severity. Furthermore, as treatments could not be verified, it is possible that some ratings could have been made for the wrong professional or treatment due to poor mental health literacy (e.g. rating a counsellor rather than a psychologist). Finally, the assumption of independent data for the regression analyses was violated – the same individual could contribute multiple ratings (e.g. they rated the same treatment for multiple disorders). These findings should therefore be interpreted with caution.

This study, began in 2011, was an early example of using digital technology to try to amplify the consumer voice and collect non-traditional, large-scale data sets. This approach was quite innovative at the time, but wasn't able to take full advantage of changes that would make the study easier to conduct now, such as the significant rise in social media and related advertising, and people feeling more comfortable to share

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personal data online. This study has highlighted the importance of working together with young people with lived experience to co-design the questionnaire as partners. This would ensure we were asking the right types of questions about potential benefits and harms of different treatment options, to better inform young people's decision making.

In conclusion, this study reported on young people's experiences with a variety of treatments for mental disorders. Overall, we found positive perceptions of self-help strategies, and that psychological treatments and medications were perceived as moderately helpful but differed in the impact from negative effects. These findings may supplement efficacy data from trials that have less generalisable samples and shorter treatment follow-ups, and be a useful guide to clinicians, researchers, young people, and their families about what is likely to work in real-world settings.

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Conflict of Interest

The authors report no conflicts of interest.

Data availability statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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Tables

Table 1. Ratings of professionals for treatment of mental health problems in young people†

Professional	N	M (95% CI)	SD	Mdn	% made worse
Counsellor	854	3.91 (3.81 - 4.02)	1.61	4	8.2
Case manager	222	4.24 (4.03 - 4.46)	1.61	5	6.76
Complementary therapist	140	4.19 (3.92 - 4.45)	1.60	4	7.14

Detoxification/Rehabilitation program workers	83	4.72 (4.40 - 5.04)	1.46	5	4.82
GP	1054	4.01 (3.92 - 4.09)	1.41	4	3.13
Nurse	356	3.90 (3.75 - 4.06)	1.49	4	7.58
Occupational therapist	151	3.82 (3.58 - 4.06)	1.47	4	6.62
Pharmacist	247	3.76 (3.58 - 3.94)	1.45	4	3.64
Psychiatrist	787	4.29 (4.19 - 4.40)	1.48	5	4.7
Psychologist	938	4.50 (4.41 - 4.60)	1.51	5	3.3
School counsellor	668	3.12 (2.99 - 3.25)	1.69	3	19.16
Social worker	323	3.91 (3.71 - 4.10)	1.77	4	13.93
Support group	276	4.16 (3.98 - 4.34)	1.51	4	3.99
Telephone helpline	425	3.81 (3.65 - 3.97)	1.64	4	5.41
Youth worker	293	4.24 (4.06 - 4.41)	1.50	5	4.44

† Rating scale: 1 = Made worse, 2 = Not helpful, 6 = Very helpful

Table 2. Ratings of treatments for mental health problems in young people†

	N	M (95% CI)	SD	Mdn	% made worse
Medical treatments					
Mean selective serotonin reuptake inhibitor (SSRI)	267	4.02 (3.83 - 4.21)	1.58	4	9.36
Mean noradrenergic and specific serotonergic antidepressant (NaSSA)	11	3.18 (1.95 - 4.41)	1.83	2	18.2
Mean serotonin-norepinephrine reuptake inhibitor (SNRI)	42	3.93 (3.50 - 4.36)	1.37	4	4.8
Mean tricyclic antidepressant (TCA)	7	4.71 (3.33 - 6.00)‡	1.50	5	0.0
Mean antidepressant	*327*	*4.00 (3.83 - 4.17)*	*1.57*	*4*	*8.9*
Mean typical antipsychotic	4	3.50 (1.45 - 5.55)	1.29	3.5	0
Mean atypical antipsychotic	62	4.21 (3.80 - 4.62)	1.61	5	3.2
Mean benzodiazepine	25	4.56 (3.99 - 5.13)	1.39	5	4
Mean mood stabiliser	14	4.86 (4.22 - 5.49)	1.10	5	0
Mean stimulant	6	5.33 (3.62 – 6.00)‡	1.63	6	0
Electroconvulsive therapy	1	6.00	-	6	0
Mean medical	*439*	*4.10 (3.96 - 4.25)*	*1.57*	*4*	*7.29*
Psychological treatments					
Acceptance and commitment therapy	19	4.26 (3.58 - 4.94)	1.41	4	0
Autogenic training	3	4.67 (3.23 - 6.00)‡	0.58	5	0
Behaviour therapy	3	3.67 (1.00 - 6.00)‡	1.15	3	0
Cognitive analytic therapy	14	4.36 (3.43 - 5.28)	1.60	5	0
Cognitive behaviour therapy	152	4.37 (4.11 - 4.63)	1.61	5	5.92
Cognitive therapy	12	4.50 (3.81 - 5.19)	1.09	5	0
Dialectical behaviour therapy	18	4.61 (3.90 - 5.32)	1.42	5	0
Exposure therapy	10	4.60 (3.76 - 5.44)	1.17	5	0
Eye movement desensitisation and reprocessing	8	4.38 (2.77 - 5.98)	1.92	5	12.5
Family therapy	12	3.00 (2.06 - 3.94)	1.48	3	25
Group therapy	10	4.50 (3.10 - 5.90)	1.96	6	0

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Hypnotherapy	3	4.67 (1.00 – 6.00)‡	1.53	5	0
Interpersonal therapy	2	2.50 (1.00 – 6.00)‡	0.71	2.5	0
Marital or relationship therapy	2	5.50 (1.00 – 6.00)‡	0.71	5.5	0
Mindfulness based cognitive therapy	28	4.21 (3.57 - 4.86)	1.66	5	10.7
Problem-solving therapy	5	4.20 (3.16 - 5.24)	0.84	4	0
Psychoanalytic psychotherapy	11	5.36 (4.55 - 6.00)‡	1.21	6	0
Psychodynamic-interpersonal therapy	2	3.00 (1.00– 6.00)‡	1.41	3	0
Psychoeducation	4	5.50 (4.58 - 6.00)‡	0.58	5.5	0
Rational emotive therapy	3	5.33 (3.90 - 6.00)‡	0.58	5	0
Relaxation therapy	14	4.29 (3.26 - 5.31)	1.77	4.5	0
Schema-focused cognitive therapy	2	5.00 (1.00 - 6.00)‡	1.41	5	0
Social skills therapy	6	3.83 (2.61 - 5.06)	1.17	4	0
Stress inoculation therapy	1	4.00	-	4	0
Supportive psychotherapy or supportive counselling	26	4.38 (3.78 - 4.99)	1.50	5	3.85
Systemic therapy	2	5.50 (1.00 – 6.00)‡	0.71	5.5	0
Mean psychological treatment	*372*	*4.37 (4.21 - 4.52)*	*1.54*	*5*	*4.57*
Self-help strategies					
Asked a trusted friend or relative to help you get out and about or do activities	18	4.06 (3.62 - 4.49)	0.87	4	0
Ate a healthy, balanced diet	17	4.82 (4.27 - 5.38)	1.07	5	0
Did something you enjoy	56	4.50 (4.17 - 4.83)	1.24	5	0
Engaged in an activity that gives a feeling of achievement	18	4.67 (4.03 - 5.30)	1.28	5	0
Let family and friends know how you are feeling so that they are aware of what you are going through	22	4.45 (3.79 - 5.12)	1.50	5	4.55
Made a list of strategies that have worked in the past for your mental health problem and used them	13	5.31 (4.68 - 5.93)	1.03	6	0
Made sure you got out of the house for at least a short time each day	12	4.58 (3.75 - 5.42)	1.31	5	8.33
Practiced good sleep habits and maintained a regular sleep schedule	18	5.00 (4.52 - 5.48)	0.97	5	0
Rewarded yourself for reaching a small goal	13	4.92 (4.16 - 5.68)	1.26	5	0
Talked problems or feelings over with someone who is supportive and caring	55	4.67 (4.38 - 4.97)	1.09	5	0
Tried to remain involved in purposeful activities for at least a small part of every day	25	4.64 (4.11 - 5.17)	1.29	5	0
Mean self-help strategy	*267*	*4.64 (4.50 - 4.79)*	*1.19*	*5*	*0.75*
Substances					
Alcohol	45	3.64 (3.15 - 4.14)	1.64	4	13.33
Cannabis	39	4.90 (4.47 - 5.32)	1.31	5	5.13
Cigarette	28	4.21 (3.56 - 4.87)	1.69	4	7.14

Mean substance	*112*	*4.22 (3.92 – 4.53)*	*1.63*	*5*	*8.93*
Herbal/complementary/nutrition					
Acupuncture	1	3.00	-	3	0
Aromatherapy	2	5.50 (1.00 – 6.00)‡	0.71	5.5	0
Bach flower remedies	3	2.67 (1.00 - 5.54)‡	1.15	2	0
Bibliotherapy	3	4.00 (1.00 – 6.00)‡	2.00	4	0
Breathing training	6	3.50 (1.54 - 5.46)	1.87	3.5	16.67
Combined herbal preparations	2	4.00 (1.00 - 6.00)‡	2.83	4	0
Exercise or physical activity	8	4.63 (3.37 - 5.88)	1.51	5	0
Ginkgo biloba	1	2.00	-	2	0
Massage	2	6.00	0.00	6	0
Meditation	9	5.00 (4.23 - 5.77)	1.00	5	0
Omega-3 fatty acids	4	4.50 (2.45 - 6.00)‡	1.29	4.5	0
Other herbal medicine	2	2.50 (1.00 – 6.00)‡	0.71	2.5	0
Other nutritional medicine	1	4.00	-	4	0
Passionflower	1	2.00	-	2	0
Reiki	3	2.33 (1.00 - 3.77)‡	0.58	2	0
Relaxation	3	4.00 (1.52 – 6.00)‡	1.00	4	0
St John's wort	2	3.50 (1.00 – 6.00)‡	0.71	3.5	0
Valerian	4	3.50 (1.91 - 5.09)	1.00	4	0
Vitamin B12	2	4.50 (1.00 – 6.00)‡	0.71	4.5	0
Vitamin D	2	3.50 (1.00 – 6.00)‡	2.12	3.5	0
Yoga	7	5.57 (4.84 - 6.00)‡	0.79	6	0
Mean herbal/complementary/nutrition	*68*	*4.16 (3.79 - 4.53)*	*1.51*	*4*	*1.47*

† Rating scale: 1 = Made worse, 2 = Not helpful, 6 = Very helpful

‡ 95% confidence intervals have been constrained to upper and/or lower possible values when outside scale range

Table 3. Experience of type of side effect for antidepressants, antipsychotics, benzodiazepines and mood stabilisers, reported by young people

	Antidepressants (n=270)		Antipsychotics (n=54)		Benzodiazepines (n=20)		Mood stabilisers (n=11)		Stimulants (n=3)	
	n	%	n	%	n	%	n	%	n	%
Head/mind[a]	229	84.8	42	77.8	15	75.0	9	81.8	3	100.0
Stomach and bowel[b]	117	43.3	5	9.3	3	15.0	6	54.6	0	0.0
Sexual problems[c]	100	37.0	11	20.4	2	10.0	3	27.3	0	0.0
Skin[d]	28	10.4	3	5.6	0	0.0	0	0.0	0	0.0
Weight gain/loss	75	27.8	17	31.5	2	10.0	3	27.3	0	0.0
Abnormal test results[e]	7	2.6	2	3.7	0	0.0	1	9.1	1	33.3
Muscles/body/heart[f]	84	31.1	13	24.1	5	25.0	5	45.5	1	33.3
Energy and sleep[g]	158	58.5	30	55.6	14	70.0	6	54.6	1	33.3
Dependence/withdrawal problems[h]	66	24.4	8	14.8	5	25.0	2	18.2	0	0.0

a. concentration difficulties, memory difficulties, depression, irritability, unable to feel emotions, epileptic seizures, blurry vision, increased salivation, reduced salivation, dizziness, headaches, anxiety, low/no motivation

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b. nausea, vomiting, diarrhoea, constipation, urinating more or less often, urinating in larger quantities
c. changes in menstrual periods/cycles, producing breast milk when not pregnant/breastfeeding, breast enlargement in males, increased or decreased sexual desire, erectile dysfunction, ejaculatory dysfunction, orgasmic dysfunction, dry vagina
d. rash, itchiness, increased sensitivity to light, increased pigmentation, increased tendency to sweat
e. abnormal blood tests, abnormal heart tests, problems with liver
f. heart palpitations, muscular contractions, muscle stiffness, slowness, trouble getting moving, involuntary movements, feeling restless or jittery, shaking or muscle trembling, tingling or pins and needles in hands and feet
g. feeling more fatigued or tired, sleeping more than usual, sleeping less than usual, increased dream activity, drowsiness
h. dependence on medication, problems withdrawing from medication

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Table 4. Experience of type of negative effect for psychological treatments, reported by young people

	All therapies (n=235)	
Therapist related	**n**	**%**
Became too dependent on therapist	24	10.2
Therapist did not really care about me	38	16.2
Therapist did not pay enough attention or was too busy for me	30	12.8
Therapist was overdemanding	27	11.5
Therapist underestimated severity of my problems	28	11.9
I felt that therapist could not relate to me	25	10.6
I did not feel comfortable with therapist	43	18.3
I did not feel confident about therapist competence	15	6.4
Therapist did not maintain confidentiality	21	8.9
Therapist behaved inappropriately towards me	1	0.4
Therapist thought my problem was different to what I did	15	6.4
Therapist did not involve me in making treatment decisions	28	11.9
Treatment related	**n**	**%**
Too much homework between sessions	32	13.6
Treatment went on for too long	20	8.5
Treatment did not go for long enough	55	23.4
Each treatment session was too long	6	2.6
Each treatment session not long enough	40	17.0
Treatment was not challenging enough	28	11.9
Treatment was too hard	33	14.0
Treatment goals were never set	13	5.5
Treatment goals were not met	9	3.8
Treatment goals were the therapist's not mine	14	6.0
Felt worse at end of therapy sessions than before start of session	69	29.4
Treatment was too expensive	70	29.8

Table 5. Multiple regression models predicting helpfulness ratings of antidepressants, atypical antipsychotics, benzodiazepines, psychological treatment, and self-help strategies

	Other disorder versus mood/anxiety disorder		Males versus females		Age	
	b (SE)	p	b (SE)	p	b (SE)	p
Antidepressants (n=315)	-0.15 (0.26)	.567	-0.89 (0.30)	.004	-0.01 (0.03)	.661
Atypical antipsychotics (n=60)	-0.12 (0.41)	.779	-0.91 (0.66)	.171	0.15 (0.06)	.011
Benzodiazepines (n=25)	-0.68 (0.89)	.457	-1.22 (0.87)	.177	0.02 (0.10)	.831
Psychological treatment (n=367)	0.11 (0.21)	.577	0.08 (0.34)	.811	0.12 (0.03)	<.001
Self-help strategies (n=257)	0.14 (0.21)	.490	-0.07 (0.27)	.808	0.09 (0.02)	<.001

Figures

Figure 1. Screenshot of the What Works 4 U website, with an example rating of a mental health treatment

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