

## Development and evaluation of an online intervention for the treatment of depression in university students

### University of Nottingham and Mental Health Research UK Joint Award

**Mark Robinson PhD Scholarship 2011, University of Nottingham**, School of Community Health Sciences & Institute of Mental Health

**Supervisors:** Professor Cris Glazebrook & Professor Richard Morriss

**Research Student:** Bethan Davies

**Start date:** September 2011

#### Description

There are many factors associated with university life which can affect the mental health of students, including leaving the family home and supportive school environments, loneliness, sleep disturbance, drug and alcohol use, economic hardship and exam stress.

Research suggests that University students have high rates of depression compared to the general population and the Royal College of Psychiatrists has argued that more needs to be done to identify and treat mental health problems in this vulnerable group.

Online self-help interventions for the management of depression have been shown to be effective and computer-based health education has lots of advantages for a student population including easy access and an engaging and interactive format.

Computer-based education can use film to model behaviours and strategies which have been shown to improve mental health and can provide feedback by recording progress.

This project aims to use what we know about computer-based health education and therapy to develop an online programme specifically for university students with symptoms of depression.

We want to see if those students using the programme have fewer symptoms of depression, make better use of available help and have a greater understanding of depression and its treatment compared to students without access.

The PhD student will also talk to students offered the programme to find out how they felt about it and if anything made it difficult to use. If effective, the computer program will be a



cost-effective intervention which be offered to students experiencing symptoms of anxiety and depression at an early stage.

**Mental Health Research UK are pleased to announce the first of our completed PhD Scholarships.**

Dr Bethan Davies has graduated from Nottingham University and is our first graduate. Below are photographs and a PDF of her thesis.



**Bethan and her supervisor Professor Cris Glazebrook**



**Bethan's Final Report**

Young adulthood is a vulnerable period for the onset and development of depression, and is a common mental health problem experienced by university students. Depression can significantly impact and impair students' academic performance, social relationships, and general well-being. However students often do not seek professional help for their mental health for many reasons, including stigma about mental health and help-seeking and preferences for self-reliance. Students are highly connected to internet-enabled technologies, and online interventions present a useful strategy for helping managing depression and can address many reasons why they do not seek professional help. Mental health literacy is an umbrella term reflecting an individual's beliefs, knowledge and attitudes relating to mental health, which assist in recognition, management and prevention of mental health problems. The aim of this PhD was to develop an evidenced-based psycho-educational online intervention for promoting mental health literacy for depression ("depression literacy") and management of depression in Nottingham-based university students.

This online intervention was informed by evidence from several research projects and

through literature review of depression in university students, help-seeking theory for mental health problems, and the role of mental health literacy in helping improve management and help-seeking for depression.

- Study One involved a systematic review and meta-analysis of evidence for computer- and web based interventions to improve common mental health problems in university student populations.
- Study Two involved identifying the mental health needs of the intervention's target population through a survey which profiled depressive and anxiety symptoms and related help-seeking behaviours with 758 local university students. Expanding on this,
- Study Three used involved interviews with students to explore their perceptions of changes in their mental well-being since entering university, factors affecting their mental well-being, and how they coped and managed their mental health within education. Findings from these two studies suggested friends were an important source of help. This led to:
- Study Four, which involved a survey exploring students' helping actions to support a hypothetical friend experiencing depressive symptoms. Findings from these four studies contributed into the development of the online intervention, based on Rickwood et al.'s (2005) four-step process model of help-seeking.
- Study Five describes the development and brief testing of the online intervention - a website named "Managing Your Mood Online" (MYMO). This website consisted of ten sections reflecting different aspects of mental health literacy. This thesis demonstrates the first stage of a process to design an appropriate and relevant resource for Nottingham-based university students.

After completing the PhD, my first appointment was as a Research Fellow in the NIHR MindTech Health Technology Co-Operative, based at the University of Nottingham. This group is a national centre focussing on the development, adoption and evaluation of new technologies for mental healthcare and dementia ([www.mindtech.org.uk](http://www.mindtech.org.uk)), and I am working within its Children and Young People's Theme that focuses on the development and evaluation of digital technologies for children and young people's mental health and well-being. I am also a member of the advisory board for Students Against Depression ([www.studentsagainstdepression.org](http://www.studentsagainstdepression.org)), a website developed and maintained by the Charlie Waller Memorial Trust ([www.cwmt.org.uk](http://www.cwmt.org.uk)).

### **Blog - March 2013**

The New Year has brought on many new challenges for me – I have now collected data from my online survey, have cleaned it up and need to start statistical analysis. Initial findings seem to show that about half the students surveyed reported some degree of depressive or anxiety symptomology. I will be analysing this in the upcoming weeks to further explore the

data.

The systematic review is now in the “second draft” stages, hurrah! Last year I was informed of a conference that would be relevant to my studies – the International Society for Internet Interventions holds a biannual conference where current research within the field of e-health is disseminated and presented to other relevant academics, researchers, students and clinicians. I submitted an abstract based on my review, and I was very pleased to hear it got accepted for their next conference! The conference is being held in May in Chicago, USA – this will give me great experience of dissemination and networking with others in the field. I also applied for a travel bursary available within the University Of Nottingham’s Graduate School – and thankful to hear that they have awarded me a grant to help towards funding this trip.

I have also begun another one of my research projects, which involves interviewing university students about emotional difficulties they may have experienced during higher education. To date I have managed to do sixteen interviews – I’ve found it difficult to keep up with the transcription of these though, but it must be done! Many of the students I’ve spoken to have experienced emotional distress or mental health difficulties – and I’m very grateful to them for participating and telling me about their personal experiences. Their experiences will be analysed qualitatively and will contribute towards the development of the online resource.

In addition to this, I am a committee member on the Midlands Health Psychology Network – this is a forum for health psychologists and students within the Midlands. My role within the committee was to co-organise and deliver their annual conference - this was on 14th February at the University of Birmingham. I quite enjoyed organising this, and got some hands-on experience of what it means to put on a conference! Given that it was Valentine’s Day, the conference theme was “Matters of the Heart” and our keynotes delivered presentations in line with this theme: Professor Gill Furze spoke about her research into the role of beliefs and illness perceptions in cardiac rehabilitation, and Professor Roger Ingham spoke of young people’s sexual health and the complexities involved in research in this area. I really enjoyed the day and it was great to speak to other students working in the field of health psychology.

## Year 3 Progress Report

### Blog - August 2013

In mid-May I was very fortunate to be able to travel to Chicago to attend International Society for Research on Internet Interventions (ISRII) annual conference. A combination of financial support from the university's graduate school and my school meant I could afford to go on this trip. Here the leaders in the field of internet interventions were gathered – there were researchers from across the globe, and it was a great opportunity to network and discover what's currently happening in this rapidly-expanding field of research. I had brought with me a poster which presented my current findings from my review to show to relevant researchers. Unfortunately it appeared that another research team had conducted a similar review to mine, which was a bit discouraging – but through talking to the lead author I learnt about their review and that we did have some differences as to how we'd conducted our review. All was not lost! Since then I have been re-working my review and conducting a meta-analysis of depressive, anxiety and psychological distress outcomes reported in the included interventions. The findings from my review do support use of website-based interventions for improving mental health of university students – but with some limitations, such as small sample sizes and the use of skewed data within outcome measures.



The conference was over three days and was a great opportunity – I was very grateful to have gone and it was a particular challenge for me given that I am not a very good flyer! However the journey both ways was great and I managed to incorporate some sightseeing around Chicago – including going up one of the tallest buildings in North America!

I have been progressing with analysing and writing up the results from my online survey. Analysis of the data found that 36.4% of the sample screened for moderate-to-severe levels of depressive, anxiety or hypomania symptoms, and it is of note that 61.2% (n=169) of this group had not sought any professional help for their mental wellbeing. Feelings of tiredness/lethargy and worrying too much about different things were the depressive and anxiety symptoms most commonly reported by the student sample. The findings of this study will be used in the development of the online resource and will hopefully be submitted for publication.

I have also conducted interviews with 37 undergraduate students about mental wellbeing –

these have all been transcribed and I have now begun to analyse the data. Themes relating to students' experiences of mental health difficulties and help-seeking for mental well-being will be explored within the interviews. I am very grateful for the students who took part, and it has been interesting to listen to their range of experiences. Overall this Summer I am continuing with analysing data from the different studies and finishing off my review, in preparation for developing the online resource.

### **Blog – December 2013**

I have completed my systematic review and meta-analysis, and after reviewing and editing it many times have now submitted it for review to the Journal of Medical Internet Research (JMIR). At the conference I attended in Chicago last May the journal's editor was interested in the review, and so I am hoping it will be reviewed favourably. In this review, I concluded that computer-delivered and website-based interventions for depression, anxiety and psychological distress can be effective in improving these outcomes – but mostly when compared to an inactive control group. There were several limitations to the findings, including the use of small sample sizes and over-sampling of psychology students. Hopefully when this review is published, I will be able to share more of this with you all.



I have been making progress in analysing the interviews I conducted with students. Between July and September I used thematic analysis to help me identify codes and subsequent themes from the data. I reached the stage wherein I was satisfied with the themes and subthemes that had developed, so I randomly took thirty quotes that had been assigned to the themes and along with a codebook, handed them to an academic within my department so that inter-rater reliability

could be explored. Some preliminary findings map on to previous help-seeking theory within the field – for example some students mentioned concerns about whether their mental distress is a normal aspect of everyday life or whether it needs intervention. This finding is in line with previous research that suggests young adults may rationalise their mental distress as being normal.

While I have been waiting to hear from the journal regarding my review and for feedback about the inter-rater reliability, I have been making progress with writing a thesis chapter about help-seeking for mental health and mental health literacy in young adults/university students. This has been exceptionally helpful in aiding my understanding of the topic, as well as being helpful in analysing the interviews. I have also outlined what is going to be on the online resource and have started making a plan as to how to explore the feasibility and conduct pre-evaluation of it prior to it being fully trialled. I am looking forward to 2014 and progressing further on with the PhD.

Outside of the PhD, I have been continuing to make sure I have a hobby to help alleviate any stress I may feel! I go swimming twice a week and have been making great improvements with my technique. I have also been crocheting and knitting away as always. The Institute of Mental Health held their annual Christmas bazaar in December, and I had crocheted a bunch of snowflakes and Christmas trees – funds raised from the bazaar went to Friends of Nottingham, a local mental health charity.

## **Year 2 Progress Report**

### **Moving Onwards**

Well I am now a second year PhD student – and the work is definitely on! Others have said to me it tends to be much busier in the second year, and after some delays with my ethics application in my first year I have now begun collecting some data. I have been conducting interviews with professionals who work to support the mental health of university students. This has provided a good opportunity to apply and improve my interpersonal skills, as well as improving my understanding of conducting interviews for research. I often feel quite nervous when meeting new individuals, but as the interviews have progressed I have found myself feeling more at ease. The next step with these is to begin analysing the interview data.

I have also recently started circulating an online survey to undergraduate students. Within the survey we are administering three scales to screen for anxiety, depressive symptoms and bipolarity to undergraduate students. Alongside this, we ask participants whether they have experienced any difficulties in their emotional health and well-being since university, how these have affected them and whether they have sought any help/advice for any difficulties. I hope the data from this will provide me with an idea about how prevalent these symptoms are in students and help me build up a brief “profile” of student mental health.

After receiving great support within my department, I am in the final stages of completing my systematic review. The findings seem to suggest that - compared to receiving no treatment or an attention placebo - online interventions to improve mental health outcomes do have some positive effects upon students’ mental health. However there are many factors within this review that mean the findings need to be approached with caution – such as the small number of studies found and the range of outcome measures used. None the less conducting this provided me with some initial experience of what it takes to complete a review.

### **November 2012 - Events**

This month I attended a workshop run by the British Psychological Society at their London offices. The workshop was based around using LifeGuide – which is a freely available piece of software that allows researchers to create, modify and trial online interventions. Developed by a team of researchers at the University Of Southampton, LifeGuide is designed for use by individuals with no programming experience and can be used to design behavioural and mental health interventions. I found the workshop highly useful – and hopefully I will be able to use the LifeGuide software to develop my online intervention to help management of depression in university students.

Later on this month I will be attending the Student Mental Health Conference at Wadham College, Oxford. This conference is organised by SRSB, a voluntary charity which helps to provide support to students with mental health problems. This conference brings together experts within the field to provide some informative talks to both students and professionals working in universities. I hope to find this conference an informative event, and will provide the opportunity to speak both to students engaged in university-based mental health campaigns and who have experienced mental health difficulties.

### **Year 1 Progress Report from Bethan Davies**

I'm Bethan Davies and I am a PhD student at the University of Nottingham who has been awarded funding from Mental Health Research UK to fund my studies. My PhD is focusing on the mental health of university students and will involve developing and evaluating an online intervention for depression in this population.

### **Adapting to PhD life**

I found it challenging to adapt to the change of pace associated with undertaking a PhD – it was different to having the set exams and essays that I was previously used to. However I have had great support from my supervisors and fellow students in helping me adapt to the new environment! As the field of university students' mental health was a relatively new topic for me, I started my PhD by searching and reading the relevant literature. To help comprehend the vast amount of research, I wrote a piece of writing outlining the rates of depression in students, what problems they face due to their depression, and what services are in place to meet their mental health needs. Completing this writing provided me with an introduction to my research topic and helped me identify the key researchers and journals in the area.

During my first term I prepared an ethics application for an online survey and semi-structured interviews to explore undergraduate students' needs for support for their emotional difficulties. The results of this first study will inform the development of the online intervention. I managed to complete and submit this application just before

Christmas; however as expected the application was returned with a series of comments to be addressed. I edited my application to respond to their concerns, and I managed to resubmit this in March.

### **Current progress**

Currently I am working on a systematic review to contribute to my needs assessment. This review is looking at the theoretical basis and content of previous online interventions conducted in undergraduate student populations. Completing this review has been somewhat comforting; it has helped ease my worries as I have a set framework to follow. I am confident in using online databases and in contacting researchers about their work. I have found the review process to be a great learning experience which has helped improve my understanding of what actually occurs in a review. In April I submitted an application to the university's Cascade Grant Fund to request a small amount of funding. This funding will contribute towards the professional development of the online intervention. I have also submitted a project opportunity for the third year medical students here at the University Of Nottingham. This plan would involve the student conducting research into students' opinions and evaluations of mental health websites, in order to contribute to the development of the online intervention. It will provide the student with some good experience of intervention planning and design, and will also provide myself with some supervisory experience. I will also be attending a Mental Health First Aid course in Sheffield to help increase my understanding of mental health and to aid me in interviewing students too.

### **Challenges**

I found the ethics application to be a challenging process as I have had limited experience of completing such applications. I feel confident that permission will be granted, as I have had support and advice from my supervisors in responding to the ethics committee's concerns.

### **Other opportunities**

In February I attended the 8th Annual Midlands Health Psychology Network conference, held in Coventry. This was my first conference, and I also delivered a poster presentation about my Masters' research project. I enjoyed talking and networking with other health psychologists and students, and it gave me an introductory conference experience. I was also fortunate in that my poster was awarded the best poster prize – and I am still surprised about this now! The conference also held a subsequent workshop presented by Professors Susan Michie and Marie Johnston. These two academics are strongly established and known for their research into identifying the components and techniques used in behaviour change interventions. This workshop provided delegates with activities to help identify

behaviour change techniques in published intervention studies, and so will be useful in analysing the studies included in my systematic review. I have also been helping out with a new student-led volunteering project at the university which aims to raise awareness of mental health issues around the campus.

### **Outside of the PhD environment**

Numerous individuals had told me that in completing a PhD, it is beneficial to have a hobby that is completely unrelated to your research topic. For me I have used my spare time to learn a new hobby – knitting! The university has its own knitting society – so I went along to one meeting and soon got hooked on it. I have found this knitting has done wonders for my well-being – I have enjoyed learning a new skill and it really helps me relax away from my studies.