



6th Scientific meeting 2019  
September 5-6, Copenhagen



# Welcome to 6th Scientific Meeting of the esrii

We are excited and honoured to present the many high-quality contributions that have been submitted to this year's conference! We have presenters from many different research environments in universities, hospitals, primary care settings and more. Also, there are presenters from many different countries, some of whom have travelled far to get here e.g. from Mexico and Australia.

There are four keynote presentations, 40 oral presentations, 106 poster presentations and ten technological demonstrations - AND as a new thing this year, one early career researcher was voted by you to get access to one keynote style presentation in plenum. Furthermore, we have partnered with visionary private companies and public organisations to fund the conference. We are very thankful for their contributions in terms of both knowledge and funding! Please go and see and hear about their products, they really are quite amazing and interesting. And they deserve the exposure and attention as a token of appreciation!

The conference has been organised in a spirit of democratisation of scientific knowledge and of collaboration and social interaction. This is exemplified within the organising committee, which is a collaboration between four Danish research environments including many of the leading Danish researchers in the field. By doing so, we have used the opportunity of this conference to model what we hope you will experience as the spirit of the conference; democratisation of scientific knowledge, collaboration and social interaction. We hope you will enjoy it!

Best wishes,  
The organizing committee



**Kim Mathiasen, PhD**  
*Head of scientific committee*

Research Psychologist, Dept. of  
Affective Disorders, Aarhus  
University Hospital  
[kimmat@rm.dk](mailto:kimmat@rm.dk)



**Katrine Ingeman Beck, PhD  
student**  
*Local organizing committee*

Department of Child and  
Adolescent Psychiatry, Aarhus  
University Hospital  
[katbec@rm.dk](mailto:katbec@rm.dk)



**Charlotte Mühlmann, PhD Student**  
*Head of local organizing committee,  
fun & games*

Danish Research Institute for Suicide  
Prevention  
[Charlotte.muehlmann@regionh.dk](mailto:Charlotte.muehlmann@regionh.dk)



**Nicolai Ladegaard, PhD**  
*Sponsor manager*

Aarhus University Psychiatric  
Hospital  
[nicolai.ladegaard@ps.rm.dk](mailto:nicolai.ladegaard@ps.rm.dk)



**Robin Kok, PhD**  
*Scientific committee, Twitter guru,  
closet rockstar*

Assistant professor of eHealth  
University of Southern Denmark &  
Centre for Innovative Medical  
Technologies, OUH.  
[rkok@health.sdu.dk](mailto:rkok@health.sdu.dk) / @robinnkok



**Nicolaj Knudsen**  
*Webmaster and dance workshop  
teacher*

Web and software developer  
Research Clinic for Functional  
Disorders and Psychosomatics,  
Aarhus University Hospital  
[nicokn@rm.dk](mailto:nicokn@rm.dk)

## A word from our sponsors



### SilverCloud Health - the world's leading digital mental health company

**Enabling healthcare organisations to deliver clinically validated digital therapeutic care, that improves outcomes, increases access & scale while reducing costs.**

SilverCloud Health's multi-award-winning digital mental health platform is a result of over 16 years of clinical research with leading academic institutions. Today, SilverCloud is being used by over 240 organisations globally to meet the mental health needs of their end users/patients. The Platform has been deeply validated working with global experts, through full randomised control trials as well as real world data from over 250,000 SilverCloud end users. The platform continues to lead the industry with its effectiveness, engagement, and range of clinical programs covering the spectrum of mental health needs. SilverCloud holds ISO 27001 security certification and ensures compliance with security and privacy standards of HIPAA and GDPR. In addition, SilverCloud retains a CE Mark, ISO13485 Medical Device Designation as well as FDA roadmap.



Monsenso is an innovative Copenhagen-based technology company that offers a comprehensive mHealth solution to optimise the treatment of mental disorders. Our mission is to assist healthcare providers, researchers, and individuals in coping with and overcoming the burden of mental illness.

Our solution provides a detailed overview of the patient's mental health through the automatic collection of behavioral data and encouraging routine self-monitoring and we embed care plans, tools and CBT in the patient app as well. The solution is available in 6 languages, used in 8 countries to support treatment of depression, bipolar, anxiety, schizophrenia, borderline personality disorder, OCD, addiction and bodily distress syndrome.

Our team is committed to developing effective solutions that fit seamlessly within the lives of individuals, to increase the quality and efficacy of their treatment.

We engage in numerous research projects including projects like ECoWeB, R-LiNK, RADMIS, ENTER (mDiary study and Anxiety Monitoring Study), BIO, Momentum, Monarcall, Monarca, SAFEII, SAFE, Tailor and WellCO.

To learn more, please visit [www.monsenso.com](http://www.monsenso.com) or drop by our stand at esrii ;-)



## Howdy – a Measurement-based Care solution

Meet us at esri 2019 (booth 3) to learn more about HOWDY, our data and how we potentially CAN work together.

### Scientific Pilot Study

In the article *"The Reliable Change Index (RCI) of the WHO-5 in primary prevention of mental disorders. A measurement-based pilot study in positive psychiatry"* Professor Per Bech published a scientific pilot study based on Howdy data in Nordic Journal of Psychiatry (volume 72, 2018). The conclusion of the measurement-based pilot study was, that the repeatedly WHO-5 ratings identified a group of persons with a clinically reliable change in WHO-5 and a clinically significant improvement after a brief psychological intervention.

### Background

Worklife Barometer started in 2014 with a mission to break the growing stress curve through adapting a measurement-based care mindset. In oppose to the normal workplace assessments that fail to provide companies with the means and opportunities to intervene and solve potential problems before they manifest into issues like sick leave, our determination was to ask validated questions in a high frequency app and regularly report useful data back to the company, which they could subsequently act upon.

In our research, we discovered WHO-5 - a highly validated questionnaire for the identification of wellbeing. The model was developed by Danish Professor Per Bech and first presented in 1998. We built this model into an app linked together with a business psychologist response team, who would contact those employees who either scored very low or decreased significantly in their measurements. In the collected scientific data, we saw that people were frequently very slow to act. Therefore, we decided that the response team should be activated proactively – initiate contact and call the person up without them asking for it, rather than retroactively. We let the data/behavior determine the reaction.

There are approximately 14,000 users on the solution distributed on approximately 70 companies in Denmark and Sweden. Out of 4,500 responses in our user surveys, 1.7% reported that they have most likely avoided sick leave due to Howdy. A further 21.9% say that the use of Howdy has led them to talk to their manager about trivial problems or concerns.



Centre for Telepsychiatry

## Centre for Telepsychiatry

The Centre for Telepsychiatry is a research and development department of the Mental Health Services of Southern Denmark. It hosts multiple teams working with development and implementation, research on e-Mental Health, and the national iCBT clinic Internetpsykiatrien. The Centre for Telepsychiatry is the first dedicated research and development centre for e-Mental Health in the Danish health care sector.



## Aarhus University Hospital

The Department of Depression and Anxiety at Aarhus University Hospital is a large department treating more than 6,500 unique patients per year for affective, anxious, and personality disorders. Additionally, it houses a research unit, which has recently launched a strategy on research in e-Mental health for intensifying focus and investment in the field.



**Mental Health  
Services**

## Psychiatric Centre Copenhagen

Psychiatric Centre Copenhagen is the biggest mental health centre in Denmark and a part of the Capital Regions psychiatry. The psychiatric centre has five psychiatric research departments that over the last couple of years have initiated several projects investigating the effect of Virtual Reality, Internet-based therapy, and smartphone-based monitoring and treatment.



# Table of Contents

<b>Welcome to 6th Scientific Meeting of the esrii</b>	<b>2</b>
<b>A word from our sponsors</b>	<b>3</b>
SilverCloud Health - the world's leading digital mental health company	3
Howdy – a Measurement-based Care solution	4
Centre for Telepsychiatry	4
Aarhus University Hospital	4
Psychiatric Centre Copenhagen	5
<b>Table of Contents</b>	<b>6</b>
<b>Practical information</b>	<b>7</b>
Venue	7
Internet access	8
Twitter information	8
<b>About the esrii</b>	<b>9</b>
What is the esrii?	9
How do I participate?	9
Previous conferences	9
Contact the esrii:	9
<b>Programme</b>	<b>10</b>
Day 1, September 5th, 2019	10
Day 2, September 6th, 2019	12
<b>Poster Plan</b>	<b>15</b>
Day 1, September 5th, 2019	15
Day 2, September 6th, 2019	17
<b>Social events</b>	<b>20</b>
Welcome to Copenhagen!	20
Staying longer?	20
<b>Keynotes</b>	<b>21</b>
<b>Superspot presentation</b>	<b>22</b>
<b>DigiECR</b>	<b>22</b>
<b>Oral Presentations</b>	<b>24</b>
<b>Poster Presentations</b>	<b>40</b>
<b>Tech Demonstrations</b>	<b>81</b>
<b>Author Index</b>	<b>85</b>

# Practical information

## Venue

The venue is the hospital 'Rigshospitalet', which is the most specialised hospital in country. It is situated at:

Rigshospitalet  
Blegdamsvej 9  
2100 København (Copenhagen)



## Internet access

1. Choose 'RegHGaest' under wifi networks on your mobile, pc or tablet
2. Open up a browser (e.g. Chrome or Safari)
3. Enter your information and log on

## Twitter information

Follow @ESRII2019CPH on Twitter and please use the hashtag #ESRII2019 to maximise exposure!



# About the esrii



## What is the esrii?

The European Society for Research on Internet Interventions (esrii) is a non-profit organization committed to advancing the scientific approach to studying eHealth interventions. esrii is a group of researchers, clinicians and policy experts whose mission is to foster excellence in evidence-based eHealth interventions targeting behavioral and mental health. eHealth interventions comprise existing and emerging technologies, including the Internet, mobile devices, digital gaming, virtual reality, remote sensing and robotics.

## How do I participate?

Join the esrii! There are several benefits – and no costs!

Sign up for free on the esrii website: [www.esrii.org](http://www.esrii.org).

## Previous conferences

- 2018 – Dublin, Ireland: 19-20 April
- 2016 – Bergen, Norway: 22-23 September
- 2015 – Warsaw, Poland: 17-18 September
- 2013 – Linköping, Sweden: 3-4 October
- 2012 – Lüneburg, Germany: 30-31 May (founding meeting)

## Contact the esrii:

Esrii, c/o Professor Per Carlbring  
Department of Psychology  
Stockholm University  
Sweden  
[per@carlbring.se](mailto:per@carlbring.se)

# Programme

# Day 1, September 5th, 2019



For an up-to-date programme of day 1, go to [www.esrii2019.org](http://www.esrii2019.org) or scan this QR code:

08:40-09:40	Registration + morning coffee (forpladsen)							
09:40-10:00	Plenary opening (auditorium 1)							
10:00-10:40	keynote 1 (auditorium 1): Gerhard Andersson: Past, present and Future							
10:40-11:20	Coffee, posters 1 and tech demonstrations 1 (forpladsen)							
	Track 1 (auditorium 1)				Track 2 (auditorium 2)			
11:20-13:00	GLOBAL HEALTH	163	Jonas Eimontas	Predictors of dropout in modular internet-based self-help intervention for adjustment disorder	METHODOLOGY	59	Nils Isacsson	Learn from our history – the use of machine learning to predict treatment outcome for Internet-based Cognitive Behavioural Therapy
		85	Jinane Abi Ramia	Results and lessons learned from testing an e-mental health intervention in a low resource setting, Lebanon: a feasibility randomized controlled trial of Step-by-Step		75	Erik Forsell	Optimizing prediction of treatment failure: a deconstruction and enhancement of an algorithm-based classifier to predict treatment failure in Internet delivered Cognitive Behavior Therapy for Insomnia
		68	George Vlaescu	Internet-delivered psychological treatment in various languages – Implementation and technical challenges		92	Viktor Kaldo	The role of ICBT in advancing from Stepped Care to Accelerated Care through the use of Machine Learning-Driven Patient-Treatment Matching and Adaptive Treatment Strategies
		147	Claudia Buntrock	(Cost-)effectiveness of internet-based (un-)guided self-help for employees with risky drinking		17	Raphael Schuster	Effects of intense assessment on statistical power in randomized controlled trials: Informed simulation study on depression
		178	Magnus Johansson	Web-based therapy vs. face-to-face therapy for alcohol dependence		26	Amit Baumeister	Is there a trial bias impacting user engagement in un-guided interventions? A systematic comparison between two sets of data
13:00-13:50	Lunch and tech demonstrations 1 (forpladsen) + esrii board meeting (auditorium 2)							

	Track 1 (auditorium 1)				Track 2 (auditorium 2)			
13:50-15:30	MOOD & SUICIDE	32	Derek de Beurs	Modelling suicide ideation from beep to beep: Application of network analysis to ecological momentary assessment data	IAPT (INCREASING ACCESS TO PSYCHOLOGICAL THERAPIES)	112	Derek Richards	Effectiveness of internet-delivered interventions for depression and anxiety disorders in the Improving Access to Psychological Therapies. Results from a randomised control trial
		27	Charlotte Mühlmann	The Self-help Online against Suicidal Thoughts (SOS) Trial – results from a Danish randomized controlled trial		113	Matthew Franklin	Cost-Effectiveness of internet-delivered interventions for depression and anxiety disorders in the Improving Access to Psychological Therapies. Results from a randomised control trial
		54	Eva De Jaegere	Think Life - A randomised controlled trial of an unguided web-based intervention for the treatment of suicidal ideation		10	Jacinta Jardine	The therapeutic experience of iCBT: A qualitative analysis of patient feedback in a large-scale RCT
		39	Caroline Oehler	Efficacy of an internet-based self-management intervention for depression or dysthymia –an RCT using an active control condition to control for expectancy effects		150	Jorge Palacios	Trajectories of depression and anxiety during and after delivery of an online, supported CBT intervention
		65	Martin Kraepelien	A battery of very brief disorder-specific scales for use as a weekly measurement in transdiagnostic and individually tailored treatments		131	Angel Enrique	Leveraging iCBT as a frontline intervention at step 3 of IAPT for individuals with severe symptoms of depression and anxiety
15:30-16:10	Coffee, posters 2 and tech demonstrations 1 (forpladsen)							
16:10-16:50	keynote 2 (auditorium 1) Heleen Riper: On the road to objective markers for mental health: digitomics and digital phenotyping							
16:50-17:00	Day 1 closing (auditorium 1)							
SOCIAL EVENT								
17:20	Historic city-walk with Kim			We will meet at the main entrance of the venue. From here we will walk from the hospital through what was the old city embarkments, learn about the historic reason behind the quarter names, see one of the old kings leisure castles now engulfed by the city, the queens castle, see where the English fleet bombarded Copenhagen as part of the napoleon wars and more. The full walk is 4.5 km and will take approximately 1h45m. There is an inbuilt shortcut cutting the route to 3km and approximately 1h. The walk				
19:00-19:30	People can meet for dinner at the bridge street kitchen around seven on Thursday.			<a href="https://thebridgestreetkitchen.com/">https://thebridgestreetkitchen.com/</a> Strandgade 95 1401 København K ends in Nyhavn.				

## Day 2, September 6th, 2019



For an up-to-date programme of day 2, go to [www.esrii2019.org](http://www.esrii2019.org) or scan this QR code:

08:40-09:40	Registration + morning coffee (forpladsen)								
09:40-10:00	Superspot plenary presentation (auditorium 1)								
10:00-10:40	Keynote 3: Alexander Rozental: Negative effects of Internet-based interventions (auditorium 1)								
10:40-11:20	Coffee, posters 3 and tech demonstrations 2 (forpladsen)								
	Track 1 (auditorium 1)					Track 2 (PCK auditorium)			
11:20-13:00	PRACTITIONERS AND ORGANISATIONS' VIEWS	78	Cristina Mendes Santos	Portrait of Portuguese psychologists' attitudes toward and frequency of use of internet-delivered interventions: an exploratory cross-sectional study	SPECIFIC PATIENT GROUPS	53	Anton Käll	Guided self-help for loneliness – A randomized controlled trial	
		167	Eva Van Assche	What do mental healthcare organizations think about implementing e-mental health? An implementation study of blended depression treatment with Moodbuster		11	Susanne S. Pedersen	eMindYourHeart - Internet-based treatment of depression and anxiety in patients with ischemic heart disease	
		160	Annet Kleiboer	European Comparative Effectiveness on Internet-based Depression Treatment (E-COMPARED)		169	Barbara Nacke	Recruiting women to an online program to prevent eating disorders: first insights on reach from a dissemination study	
		72	Ruth Crowther	Health Practitioner Awareness and Use of Digital Mental Health in Australia		119	Ángel C. Pinto-Bruno	iSupport: online support program for unpaid carers of people with dementia. Adaptation to the Dutch cultural context and RCT preliminary results.	
		158	Tom Van Daele	Digital psychological interventions: Recommendations for practice by the EFPA TF on E-Health		162	Ewelina Smoktunowicz	Med-Stress: Resource-Oriented Internet Intervention Reduces Job Stress and Burnout Among Medical Professionals.	
13:00-13:50	Lunch and tech demonstrations 2 (forpladsen)								

	Track 1 (auditorium 1)				Track 2 (PCK auditorium)				
13:50-15:30	EHEALTH ROUTINE CARE	IN	43	Rikke Nørgaard Elster	User experiences of ICBT in routine care: a qualitative study	CHILDREN, YOUTH AND PARENTING	170	Johannes Verner Olsen	eHealth Interventions for Children with Autism Spectrum Disorders: Cost-effective, Easy-to-use, and Fun
			171	Anne Etzelmueller	What can we learn for iCBT interventions in routine care? Reporting on intervention's components, effectiveness and implementation		55	Bart Witvrouwen	A prototype of a serious game aimed at improving mental health in adolescents: Development and evaluation
			154	Ingrid Titzler	Hindering and facilitating factors for the implementation of blended psychotherapy in secondary care: A qualitative study of therapists' perspective in Switzerland		36	Martina Nord	Therapist-supported internet-delivered cognitive behavioural therapy versus internet-delivered support and counseling for youth with social anxiety disorder: a randomized controlled trial
			16	Raphael Schuster	Effectiveness of adding an Internet intervention (Deprexis) for depression to routine outpatient psychotherapy: Subgroup Analysis of the Evident Trial		64	Matilda Berg	Guided internet-based Cognitive Behavioural Therapy for Adolescents With Anxiety – A Factorial Design Study.
			35	Tine Nordgreen	Guided Internet-based treatment for depression in routine care		120	Andre Sourander	Digitally delivered parenting programs in randomized controlled study designs
15:30-16:10	Coffee, posters 4 and tech demonstrations 2 (forpladsen)								
16:10-16:50	keynote 4 (auditorium 1) Nick Titov: Lessons in Delivering Digital Mental Health Services: Ten things we learned the hard way								
16:50-17:00	Day 2 closing (auditorium 1) - including practical information about this afternoon and evening.								

## SOCIAL EVENTS

17:30 - 18:30	After the conference, we will all go to Fælledparken, located right next to Rigshospitalet. We will bring some skateboards and it will be possible to try out some cool tricks on the skatepark. There will also be plenty of hula hoops and if anybody likes to kick a ball, there will be free beers for anyone who can score a goal on Katrine from the conference committee!
19:30	<a href="https://thebridgestreetkitchen.com/">https://thebridgestreetkitchen.com/</a> People can meet for dinner at the bridge street kitchen at seven on Thursday. Strandgade 95 1401 København K
21:00-????	esrii Self-catered party (pay your own drinks. Støberiet, Blågård's Pl. 5 - <a href="https://goo.gl/maps/ZrzkmUtg1S2evXVaA">https://goo.gl/maps/ZrzkmUtg1S2evXVaA</a> )



	<p>The conference party will take place at Støberiet, Blågård's Plads 5. Wear your best party outfit and be ready to dance like nobody's watching to the tunes from the best DJ in Copenhagen!</p> <p>The party starts at nine so come early and get sweaty with us! No registration is needed but please bring your conference badge for the door.</p>
--	---

# Poster Plan

Day 1, September 5th, 2019

Poster board number (ID)	Submitting author	Poster title
1	Naim Fanaj	ImpleMentAll as first internet intervention in one LMI country – Kosovo case.
2	Ugnė Paluckaitė	The Importance of Injunctive and Descriptive Peer Norms on Adolescents' Photo Disclosure on Social Networking Sites
6	Katrin Schoenenberg	Predicting the acceptance of participating in iCBT for body dysmorphic disorder.
7	Severin Hennemann	Effectiveness, acceptability, and safety of Internet-delivered psychological therapies for somatoform disorders and functional somatic syndromes: a narrative overview and recommendations for future research
9	Eleanor Bailey	Feasibility trial of a moderated online social therapy intervention with young people experiencing suicidal ideation (the Affinity project)
13	Soledad Quero	Development of an internet Attachment-Based Compassion Therapy (iABCT)
14	Bláithín O'Grady	Promoting healthy adjustment following major orthopaedic surgery: Evaluation of iCanCope PostOp Smartphone Application.
18	Selin Akkol-Solakoglu	Internet-delivered cognitive behavioural therapy intervention protocol for psychological distress in women with breast cancer
19	Elisabeth Kohls	Efficacy and cost-effectiveness of two online interventions for children and adolescents at risk for depression (E.motion RCT): Study design, recruitment status and analysis of reason for not participating in the trial
20	Jeanette Wopperer	Exploring the usefulness of testimonials as a tool to improve the acceptance of e-mental health interventions among university students: preliminary results of a pilot RCT.
21	Natalie Berry	Recommendations for the implementation of digital tools designed for the prevention, assessment and management of severe mental health problems: service user and staff perspectives.
23	Georgina Cardenas-Lopez	Online counseling for female Mexican immigrant victims of domestic violence in the United States
24	Cintia Tur Domenech	An Internet-based Self-Applied Treatment Program for Prolonged Grief Disorder (PGD): Study Protocol for an Open Clinical Trial
25	Tobias Vitger	The Momentum Trial: The efficacy of using a smartphone application to promote patient activation and support shared decision making in people with schizophrenia.
28	Laura O'Connor	The development of an internet-delivered Acceptance and Commitment Therapy (ACT) intervention for health related quality of life among adults with multimorbidity with chronic pain
30	Soledad Quero	Patterns of use of the exposure scenarios of NO-FEAR Airlines: An Internet-based Exposure treatment for Flying Phobia
29	Soledad Quero	The Efficacy of Psychological Interventions for Grief Disorders: Study protocol of a Comprehensive Meta-analysis
33	Lasse Sander	Quality And Use Of APPs In PTSD Treatment
34	Lasse Sander	Effectiveness of Internet-Based Self-Help Interventions for Suicide Prevention: A Systematic Review and Meta-Analysis

37	Stephanie Haugh	An evaluation of psychotherapeutic interventions delivered online and in person for chronic pain: a systematic review and network meta-analysis
38	Joanna Milward	Optimising engagement with app-based alcohol interventions: Results from a randomised controlled trial evaluation of the BRANCH app targeting harmful drinking in young adults
41	Anna Janßen	Implementation and utilization of blended counseling online-modules in a psychotherapeutic counseling center for students
42	Juliane Schmidt-Hantke	Training on the Web: A feasibility pilot of a web-based training for health professionals working with patients with eating disorders.
44	Kristina Aspvall	Stepped care internet-delivered versus face-to-face cognitive behavioral therapy for pediatric obsessive-compulsive disorder
46	Esben Skov Jensen	Reducing coercion in in-patient psychiatry using Virtual Reality: A pilot project evaluation
49	Sonia Mor	The efficacy of Internet-delivered interventions for Phobic Disorders: Study protocol for a systematic review
50	Karina Saruhanjan	Efficacy of an internet intervention for internet use disorder: preliminary results of a randomized controlled trial
51	Fabiana Monteiro	Research protocol for a randomized controlled trial evaluating the efficacy of Be a Mom in promoting the mental health of Portuguese postpartum women
52	Ieva Biliunaite	Development of ICBT for concerned caregivers in Lithuania
56	Angel Enrique	Internet-delivered CBT intervention (Space for Sleep) for sleep disorder: a pilot trial
57	M <sup>a</sup> Dolores Vara	Post-module analyses of a low-intensity Internet-based intervention focused on the promotion of positive affect for the treatment of depression in Primary Care
58	Bram van der Boom	Online group therapy - a scoping review.
62	Maria Andersen	The involvement of significant others in guided Internet-based cognitive behavioural therapy
63	Mikkel Berg Bagger Jensen	End-users experience with the mDiary application in DBT treatment
67	Dorothee Bentz	Stand-alone Virtual Reality Exposure App to treat fear of heights: a randomized-controlled trial
69	Mette Marie Åbom	National partnership for mental health in the workplace
70	Anne-Claire Leterme	Web-based stress management and telemedicine : the SerenEcoach project
71	Lars Clemmensen	Virtual Reality Exposure Therapy for Social Anxiety Disorder
73	Johanna Boettcher	Dealing with difficult emotions: mediators of change in a transdiagnostic, Internet-based treatment
74	Eva Rames Nissen	Internet-delivered Mindfulness-Based Cognitive Therapy (iMBCT) for anxiety and depression in breast and prostate cancer survivors - a randomized controlled trial
76	Pinelopi Konstantinou	Wearable devices vs. Stationary equipment: Similar or different psychophysiological signals?
79	Maria Karekla	Evaluation of a Brief Avatar-Guided ACT-based Intervention for Chronic Pain Management
80	Maria Karekla	An Avatar-led Intervention Promotes Smoking Cessation in Young Adults: A Pilot Randomized Clinical Trial
81	Yagmur Amanvermez	Guided Internet-based stress management intervention for international students: A pilot study protocol
82	Tove Wahlund	Feasibility and user experiences of BIP Worry - an online intervention for adolescents with excessive worry
83	Anna Rogala	New in Town—Mobile-Based Intervention for Migrants: Study Protocol for a Randomized Controlled Trial
84	Bianka Vollert	Adherence to an Internet-based prevention program for women at risk for anorexia nervosa (StudentBodies-AN)

86	Madeleine Irish	The views and attitudes towards the PLUS programme: a transdiagnostic, trait-focused, web-based prevention programme for university students.
87	Isaac Moshe	Three decades of Internet-based Interventions for the Treatment of Depression: A Systematic Review and Meta-analysis
88	Carmen Schaeuffele	A transdiagnostic guided internet-based intervention for the emotional disorders: Efficacy, strengths and limitations
89	Stephen F Austin	IMPACHS - IMProving Availability & Cost-effectiveness of mental Healthcare for Schizophrenia through mHealth" The quantitative and qualitative evaluation of a mobile application for psychosis
91	Chani Nuij	Feasibility of smartphone apps as add-ons to regular treatment of suicidal patients
94	Desiree Colombo	Can an Ecological Momentary Assessment for Emotion Regulation be also a Therapeutic Tool?
95	Ania Zubala	Art therapy in the Scottish Highlands: exploring technologies to connect therapists and clients living remotely.

## Day 2, September 6th, 2019

Poster board number (ID)	Submitting author	Poster title
99	Marlene Sousa	A blended cognitive-behavioral treatment for depression based on Moodbuster: A pilot study
100	Gwendolyn Mayer	SELPASS: Checking the functionality, practicality and acceptance of an app against depression
101	Marian Martínez Sanchis	Comparing adherence and client's experience of an online program for the prevention of common mental disorders (ICare Prevent): a qualitative study.
102	Katja Böhme	Guided CBT-based internet intervention (iSOMA) for multiple somatic symptoms: study design and feasibility of a RCT in university students
103	Araceli Palma Gomez	CORE: Usability and acceptance of a self-applied online protocol for the prevention of emotional disorders and promotion of resilience in university students: opinion of users and clinic psychologists.
104	Araceli Palma Gomez	CORE: An Internet self-applied program to promote resilience and coping skills in university students in three Spanish-speaking countries
105	Laura Díaz Sanahuja	Enhancing stimulus control in the treatment of gambling disorder using location-based technologies.
106	Amanda Díaz-García	The inclusion of a positive affect component in a transdiagnostic Internet-based treatment for emotional disorders: results throughout the intervention process
108	Caroline van der Velde	I-GENDO – a individualized gender-sensitive mHealth intervention for overweight and obesity
109	Stefanie Schroeder	Using mental health mHealth interventions: What predicts compliance?
110	Eleanor Bailey	Ethical issues and practical barriers in internet-based suicide prevention research
115	Tom Van Daele	Exploring the potential of augmented reality as a novel tool for animal phobia treatment
116	Kiona K. Weisel	User experience of an individually tailored internet intervention for anxiety disorders – a mixed methods approach

117	Emily Eisner	Clinical and demographic predictors of engagement with a weekly symptom monitoring app by individuals with psychosis during a six month longitudinal feasibility study
118	Emily Eisner	ExPRESS-ing my symptoms: service user experiences of using a symptom monitoring app for six months
121	Vanessa Yim	Participants' experiences of an online guided self-help programme for bulimic-type eating disorders - A process study from a multi-site RCT
122	Trine T. Holmberg	Development and implementation of an app for supporting anxiety treatment in at outpatient setting - a qualitative investigation
123	Rasmus Thastum	Zero Self-Harm – a mobile phone application to reduce non-suicidal self-injury: a superiority randomized clinical trial
124	Gustav Bøg Petersen	Usability guidelines for developing and evaluating web-based eHealth interventions: Establishing a practical framework
126	Kate Lawler	A qualitative study of dropout from an internet-delivered CBT intervention for adults with symptoms of depression and anxiety
127	Kristine Tarp	Lessons Learned from the BLEND-A Study Pilot Phase
128	Dr Rhys Bevan Jones	Developing and evaluating 'MoodHwb', a Web-based programme for adolescent depression
129	Leah Bührmann	Measurement Invariance Analysis of an Instrument Assessing Implementation Success of Complex Interventions Across Healthcare Settings
130	Angel Enrique	An internet-based self-management program for Bipolar Disorder in mental health services in Ireland. Results from a feasibility trial
132	Matthias Domhardt	Mediators and mechanisms of change in internet- and mobile-based interventions for depression: A systematic review
133	Angel Enrique	An internet-delivered intervention for resilience with college students: Results from a pilot randomised controlled trial.
134	Johanna Freund	Effectiveness of Tailored Implementation of Internet-based Cognitive Behavioural Therapy (iCBT) in Routine Practice: Study Protocol of the Trial Site GET.ON as Part of the EU-project ImpleMentAll (IMA)
137	Mia Beck Lichtenstein	Internet-based Cognitive Behavior Therapy for Binge Eating Disorder (i-BED)
141	Daniel Duffy	An illustration of the implementation of randomised control trial procedures in a naturalistic setting.
142	Simon Farrell	How durable is the effect of iCBT for depression and anxiety? Remission and relapse in a longitudinal study
143	Sharon Chi Tak Lee	IAPT Integrated Care - iCBT for Comorbid Depression and Anxiety in People with Long-term Conditions
148	Ewa Makowska-Tłomak	Psychological internet intervention aimed to coping with occupational stress during digital transformation in organization: protocol for a pilot study
151	Jessica Navarro	Testing whether the physical appearance of the avatars evokes concepts related to physical activity practice
152	Philip Lindner	Online therapist-guided CBT for gambling disorder within regular addiction care: Protocols for a pilot trial and a three-armed randomized superiority and non-inferiority trial
155	Anna-Carlotta Zarski	Together Not Separate - Transdiagnostic Tailored Internet Intervention for Depression and Comorbid Anxiety: 8-Week Efficacy of a Randomized Controlled Trial
159	Natalie Berry	Collaboration not consultation: Lessons learned from the pursuit of co-production in digital mental health trials.
161	Kiona K. Weisel	Study design of a mobile-based intervention with telecoaching (SmartAssistEntz) as aftercare for Alcohol Use Disorder
164	Magdalena Lesnierowska	Who is in and Who is Out: Dropout Analysis for the Med-Stress Internet Intervention for Medical Professionals.
166	Jelena Lubenko	MePlusMe online support system for HE students: Feasibility study results.



<b>172</b>	Mieke Schulte	The Challenges of a Digital Society - A Shared Response by the Dutch Universities
<b>173</b>	Mieke Schulte	Effectiveness of E-health interventions on improving adherence to treatments and health behaviors for patients with COPD
<b>174</b>	Felix Bolinski	Student mental health and how to improve it! Results of the Caring Universities project
<b>175</b>	Fredrik Enoksson	Exploring the constructs usefulness and ease of use for an ICBT treatment: The case of adolescents with social anxiety disorder
<b>176</b>	Yannik Terhorst	Mobile Health Apps for Pain – a Way to Better Healthcare? A Systematic Review of Quality and Content of Available Pain Apps in Germany
<b>177</b>	Janika Thielecke	Perceived stress and quality of life after a personalized tele-based coaching for agriculturists (TEC-A) - First results from a randomized controlled trial
<b>180</b>	Tarja Korpilahti-Leino	Digitalized cognitive-behavioral intervention for anxiety among school aged children. A randomized controlled study
<b>182</b>	Jette Louise Skovgaard Larsen	A.I and suicide prevention

# Social events

## Welcome to Copenhagen!

Denmark's capital city is a popular tourist destination, and the esrii local organising committee has prepared several informal social events to relax and mingle with your fellow conference delegates and enjoy our beautiful capital city. Registration is not required for any of these events.

### Thursday, 5<sup>th</sup> of September

#### Event 1: City walk (approx. 17:30)

After the conference ends on Thursday, there will be a historic Copenhagen city walk with Kim. We will meet at the main entrance of the venue. The full walk is 4.5 km and will take approximately 1h45m. There is an inbuilt shortcut cutting the route to 3km and approximately 1h. The walk ends in Nyhavn. No registration is necessary - just tag along if you feel like it! It's recommended that you bring an umbrella - the weather can be unpredictable with 50% chance of rain, and 100% chance of fun and interesting historical facts.

#### Event 2: Food market (approx. 19:30)

Everybody who wants to hang out with their fellow conference delegates can join us for food and drinks at the bridge street kitchen next to Nyhavn, [Strandgade 95](#), at around 19.30. The city walk will end close to here.

### Friday, 6<sup>th</sup> of September

#### Event 1: Fun and games in the park (approx. 17:30)

After the conference, we will all go to [Fælledparken](#), located right next to the conference venue.

We will bring some skateboards and it will be possible to [try out some cool tricks on the skatepark](#). For those that like to juggle, there will be plenty of hula hoops and if anybody likes to kick a ball there will be free beers for anyone that can score a goal on Katrine from the conference committee. If you have any juggling gear or skateboards at home, please bring them to Copenhagen!

#### Event 2: Informal ESRII party! (21:00)

The conference party will take place at [Støberiet, Blågård's Plads 5](#). Wear your best party outfit and be ready to dance like nobody's watching, to the tunes from the best DJ in Copenhagen!

The party starts at nine so come early and get sweaty with us! No registration is needed but bring your conference badge for the door.

If you have any funky party decorations that you want to bring, then please do so! We would love the party venue to be full of flags, pennants, LED-lights and glitter!

## Staying longer?

Get inspired at [www.visitcopenhagen.com](http://www.visitcopenhagen.com) to see everything the city has to offer!

# Keynotes

## The field of internet interventions is growing! Time to bring out the umbrellas, but also continue innovation

Gerhard Andersson, Linköping University & Karolinska Institute, Sweden

Internet-delivered cognitive behaviour therapy (ICBT) has existed for 20 years and there are now a large number of controlled trials for a range of problems. I have two aims with this talk. First, I will focus on recent meta-analytic reviews of the literature and present the findings from a brief umbrella review (Andersson et al. In press). In that review we found moderate to large effects reported for panic disorder, social anxiety disorder, generalized anxiety disorder, posttraumatic stress disorder, and major depression. In total we included nine recent meta-analytic reviews for review out of a total of 618 meta-analytic reviews identified using our search terms. In these selected reviews 166 studies were included, including overlap in reviews on similar conditions. We also covered a recent review on transdiagnostic treatments and two on face-to-face versus internet treatment. The growing number of meta-analytic reviews of studies now suggests that ICBT works and can be as effective as face-to-face therapy. My second aim is to provide examples of new studies and approaches. I will cover outcomes of studies using factorial designs, different languages, novel ways to select treatment components and target problems, and finally different ways to provide support. The talk will end with future possible directions in research and practice.

## On the road to objective markers for mental health: digitomics and digital phenotyping

Heleen Riper, Vrije Universiteit Amsterdam, the Netherlands

Depression is of a heterogenous nature and affected individuals may experience changes in affect, cognition, behaviour and brain and body functions. Evidence-based psychotherapeutic, pharmacological and combined treatments are available but these are based on the 'average' patients while it is well known that this doesn't mean that 'one size of treatment' fits all. Insights are growing that the cause of depression and treatment response may be influenced by a complex crosstalk between individual features of the brain, biological and psychological make-up, lifestyle and the environment. Yet, it is still difficult to diagnose and predict whom will benefit from which evidence-based treatment.

Depression is mainly diagnosed on the basis of clinical observations and standardized clinical interviews. However, within a Personalised Medicine approach towards depression (PM-D) 'omics' such as genomics, epigenomics, and pharmacogenomics are assumed to play an important role in improving diagnostic procedures and personalised clinical pathways and are perceived as 'objective' markers. We assume that biological markers alone won't be able to tailor diagnosis and treatment to individual patients or subgroup of patients. We therefore explore the integration of 'digital phenotyping' as part of a personalised medicine approach as well. Digital phenotyping can be defined as the "moment-by-moment quantification of the individual-level human phenotype in situ using data from personal digital devices," in particular smartphones (Onella 2015). Data is obtained most often obtrusively (meaning that the patient is prompted to answer questions such as mood and sleep) and yet to a lesser extent unobtrusively such as passively collecting physical and geographical data, speech or online social media behaviour (which opens the way to apply more 'objective' markers as well). These may be combined with biomarker signatures and may mark in the future distinct 'integrated depression signatures of individuals and/or sub-groups of patients. In their train these may predict treatment response. Realising that digital phenotyping is still in its' infancy Riper will present the conceptual framework surrounding this domain and what it can contribute to a personalised psychotherapeutic approach of depression and what the current challenges are in terms of quality of data, validity of data measurements and meta-data, ethical considerations and how to utilized these data in routine care. She will illustrate this exploration by virtue of the results of a number of innovative research projects she and her colleagues has been involved over the last years.

## Negative effects in Internet-based cognitive behavior therapy – Measuring and reporting deterioration, non-response, and adverse and unwanted events

Alexander Rozental, Karolinska Institute, Stockholm, Sweden

Internet-based cognitive behavior therapy (ICBT) has been shown to be efficacious for a number of psychiatric disorders and somatic conditions, both in clinical trials and routine healthcare. Overall, ICBT has established

itself as an effective and viable alternative to face-to-face treatments. However, while focusing on its benefits, less attention has been given to the potential negative effects, such as deterioration, non-response, and adverse and unwanted events. The present keynote describes some of the most recent findings on the topic. In general, results suggest that 5.8% of patients receiving ICBT fare worse and that 26.8% are classified as non-responders. Predictors of both are discussed, and the methodological limitations of assessing deterioration and non-response will be raised. Furthermore, the use of self-report measures to capture other negative effect will also be addressed, for example the Negative Effects Questionnaire. At present, research using such instruments demonstrates that 50.9% of patients receiving treatment report having experienced events that were adverse or unwanted, for instance new symptoms or feelings of hopelessness. Lastly, the keynote will also focus on some of the issues that need to be tackled in order to move the field forward, such as a better study designs and a coherent way of reporting findings related to negative effects in ICBT.

### **Lessons in Delivering Digital Mental Health Services: Ten things we learned the hard way**

**Nick Titov and Blake Dear, Macquarie University, Australia**

A large number of research trials have demonstrated that psychological interventions can be effectively delivered via the internet. An increasing number of Digital Mental Health Services (DMHS) are now successfully delivering such interventions in routine care to large numbers of consumers. This talk extends this evidence base by describing key lessons learned by two clinical researchers when delivering DMHS in Australia. The ten lessons include learnings at four levels of analysis: Lesson about working with 1) consumers, working with 2) therapists, 3) operating DMHS, and 4) working within healthcare systems. In hindsight, some of the lessons are obvious, but none were apparent when we first launched our DMHS. Key themes include that successful delivery of DMHS require commercial expertise in management, IT, finance and related business processes, skills which are considerably different to those required for conducting clinical trials. Other themes include the complexity of navigating health systems, the need to effectively work with funders and decision makers, the importance of robust systems for training and supervising therapists, and the importance of avoiding hype. We conclude that the benefits of such services for the broader community significantly outweigh the challenges of developing and delivering DMHS.

## **Superspot presentation**

### **Understanding and Improving Mental Health App Engagement: A Deep Dive into User Experience Case Studies**

**Stephanie Allan, University of Glasgow, Scotland**

**Description:** Digital interventions for psychosis are often described to be feasible, but why do people use them? This presentation will describe a small series of case studies embedded within a clinical trial that use both quantitative and qualitative data to theorise complexities that underpin intervention (dis)engagement.

**Bio:** Stephanie Allan is a PhD student at the University of Glasgow, completing a process evaluation within a clinical trial of a digital self-management intervention for psychosis (EMPOWER, ISRCTN99559262).

Contact Stephanie at [Stephanie.Allan@glasgow.ac.uk](mailto:Stephanie.Allan@glasgow.ac.uk) or follow her on Twitter: @eolasinntinn

## **DigiECR**

**The International Network of Early Career Researchers in Digital Mental Health (DigiECR).**



DigiECR is an international network currently being set up by early career researchers to help foster a community of researchers. Using mainly online methods, we aim to promote the importance of working with other ECRs in the field in a supportive and collaborative environment.

**Mission Statement:** To promote networking, collaboration and support for early career researchers in the field of digital mental health.

esrii 2019 is the chosen event for the launch of this network due to the importance this conference places on the promotion of ECR work in digital mental health.

In the short term, members will have the opportunity to be involved in writing blog content, attending and facilitating online journal clubs, promoting ECR research outputs and listing further study, research and job opportunities. In the long-term we aim to secure funding to hold networking events (both online and in-person), create a working group to explore research questions relevant to ECRs and contribute towards future policy and broader discussions in the field of digital mental health.

Membership is free on our website (<https://digiocr.wordpress.com/join/>) and founding members Natalie Berry, Emily Eisner and Steph Allan will be at the conference to answer any questions and take any suggestions for content.

Follow DigiECR on Twitter: @digi\_ecr



# Oral Presentations

In alphabetic order of first name of submitting author

## Is there a trial bias impacting user engagement in un-guided interventions? A systematic comparison between two sets of data

Amit Baumel, University of Haifa | #26

**Objective:** To explore whether study settings (recruitment and assessment procedures) impact user engagement with off-the-shelf unguided e-mental-health-programs, by directly comparing data published in peer-reviewed journals and objective real-world usage data of the same programs.

**Methods:** We conducted a systematic search throughout December 2018 for all apps in Google Play targeting mental health conditions (e.g. depression, anxiety) who have at least 5000 downloads. Using PubMed, PsycINFO, and Google Scholar we then searched for peer-reviewed articles covering the identified apps, and that were published between January 1, 2014 and January 30, 2019. We included data from papers (a) examining the use of the program as a standalone intervention, and (b) reporting a metric of program usage which we could compare to available metrics found in a data-set of real-world program usage. The real-world program usage was obtained from a panel that presents an aggregated non-personal information on user engagement with websites and mobile apps across the world.

**Results:** Altogether, 16 papers with sufficient data (covering 13 different programs) were identified and compared with the panel data. Preliminary analysis revealed that in papers reporting the use of apps in the real-world (without any proactive study procedures) the median difference found between reported data and the objective data-set was 5% – suggesting a sufficient criterion validity for our examination. In studies pro-actively recruiting users with mild levels of symptoms and including pre-post assessment procedures a median of 4.2 times higher usage rate was reported in comparison to the usage of the same program by users who downloaded the app through the app store. Recruitment of users within the moderate to severe range of clinical symptoms and conducting in-person assessment procedures exhibited similar pattern of difference in usage rates. Sensitivity analysis revealed no impact to the year of data gathering.

**Conclusions:** The results suggest that proactive study procedures have a large impact on user engagement with un-guided interventions. It is unclear the extent to which this pattern is due to pro-active recruitment procedures or ongoing assessments that are not embedded within the un-guided programs. By the conference time final results will be presented as well as study limitations and future directions.

## Digitally delivered parenting programs in randomized controlled study designs

Andre Sourander, University of Turku | #179

**Background:** Behavioral and emotional problems in early childhood are a public health concern, as they cause distress in families and may have negative long-term consequences, such as mental health problems, criminality and marginalization in adolescence and adulthood. Good parent-child relationship is an important factor in preventing such negative sequel. Parenting programs have been found to be effective for building this relationship. Digitally delivered programs may overcome the barriers associated with face-to-face interventions, such as stigma, logistic challenges and limited resources.

**Goals:** To develop and evaluate the effects of digital universal and targeted parenting programs in order to strengthen positive parenting and prevent mental health problems at an early stage.

**Methods:** The digital universal parenting program is self-directed, aiming to improve the parent-child relationship. Therefore, the intervention provides positive parenting strategies and guidance for parents of 3-year-old children. The targeted parenting intervention is for preschool children with early onset of disruptive behavior, and includes program in the internet with weekly telephone calls from the family coach. The parenting programs are first assessed by using randomized trials, after which the implementation process is evaluated, and the results are compared with those of the RCT.

**Results:** In the RCT study on the effects of a digitalized targeted parenting program, the intervention group demonstrated significant improvement in parenting skills and externalizing symptoms at 6, 12 and 24 months compared to the education control group. The targeted program has been successfully implemented in primary health care. Currently, we are developing a universal parenting program by following the structure and content of the targeted intervention.

**Conclusions:** With digital parenting interventions, it is possible to increase the accessibility of services. This may facilitate the shift from child welfare and specialist-level treatment to early intervention and prevention. This is significant from the perspectives of human suffering and cost-effectiveness.

### iSupport: online support program for unpaid carers of people with dementia. Adaptation to the Dutch cultural context and RCT preliminary results.

Ángel C. Pinto-Bruno, Vrije Universiteit Amsterdam, the Netherlands | #119

About three-quarters of people with dementia live in their own home, with help from family members and/or other unpaid carers such as friends or neighbours. Often, unpaid carers themselves experience negative consequences, such as stress or burden, or symptoms of depression or anxiety. Research has shown that these consequences can be alleviated by psycho-educational and psychological interventions. Moreover, there are indications that those interventions can be effective when offered online.

In this study we translated and adapted the generic version of iSupport to the Dutch cultural context. iSupport is an online support program based on cognitive behavioural principles, which aims to improve unpaid carers' mental health and coping resources.

The original content of iSupport was developed by the World Health Organization with the collaboration of an international expert panel. This program consists of five main themes divided into 23 lessons. Carers can pick and choose which lessons they want to follow. During the adaptation we changed examples and we only mentioned resources which are valid for The Netherlands. Furthermore, we added an e-coach function to this Dutch version.

A superiority two-arm randomized controlled trial comparing the effects of iSupport with a waiting-list is being carried out in the Netherlands. We aim to include 200 Dutch unpaid carers, above 18 years old, who experience at least some burden, anxiety or depressive symptoms. Those participants assigned to the experimental group will be provided access to the intervention for 3 months. Assessments are done at baseline (t0), 3 months after baseline (post-intervention, t1), and 6 months after baseline (follow-up, t2).

Recruitment started 2 months ago and currently 90 people are included. This high inclusion rate shows the need for online support in this group. At the time the conference we expect to have first results of all 200 people.

### Leveraging iCBT as a frontline intervention at step 3 of IAPT for individuals with severe symptoms of depression and anxiety

Angel Enrique, E-Mental Health Research Group, Trinity College Dublin, Ireland | #131

**Context:** The Improving Access to Psychological Therapies (IAPT) is a stepped-care programme in the UK aimed to treat patients with anxiety and depressive disorders. Internet-delivered cognitive behavioural therapy (iCBT) is usually offered at step 2, as a low-intensity intervention for patients with mild to moderate symptoms. However, iCBT's applicability to more severe patients who require a step 3 high intensity treatment (face to face treatment) is relatively unknown. The current study investigated the potential impact of using iCBT as a prequel to high intensity treatment on outcomes and access rates for individuals with depression and anxiety.

**Methods:** This study utilised a mixed-methods naturalistic design, where patient data was collected on the care pathways at Step 3 IAPT. 124 patients were offered supported iCBT before starting high intensity therapy (HIT). The iCBT intervention included different evidence-based programs for depression and anxiety that were delivered using media-rich interactive content. Measures of depression, anxiety and functional impairment measures were collected at baseline, upon iCBT completion and at discharge timepoints. Therapeutic alliance from a clinician and patient perspective was measured across the iCBT intervention. Access and waiting times data from services were also collected.

**Results:** Results showed that there was a significant decrease in symptoms upon completion of iCBT and HIT interventions, with effect sizes ranging from moderate to large. In fact, around 20% of the sample achieved reliable recovery in advance of starting face-to-face therapy. Therapeutic alliance was found to be established and maintained over the iCBT intervention period from a patient and clinician perspective. Clinicians qualitatively reported the value of iCBT, stating that it is a useful intervention for the waiting period that could potentially reduce the number of face-to-face sessions required by patients.

**Conclusion:** This study illustrates the potential benefit of implementing an iCBT intervention as a prequel to HIT in individuals with severe presentations of depression and anxiety. Results showed that iCBT was a valuable option in regards to waiting time reduction and clinical efficiency. Future investigations into this area are warranted to further validate the potential benefits of incorporating iCBT as a frontline intervention to high-intensity services.

### What can we learn for iCBT interventions in routine care? Reporting on intervention's components, effectiveness and implementation

Anne Etzelmueller, Vrije Universiteit Amsterdam, the Netherlands | #171

**Background:** Internet interventions have been shown to be effective both in randomized-controlled trials and under routine care conditions. What can researchers learn from reports on implemented iCBT services for their own daily practice? Reporting outcomes derived under routine care conditions might not only inform about the interventions under investigation and their effectiveness, but also hint towards successful development, evaluation and implementation – if reported in a comparable, meaningful way.

**Methods:** A literature review identified guided iCBT interventions for the treatment of depression and/or anxiety under routine care conditions. We described and compared intervention components as well as the contexts these interventions were (successfully) implemented to. Furthermore, a literature search was conducted identifying strategies (checklist, guidelines, general publications, etc.) used to report on complex interventions, transfer of innovations from research into

practice and research outcomes. Results have been included into a proposal for the reporting of iCBT interventions in routine care.

**Results:** The analysis of existing literature on iCBT interventions operating in routine care highlights the increasing complexity of described services when they make the step from the controlled research setting into actual health care settings (such as the description of guidance – mode, extend and involved personnel -, tailored approaches and decision processes, safety measures and context factors). This complexity must be considered when describing such interventions and processes in order to assure comparability of studies and the induction of conclusions from these publications. We will give examples of how iCBT interventions can be described in two large multi-context European projects. Following these examples, the reporting of service components (e.g. guidance, involved personnel), context (e.g. health care setting, funding) and outcomes (effectiveness, implementation factors) will be discussed.

**Discussion:** Reporting on interventions under routine care conditions might call for an extension and/or adaptation of existing ways of process and outcome reporting (such as the CONSORT checklist). Different fields of research can provide additional ways of reporting outcomes research on internet interventions can build on.

## European Comparative Effectiveness on Internet-based Depression Treatment (E-COMPARED)

Annet Kleiboer, Vrije Universiteit Amsterdam, the Netherlands | #160

**Background:** Effective, accessible, and affordable depression treatment is of high importance. In 'blended depression treatment', online and face-to-face interventions are integrated into one treatment protocol, reducing the number of face-to-face sessions. The E-COMPARED project examined the clinical effectiveness of 'blended depression treatment' compared to treatment as usual (TAU) on symptoms of depression in people with major depression in 9 European countries. The main hypothesis was that blended cognitive behavioral treatment for major adult depression (bCBT) would be clinically non-inferior (not less effective) but cost-effective when compared to TAU.

**Methods:** a multi-site, two-arm, randomized non-inferiority clinical trial with a cost-effectiveness analysis alongside was performed in 9 European countries (Denmark, France, Germany, Netherlands, Poland, UK, Spain, Sweden, Switzerland). The main inclusion criterion was Major Depressive Disorder as assessed with the M.I.N.I. diagnostic interview. The RCTs were conducted in routine primary and specialized mental health care settings. Blended depression treatment consisted of individual face-to-face CBT and CBT delivered through an Internet-based treatment platform. Duration of the treatment, number of sessions, and platform differed per country (Moodbuster in Netherlands, UK, Germany, France, Poland; Smiling is fun in Spain; Deprexis in Switzerland; Iterapi in Sweden; NoDep in Denmark) as well as treatment-as-usual (Face-to-face psychotherapy in Netherlands, Denmark, Switzerland, UK, Poland, France; treatment by the GP in Spain, Sweden, Germany).

**Results:** We will present the results on the clinical effectiveness at twelve months follow-up (depression symptoms and diagnostic interview for depression). 835 participants were included in the analyses. Overall bCBT showed to be non-inferior to TAU at 3, 6, and 12 months. However, results were dependent on setting (primary versus specialized mental health care) and country.

**Conclusion:** Blended depression treatment seems a good alternative to treatment as usual in primary and specialized mental health care. We currently further develop the Moodbuster platform supported by another European project (eMen) focused on the implementation and upscaling of eMental health.

## Guided self-help for loneliness – A randomized controlled trial

Anton Käll, Linköping University, Sweden | #53

Loneliness has been described as a growing problem in many parts of the world that at a basic level stems from an unwanted discrepancy between the actual and desired social situation. Though often a source of suffering and distress in and of itself, studies have also linked the phenomenon to a wide range of psychiatric and somatic problems. Previous research on interventions targeting loneliness, though scarce, have indicated the potential for psychological treatment to be an efficacious way of helping this population. The current study investigated the efficacy of two nine-week internet-based treatments: one based on cognitive behavioral therapy and one based on interpersonal psychotherapy. Both were compared to a wait-list control group. A total of 116 participants were recruited for the study and randomized to one of the three conditions. Standardized measures of loneliness, depression, social anxiety, quality of life, and worry will be administered at post-treatment and 3-month follow-up and analyzed using a multilevel model framework. The results from the trial will be presented for the first time at esrii 2019.

## Recruiting women to an online program to prevent eating disorders: first insights on reach from a dissemination study

Barbara Nacke, Technische Universität Dresden, Germany | #169

**Introduction:** everyBody is a suite of tailored, online eating disorder (ED) prevention and health promotion interventions targeting different levels of risk for disordered eating and body dissatisfaction and women. In several previous trials the efficacy of everyBody has been evaluated. The current trial focuses on dissemination in the general population. We will analyze the outcome of different recruitment strategies and reach of the interventions, i.e., demographic characteristics of participants.

**Methods:** Recruitment channels included newspapers, TV reports, Facebook ads and health insurance companies promoting the intervention in magazines and online. So far, 3465 women from the general population have been included over a period of 2.5 years with recruitment closing in May 2019.

**Results:** We will present recruitment progress over the span of the study, and measures of reach according to the RE-Aim model, including comparison of characteristics between intervention participants and non-participants, exclusion rates, participation rate for the interventions, drop-out rates for assessments and intervention, and reasons for withdrawal.

**Discussion:** So far, health insurance companies gave positive feedback regarding possible implementation but no binding agreements. We will discuss results from a perspective of implementation efforts and further dissemination of the interventions.

## A prototype of a serious game aimed at improving mental health in adolescents: Development and evaluation

Bart Witvrouwen, VLESP, Ghent University | #55

**Introduction:** In Flanders suicide is the leading cause of death in adolescents aged between 15-19 years old. Almost one in ten adolescents has attempted suicide, and 25% thought about suicide in the past year. A serious game, which improves mental health in adolescents, may be useful as a universal suicide prevention tool.

**Methods:** A prototype, which was called 'Silver', was developed to assess the feasibility of such a game. It had a user-centred and participatory design. Silver focused on one aspect of a serious game for mental health improvement in adolescents, i.e. the recognition and identification of cognitive errors.

A pre-test/post-test design was employed, with a one week intervention phase in which participants were asked to play the game. Participants, aged between 12-16 years, were recruited in schools and child psychiatry units. Outcomes of interest were recognition of cognitive errors, participants' cognitive errors, and usability of the game.

**Results:** 632 adolescents from schools and 16 from child psychiatry units played 'Silver' and completed the assessments. Recognition of cognitive errors increased significantly in both groups and cognitive errors decreased significantly in the adolescents recruited in schools. The participants thought the game helped to recognize cognitive errors. The majority rated the game as beautiful but boring. They agreed to adding extra levels in the game.

**Conclusion:** Findings from the present study suggest that a serious game may be an effective tool to improve mental health in adolescents. The development of a serious game for the improvement of mental health in adolescents, based on the studied prototype, is recommended. It may be an important and innovative tool in the universal prevention of suicide in adolescents. Future research on the effects of the game is warranted.

## Efficacy of an internet-based self-management intervention for depression or dysthymia –an RCT using an active control condition to control for expectancy effects

Caroline Oehler, German Depression Foundation | #39

**Background:** Internet based self-management interventions seem to be an efficient way to complement the treatment of depression. However, evidence for efficacy is derived in big parts based on comparisons to waitlist or treatment as usual controls. Because blinding of patients is not possible, such control conditions are likely not to induce hope and to maybe even have nocebo instead of placebo effects. Therefore, it is difficult to draw conclusions about efficacy from such studies.

**Methods:** The Get.Started trial evaluates the efficacy of the iFightDepression® tool in its' German version in comparison to an active control. A total of 360 patients with mild to moderate depressive symptoms are randomly assigned to one of the two six-week intervention arms. One group worked with iFightDepression®, a CBT based self-management program, while the active control received an online based relaxation training. Guidance by the study assistants and time spent on the intervention was kept parallel for both groups. The primary outcome is change in depressive symptoms (IDS-SR). Guidance, objective and subjective amount of use and changes in perceived quality of life (SF-12) are assessed as secondary outcomes. The analyses were performed applying mixed models, to handle missing data in a longitudinal design.

**Results:** Symptoms of depression, as measured by the IDS-SR, decreased statistically significantly over time in both groups with the group difference not reaching significance. Both groups also reported improved quality of life concerning their mental health, which was statistically significantly more pronounced in the group assigned to the iCBT intervention. The mean amount of guidance per participant was 33.7 minutes over six weeks, focusing on motivational- rather than content support. Nonetheless, the dropout was acceptable (21,7%) and subjective and objective measures indicate that usage of the interventions was high in both groups.

**Discussion:** The iCBT intervention was superior to an active control concerning the quality of life measure but not concerning the depression self-rating (IDS-SR, primary outcome). These results will be discussed in the context of the special methodological aspects of this trial where an active control instead of a waiting list control has been used.

## The Self-help Online against Suicidal Thoughts (SOS) Trial – results from a Danish randomized controlled trial

Charlotte Mühlmann, Danish Research Institute for Suicide Prevention | #27

**Study Objective:** The suicide rate in Denmark has not decreased over recent years, and additional suicide preventive efforts are needed. The aim of the SOS-trial is to examine the effectiveness of a semi-guided Internet-based self-help program in reducing suicidal thoughts.

**Methods and material:** A total of 438 people with suicide thoughts was recruited from the Danish suicide hotline “The Lifeline”, google adwords and psychiatric departments, from September 2016 to September 2018 and randomly allocated to the intervention (N=217) or a waiting list (N=221). The primary outcome is frequency and intensity of suicidal ideation. Secondary outcomes are the participants psychological well-being, suicide attempts, the cost-effectiveness of the intervention and negative effects of the intervention. Follow-ups are conducted at 6 and 32 weeks after inclusion.

The semi-guided self-help intervention is based on a Dutch intervention program developed by professor Ad Kerkhof. It is primarily based on Cognitive Behavioural Therapy and consists of 6 modules that each take a week to complete. The participants receive written guidance and are contacted if they are at high risk of suicide (Beck Scale for Suicidal Ideation >26) or were inactive in the program. The control group was assigned to a waiting list for 32 weeks.

**Results:** The 6-weeks and the 32-weeks outcome data are collected and analysed in the spring of 2019 and presented at the conference. Preliminary baseline data show that around 16% of the participants have severe suicide thoughts (Beck Scale for Suicidal Ideation >26) and around half have previously attempted suicide. A pilot study of the intervention conducted in 2016 showed positive results after 6 weeks and 32 weeks.

**Conclusions:** People with severe suicide thoughts are interested in Internet-based interventions. The intervention will in 2020 be implemented at the Danish Lifeline and provide a supplement to their existing counselling offers.

## (Cost-)effectiveness of internet-based (un-)guided self-help for employees with risky drinking

Claudia Buntrock, Friedrich-Alexander-University Erlangen-Nuremberg | #147

**Background:** Alcohol use is a major risk factor for burden of disease and injury. It is also associated with considerable economic costs including sick leave and reduced productivity at work. Hence, it is crucial to provide effective interventions that are able to reach at-risk individuals in early stages of developing alcohol use disorders. Using the Internet to provide such interventions is currently viewed as a potentially cost-effective way of scaling up preventive interventions.

**Methods:** A 3-arm randomized controlled trial was conducted, in which 434 employees consuming at least 21 (men) / 14 (women) weekly standard units of alcohol (SUA) and scoring  $\geq 8/6$  for men/women on the AUDIT were included. Participants were either randomized to an unguided internet-based intervention (e.g. personalized normative feedback, motivational interviewing, goal setting, problem-solving, emotion regulation; n=146), to the same intervention with additional adherence-focused guidance (n=144), or to a waitlist control condition with unrestricted access to care as usual (n=144). Primary outcome was weekly consumed SUA at post-treatment (6 weeks). Secondary outcomes included SUA after 6 months and general and work-specific mental health measures. An economic evaluation was performed alongside the trial with a time horizon of 6 months. Costs measured from a societal and health care perspective were related to weekly consumed SUA and quality-adjusted life years (QALYs).

**Results:** All treatment groups showed reductions of mean weekly SUA at post-treatment (unguided: -8.0; adherence-focused guidance: -8.5; waitlist control: -3.2). There was no significant difference between the unguided and adherence-focused guided intervention groups ( $p=.32$ ). Participants in the combined intervention groups reported significantly fewer SUA than controls at post-treatment ( $b=-4.85$ , 95% CI=-7.02 - -2.68), which was sustained at 6-month follow-up ( $b=-5.72$ , 95% CI=-7.71 - -3.73). In addition, intervention group participants showed improvements in general and work-related mental health outcomes at post-treatment and 6-month follow-up. Cost-effectiveness analyses are in preparation and will be presented at the conference.

**Discussion:** Internet-based self-help, administered with or without personal guidance, significantly reduced mean weekly alcohol consumption and improved mental health and work-related outcomes in the German working population.

## Portrait of Portuguese psychologists' attitudes toward and frequency of use of internet-delivered interventions: an exploratory cross-sectional study

Cristina Mendes Santos, Linköping University / Public Health Research Center (CISP) - Escola Nacional de Saúde Pública | #78

**Background:** Despite the growing evidence on the efficacy and cost-effectiveness of internet-delivered interventions (iDI) in a wide range of disorders, implementation of such programs in Portugal is virtually non-existent and the knowledge on Portuguese psychologists' use and attitudes towards iDI is scarce.

**Objectives:** This study aimed at exploring Portuguese psychologists' attitudes toward and frequency of use of iDI and identifying potential advantages, disadvantages and challenges in the implementation of such interventions.

**Methods:** An online survey was developed for this purpose considering the previously available literature and disseminated by the Portuguese Psychologists Association to its members.

**Results:** A total of 1077 Psychologists responded to the questionnaire between November 2018 and February 2019. Of these, 37,2% (N=363) were familiar with iDI, 29,6% (N=319) reported using some form of information technology (IT) to



deliver care in the past and 61.7% (N= 787) considers using it in the future. Phone calls (23.8%), SMS (16.1%) and e-mail (16.2%) services were the most used, while guided (1.3%) and unguided (1.5%) internet-delivered structured programs were the least used. 8.7% (N=94) of psychologists reported using videoconference in the past. Considering the advantages of iDI, accessibility (79.9%), convenience (45.7%) and cost-effectiveness (45.5%) were considered the most important. Conversely, ethical concerns (40.7%), patient's IT illiteracy (43.2%) and negative attitudes towards iDI (37%) were appointed as the main limitations. According to respondents, the main challenges to overcome in the implementation of iDI are related to limitations in the implementation of self-help techniques (62.8%), lack of evidence on the efficacy of iDI (62.2%), the adaptation of treatment protocols (61.7%), patient's IT illiteracy (47.9%) and low adherence both from patients (43.3%) and psychologists (40.6) towards such programs. Finally, respondents showed greater acceptability towards blended-interventions (62.9%) (the combination of face-to-face and internet sessions within the same treatment protocol) compared to standalone iDI (18.6%).

**Conclusions:** This study is a contribute to the limited literature on the use and attitudes of Portuguese Psychologists towards iDI. A positive but guarded stance towards iDI was captured in this research. Portuguese Psychologists showed greater acceptability towards blended-interventions compared to standalone iDI.

### Modelling suicide ideation from beep to beep: Application of network analysis to ecological momentary assessment data

Derek de Beurs, Vrije Universiteit Amsterdam, the Netherlands | #32

Real-time monitoring using mobile phones within the field of suicide prevention can help better understand the dynamics of suicidal ideation (SI), even from hour to hour. By applying a class of novel methodological techniques called network analysis to ecological momentary assessment (EMA) data, we quantified and visualized both a temporal and contemporaneous within-persons network and a between persons network. These networks allows us generate hypothesis on the potential causal relations between suicide ideation and several risk factors.

Seventy-four inpatients with a Major depression and SI assessed their momentary SI, thwarted belongingness, perceived burdensomeness, hopelessness, depression, anxiety, and positive affect ten times a day for a period of six days using a mobile phone. A lag-1 temporal network was estimated via multi-level vector autoregression (mlVAR) modelling. Using the covariance matrix of the stationary means, a between subject network was estimated. Finally, a contemporaneous network was presented by visualizing the partial associations between the residuals of temporal and the between subject multilevel models.

The temporal network revealed that SI was only associated with SI and perceived burdensomeness at the previous time point. SI at the previous time point was associated with perceived burdensomeness, hopelessness, depression, and positive affect at the next time point. Within the contemporaneous network, SI was most strongly related to hopelessness, but also to all other variables. Between subject network revealed that patients with higher average SI scores, tended to also present higher average hopelessness scores.

These findings are in line with other studies using ecological momentary assessment. First, suicidal thoughts seem to be reinforcing given that they predict themselves over time. Second, the well-known risk factors for suicide ideation were associated with higher levels of suicide ideation at the moment, but not over time. This indicates that the dynamics of suicide ideation is different than previously assumed.

Network analysis of EMA data extends more traditional multilevel analysis by offering a visualization of the relation between all variables, and an insight on both the within and between subjects effects.

### Effectiveness of internet-delivered interventions for depression and anxiety disorders in the Improving Access to Psychological Therapies. Results from a randomised control trial

Derek Richards, E-mental Health Research Group, Trinity College Dublin and SilverCloud Health | #112

**Context:** Depression and anxiety are common mental health disorders worldwide. The UK's Improving Access to Psychological Therapies (IAPT) programme is part of the National Health Service (NHS) designed to provide a stepped care approach to treat people with anxiety and depressive disorders. Internet-delivered cognitive behavioural therapy (iCBT) is offered as a treatment alternative at step 2 IAPT, low- intensity treatment, for individuals with mild to moderate symptoms of depression and anxiety. The current study evaluates the effectiveness of internet-delivered interventions for symptoms of depression and anxiety disorders in IAPT and explores the maintenance of the effects across a 12-month follow-up period.

**Methods:** A parallel groups randomised control trial: adult users of step 2 services were randomly allocated to iCBT interventions for depression and anxiety disorders, or a waitlist control group. Allocation was based on a primary diagnosis established by the MINI interview and clinical judgement. Thereafter, they were randomised to the intervention or the waitlist group. Randomisation followed a 2:1 ratio. Participants allocated to iCBT group completed the intervention during 8 weeks with support. Primary outcomes were depression (PHQ-9) and anxiety (GAD-7). Assessments were conducted at baseline, during, and at the end of the 8-week treatment and at 3, 6, 9, and 12-month follow-up. MINI interview was also administered at 3-month follow-up.

**Results:** 384 users were randomised to the intervention group (n=256) or the waiting-list group (n=128). 79% of the sample had a diagnosis of anxiety and/or depression based on the MINI. Recruitment is now finished, and 12-month follow-up data is currently being collected, with retention rates being above 70% at this follow-up timepoint. Efficacy of the

treatments will be explored through linear mixed models including all timepoints up to 12-month follow-up. These results will be presented at the conference. Recovery rates will also be calculated.

**Discussion:** This study seeks to evaluate the immediate and long-term effect of internet-delivered interventions for depression and anxiety. The study has the potential to show how iCBT can be scaled in service provision.

### Optimizing prediction of treatment failure: a deconstruction and enhancement of an algorithm-based classifier to predict treatment failure in Internet delivered Cognitive Behavior Therapy for Insomnia

Erik Forsell, Karolinska Institutet, Sweden | #75

**Background:** We have conducted a proof of concept RCT with 251 people with Insomnia for an adaptive treatment strategy, where patients who risk not benefitting from treatment are identified early on and given adapted care to avoid treatment failures. We found support for the concept, but the classification algorithm functioned as a black box, and needs to be evaluated, examined and optimized.

**Methods:** Those 199 patients who were classified, but whose treatment was not altered, will be used to assess the classifier as a whole as well as the 25 separate inputs (predictors) that yielded the classification. The classifier has an automated step (14 predictors) and a clinician-rating step (9 predictors) that will be examined separately to see if the cost of having clinicians rate patients is worth the predictive power. Predictors will be examined both as continuous using multiple regression and as package-classifiers using ROC-analysis and confusion matrix statistics.

**Results:** For example, 23 % of patients were incorrectly classified as not-at-risk of failure (failed despite predicted to succeed) whereas 36 % were incorrectly classified as at-risk or failure (succeeded despite predicted to fail). Area under the curve of the de facto classifier was .675, which is not very high. However, the randomized trial demonstrated significant clinical effects of using the classifier to adapt treatment, demonstrating its relative usefulness.

**Discussion:** A brief summary of the RCT will be given. Results of specific predictors and classifier accuracies of potential alternative versions of the classifier used in the trial will be presented and discussed.

### Think Life - A randomised controlled trial of an unguided web-based intervention for the treatment of suicidal ideation

Eva De Jaegere, Flemish Centre of Expertise in Suicide Prevention, Ghent University, Belgium | #54

**Introduction:** Suicide is a major public health issue, and treatment of suicidal thoughts may contribute to its prevention. Provision of online treatment of suicidal ideation may reduce barriers that suicidal individuals experience in face-to-face treatment. We therefore aimed at evaluating the effectiveness of a web-based intervention targeting a reduction of suicidal ideation.

**Methods and material:** A two-arm, parallel-design, randomised controlled trial was carried out in the general population in Flanders (Belgium). Participants who were  $\geq 18$  years and experienced suicidal ideation were included. The intervention group ( $n = 365$ ) received access to the unguided web-based intervention, and the control group ( $n = 359$ ) was placed on a waitlist. The unguided, online self-help intervention, originally developed in the Netherlands, was adapted to the Flemish context. The intervention, called Think Life, encompasses six modules and is mainly based on Cognitive Behavioural Therapy (CBT). Additionally, it includes elements from Dialectical Behaviour Therapy (DBT), Problem Solving Therapy (PST), and Mindfulness Based Cognitive Therapy (MBCT). Assessments were carried out at baseline, post-test (6 weeks after baseline) and follow-up (12 weeks after baseline).

**Results:** Participants reported high levels of suicidal ideation, depression, hopelessness, worrying, and anxiety at baseline. Compared to the control group, participants in the intervention group experienced a significant decline in suicidal ideation, depression, hopelessness, worrying, and anxiety both at post-test and at follow-up.

**Conclusions:** Our findings suggest that the online self-help intervention was more effective in reducing suicidal ideation and suicide-related symptoms than a waitlist control in a severely affected population. It can fill the gap between crisis help and face-to-face treatment.

### What do mental healthcare organizations think about implementing e-mental health? An implementation study of blended depression treatment with Moodbuster

Eva Van Assche, Thomas More University of Applied Sciences, Belgium | #167

The increasing number of people suffering from mental problems poses great societal challenges. We need new ways of treating people. E-mental health applications have the potential to provide a substantial contribution to conventional treatment. A range of effective and efficient applications exist but still general uptake in mental healthcare remains limited. It is therefore important to focus on the implementation of e-mental health. What are the factors that impede or facilitate implementation?

Within the Interreg NWE eMEN project, we run a Belgian implementation study making use of the e-mental health application, Moodbuster, which is used in addition to regular therapy. The Moodbuster application is a modular web-based platform with a connected smartphone application for mood monitoring.

In the first part of the study, all relevant mental healthcare organisations (i.e., psychiatric hospitals and psychiatric departments of general hospitals) (N=66) were asked by e-mail and phone contact whether they wanted to participate in the implementation study. They completed a questionnaire on their reasons for participation or refusal and attitudes towards technological application in mental healthcare. Up till now, 39 organisations responded to our request. These results showed that a majority of 25 organisations was interested in participation. Lack of time was an important barrier for refusal: 10 out of 14 organisations not willing to participate mentioned this as the reason for non-participation. There were 18 interested organisations that completed the questionnaire. Their attitudes towards technological applications in mental healthcare were generally positive although they wondered whether they would have sufficient time to implement the technology well.

In the second part of the study, two psychiatric hospitals and two psychiatric departments of general hospitals are selected for participation in the implementation study in which the Moodbuster platform will be used in addition to regular therapy for depression for a period of three months.

This Belgian implementation study helps to gain insight in the attitudes of organisations, professionals and patients towards technological applications and helps to reveal which factors promote or hinder large-scale implementation of e-mental health in the mental healthcare sector.

### Med-Stress: Resource-Oriented Internet Intervention Reduces Job Stress and Burnout Among Medical Professionals.

Ewelina Smoktunowicz, SWPS University of Social Sciences and Humanities, Poland | #162

Job stress and burnout are prevalent among medical professionals and have downstream impact on the patients. Thus, there is a need for accessible interventions that would be context-free enough to be applicable across the field. In this study we test four variants of Med-Stress: internet intervention that aims at reducing job stress and burnout through the enhancement of two psychological resources, self-efficacy and perceived social support. These resources can operate individually or sequentially and the latter scenario can take one of two forms. Cultivation hypothesis predicts that self-efficacy comes first and cultivates perceived social support, whereas in line with the enabling hypothesis it is perceived social support that precedes and enables self-efficacy.

Participants were 922 medical professionals (86% women), randomly assigned to one of four study conditions: 1) self-efficacy and perceived support sequential enhancement (experimental condition testing cultivation hypothesis), 2) perceived social support and self-efficacy sequential enhancement (experimental condition testing enabling hypothesis), 3) self-efficacy enhancement (active comparator), and 4) perceived social support enhancement (active comparator). Depending on the study condition, intervention lasted 3 or 6 weeks and posttest assessment was taken right after its completion. Primary outcomes were job stress and job burnout and the secondary one was work engagement. We conducted analyses of covariance on the intention-to-treat sample. We found that condition assignment had a significant effect on job stress,  $F(3,917) = 13.46$ ,  $p < .001$ ,  $\eta^2 = 0.04$ , and job burnout,  $F(3,917) = 5.92$ ,  $p = .001$ ,  $\eta^2 = 0.02$ . Stress and burnout were lower in both experimental conditions than in the active comparator enhancing perceived social support alone. In the case of secondary outcome, work engagement, it decreased in all study conditions from pretest to posttest. These results show that Med-Stress was effective in decreasing job stress and job burnout, in particular, among participants assigned to those conditions in which both psychological resources were targeted. Although we expected work engagement to increase, results of previous studies show that it is not uncommon for engagement to drop right after the intervention and increase over time. We will be able to test this hypothesis with the results of the follow-up at 6 months.

### Internet-delivered psychological treatment in various languages – Implementation and technical challenges

George Vlaescu, Linköping University, Sweden | #68

In the past years there has been a continuous development of services for providing psychological treatment over the internet. Whilst a handful of countries were pioneers in this domain and were developing solutions in their own language, increasing interest is shown in more countries in developing solutions for internet treatment, starting initially with trials within research groups before implementing services on larger scale.

Apart from developing their own platforms – which may take years for a reliable platform, many of the newer research teams choose to use already available platforms and just translate and adapt them to the new contexts – an approach which could be much cheaper and is very fast.

The aim of this presentation is to share our experience of adapting the Swedish Iterapi platform at Linköping University to multiple languages and to be used in different continents.

We will present the process for implementation of a multi-language solution; first we quickly cover design challenges that we have encountered – which we think will help other teams by designing a solution to be adaptable from the beginning, and also how our therapists work and handle the multi-language materials on the platform, while at the same time it is possible to either have all patients to only use one language or handling patients that have different languages. We will also illustrate our working way with screenshots in various languages, including for example the right-to-left writing style.

## **Hindering and facilitating factors for the implementation of blended psychotherapy in secondary care: A qualitative study of therapists' perspective in Switzerland**

Ingrid Titzler, University Erlangen-Nürnberg, Germany | #154

**Introduction:** Blended therapies (BT) combine face-to-face (f2f) sessions with internet-based interventions. The successful implementation of BT in routine care depends on the acceptance and usage of key health care professionals such as therapists. There is limited research about the therapists' perspective on and experiences with BT. The aim of this study is the identification of barriers and facilitators for implementing BT for depression in the Swiss secondary care.

**Methods:** Semi-structured expert interviews were conducted with four Swiss therapists, who incorporated a for BT adapted version of Deprexis as online tool in their f2f-therapy within a RCT (www.e-compared.eu). To identify barriers and facilitators an interview guide based on the theoretical domains framework (TDF) was used. The interviews were audio-recorded, transcribed verbatim and analysed using a qualitative content analysis by two independent coders.

**Results:** The results revealed 15 barriers and 34 facilitators on the levels of 'implementation in the health care system', 'therapeutic factors', 'therapist' and 'patient'. One key barrier 'Diagnosis-specific contraindications' (number of statements, k=13) was stated by all therapists. Other barriers, mentioned by 75% of therapists, were 'CBT-basis restricts therapist user group' (k=7); 'Patients' overstrain and frustration through online part of BT' (k=5) and 'Compliance problems' (k=4). Key facilitators stated by all therapists were 'Added value through extension of f2f-therapy with online modules' (k=16); 'High demand and usefulness of BT' (k=13); 'Increased efficiency through better resource allocation of f2f and online' (k=12); 'Online modules implement psychological interventions very well' (k=11); 'Easy handling of BT for therapists' (k=9). Results will be compared with identified factors perceived by German BT therapists.

**Discussion:** Therapists supported the implementation of BT for depression in Switzerland and reported in line with German therapists more facilitators than barriers. Results indicate the consideration of a wide range of determinants and will be used to derive strategies for future implementation efforts. It will be discussed which learnings can be drawn on a European perspective and which one need country-specific strategies for the implementation in the health care system.

## **The therapeutic experience of iCBT: A qualitative analysis of patient feedback in a large-scale RCT**

Jacinta Jardine, SilverCloud Health, Ireland | #10

**Context:** Qualitative research into the therapeutic experience of iCBT is relatively scarce. By exploring the user's subjective experience of an intervention, researchers can gain important knowledge about the process of psychological and behavioural change and any barriers or supports to such. The current study is a secondary analysis of a large-scale RCT conducted within the UK's Improving Access to Psychological Therapies (IAPT) programme. The therapeutic experience component of this RCT aimed to evaluate the expectations, emotional and aesthetic experience as well as lifestyle fit of participants in relation to iCBT.

**Methods:** The main study was a parallel-groups, randomised controlled trial examining the effectiveness and cost-effectiveness of iCBT interventions for depression and anxiety disorders, against a waitlist control group. The iCBT treatments lasted 8 weeks and were supported by regular asynchronous feedback from Psychological Wellbeing Practitioners. Open-ended therapeutic experience questionnaires were collected at baseline, midpoint, and at the end of the 8-week treatment. Interpretative descriptive analysis is currently being used to analyse the data.

**Results:** The project is currently finalising data collection and the preliminary results of the analysis will be presented at esrii 2019.

**Conclusions:** The current research seeks to understand the patient's subjective experience of iCBT, exploring the course of therapeutic change and what might help or hinder this process.

## **Results and lessons learned from testing an e-mental health intervention in a low resource setting, Lebanon: a feasibility randomized controlled trial of Step-by-Step**

Jinane Abi Ramia, National Mental Health Program at the Ministry of Public Health, Lebanon | #85

**Background:** Lebanon is a middle-income country with a reported ninety percent gap in mental health treatment. Lebanon hosts more than 1.1 million Syrian refugees which overstretched its health care system and increased the need for mental health services.

World Health Organization and other partners has developed a self-help, story-based and minimally guided online intervention called Step-by-Step (SbS). SbS comprises 5 sessions of an illustrated story along with interactive exercises. Participants will receive minimal guidance from a team of trained lay helpers. They were trained to provide up to 15 min weekly motivational, emotional and technical support via phone or chat and are supervised by a clinical psychologist.

The story is based on behavioral activation, stress management and social support techniques. SbS was pilot tested and culturally adapted to the local context. The project attempts to address the high burden of disease associated with depression symptoms through a potentially cost-effective, scalable and evidence-based programme.

**Objectives:** The objective of this feasibility RCT is to test the research methods and recruitment procedures in order to inform the large-scale definitive trial that will follow. We will provide a general overview of the outcome data, the recruitment and retention methods used and discuss lessons learnt.

**Methods:** Participants are recruited through social media platforms and other outreach methods. If they screen positive for depression symptoms online, they will be randomly assigned to either the control or intervention group. Those in the control arm will receive basic psychoeducation and a list of existing primary health care centres with integrated mental health services. The intervention group will be granted access to the 5-session program along with minimal guidance from a team of well-trained lay helpers.

**Results:** Initially, N= 60 participants from the Syrian, Lebanese and other nationalities living in Lebanon were intended to be recruited. Following the social media recruitment campaign, N = 128 participants were randomized in control (n = 70) and intervention (n = 58) condition. Results from the feasibility trial will be presented, along with experiences and lessons learned pertaining to the recruitment and retention of participants, with special focus on the refugee population.

**Conclusion:** This information will be used to improve the procedures for the definitive RCT in Lebanon.

## **eHealth Interventions for Children with Autism Spectrum Disorders: Cost-effective, Easy-to-use, and Fun**

Johannes Verner Olsen, Department of Research, Child and Adolescent Psychiatry Odense, Denmark | #170

**Introduction:** There is no established routine intervention or social training for children with Autism Spectrum Disorders (ASD) in Scandinavia. Consequently, these children are treated differently, and a cost-effective intervention accommodating the children's individual interests and needs is in demand.

eHealth interventions have already provided promising results in interventions for children with ASD. In the present project, motion-capture technology allows for child and therapist to have direct, real-time interaction in a telepsychiatric setting of a semi-structured play routine aimed at improving the child's basic social skills such as joint attention, initiating social interaction etc. The therapist appears as an animated character on the child's tablet screen, allowing the children and their families to stay home in a familiar setting, while generating increased interest from the children compared to face-to-face interaction.

The aims of this pilot study is (1) to investigate the feasibility of the intervention and (2) to obtain a preliminary indication of the anticipated effect.

**Methods:** Until now, two boys diagnosed with ASD, aged 4 and 5 have received 8 weeks of intervention, utilizing the semi-structured play routine (inspired by established early intervention models for children with ASD) in the setting of the eHealth-system. The children are assessed on core ASD symptoms, problem behavior and adaptive behavior before and after the intervention period. Furthermore, qualitative data about the intervention and its appeal are collected from the parents.

**Results:** The technology works as expected. Both of the children improved significantly on problem and adaptive behavior, but not on ASD symptomatology. The parents were positive, especially with regard to the setting and structure under which the intervention was carried out and the appeal to the children.

**Discussion:** Appearing to be effective, appealing and practical, this project opens a lot of different research directions. How will the intervention do if performed over a longer time-period, which components of the play routine improve which outcomes, what possible weaknesses can be identified in this intervention approach, and finally, should this be investigated as a major intervention form for children with ASD? Recruitment and intervention have been initiated to investigate the intervention in a randomized controlled trial. Preliminary results of this work will be presented at esrii.

## **Predictors of dropout in modular internet-based self-help intervention for adjustment disorder**

Jonas Eimontas, Vilnius University, Lithuania | #163

**Introduction.** High dropout rates in internet-based self-help interventions cause major methodological issues in measuring intervention effects. Numerous studies showed various different factors can contribute to treatment dropout. However, evidence on any specific variables that could predict dropout is currently limited (Melville et al., 2010). The aim of this study was to identify the main predictors of participant dropout in a modular internet-based self-help intervention for adjustment disorder.

**Method.** Data analysis for this presentation was based on a secondary analysis of a data set of a previously published randomized controlled trial reporting on effectiveness of internet-based self-help intervention for adjustment disorder (Eimontas et al., 2018). Participants were considered dropouts if they did not complete at least one exercise and did not complete a self-administered online assessment one month into the intervention. Engagement with the intervention was measured as a sum of completed exercises. Out of 980 participants included in this study (age M = 35.27, SD = 11.7), 82% were women.

**Results.** A logistic regression was performed to ascertain the effects of age, gender, initial level of adjustment disorder symptoms, engagement with the intervention and ongoing consulting with a mental health specialist on the likelihood that participants will not dropout. After performing and initial analysis, only the two later factors were included in the revised model. The revised logistic regression model was statistically significant,  $\chi^2(4) = 20.087$ ,  $p < .0005$ . The model explained 18.6% (Nagelkerke R<sup>2</sup>) of the variance in dropout and correctly classified 87.1% of cases. Higher engagement with



intervention exercises was associated with lower likelihood of dropout. Participants who were additionally engaged in conventional therapy prior to entering the study were less likely to dropout.

**Discussion.** Results of this data analysis demonstrated that dropout could be predicted by variables directly related to participant's engagement and prior experience with therapy. The role of the therapy and therapist outside the study procedures should be explored by future studies. Whether motivated participants seek help from various interventions or rather their therapists motivate them to engage with interventions, remains to be answered.

## **Trajectories of depression and anxiety during and after delivery of an online, supported CBT intervention**

Jorge Palacios, Trinity College Dublin, Ireland | #150

**Context:** There is little evidence on the long-term effect of online interventions for depression and anxiety, measured as change in symptoms over time. Longitudinal modelling can cluster patients into groups of trajectories that may serve to determine which profiles of patients maintain positive outcomes after treatment, and which worsen across the follow-up period.

The Improving Access to Psychological Therapies (IAPT) program in the UK uses a stepped-care model to assess and treat patients with mental health conditions. Within Step 2, low-intensity treatments such as internet-delivered cognitive behavioural therapy (iCBT) are given to patients with mild to moderate symptomatology of depression and anxiety. This project describes a secondary analysis from an RCT within a representative IAPT NHS service, which aimed to test the effectiveness and cost-effectiveness of iCBT for depression and anxiety.

The aim of this study is to identify the distinct trajectories of depression and anxiety symptoms, and associate these trajectories to baseline demographics and clinical data, as well as to outcome, engagement, and costs.

**Methods:** The protocol of the main RCT from which this secondary analysis stems from has been published (Richards et al, 2018). Essentially, this was a parallel-group RCT where an intervention group of patients using an iCBT intervention for depression and anxiety was compared to a waitlist control group. Treatment on the online platforms lasts for 8 weeks, and patients were followed-up at 3, 6, 9, and 12 months. Primary outcomes were depression symptoms, as measured by the PHQ-9, and anxiety symptoms, as measured by the GAD-7.

Using this data, a latent class growth analysis (LCGA) will be applied using PHQ-9 and GAD-7 scores as the main outcome variable across time, from baseline to 12 months. LCGA is a particular type of latent class analysis which uses growth mixture modelling techniques to identify individual growth trajectories in a sample across unobserved subpopulations (the categorical latent variables), classifying them into groups. Once the groups are identified, they will be used as a categorical variable, which can then be tested for association to baseline demographics and clinical characteristics of each patient, and for association to clinical outcomes, engagement with the online platform, and health care costs.

**Results:** Analysis is ongoing and final results will be presented at the esrii 2019 conference.

## **Web-based therapy vs. face-to-face therapy for alcohol dependence**

Magnus Johansson, Karolinska Institute, Sweden | #178

**Introduction:** Computer- and internet-based interventions for alcohol problems have been available for over 20 years. Most of the interventions have been focused on prevention in risk groups and most studies have been on screening and brief intervention (SBI). More extended interventions, including several modules of internet-based cognitive behavioural therapy (iCBT) for alcohol problems, have been able to show significant but small effects in reduced alcohol consumption compared to briefer control interventions in a number of studies. But the evidence is mixed, with several large studies not finding such differences. There is a need for studies in a clinical setting, focusing on people with alcohol use disorder (AUD) and comparing internet-based and face-to-face treatment.

**Methods:** A randomized controlled non-inferiority trial was conducted at a well-established clinic treating AUD. Patients signed up for the study and completed baseline assessment via the clinic website and were then contacted by phone. After leaving blood samples for alcohol biomarkers and meeting with a physician for assessment, participants were randomized to CBT treatment via internet or face-to-face. The same treatment material and the same psychologists were used in both groups. Follow-up was conducted at 6 months. The non-inferiority limit was set to 5 drinks (60 grams of alcohol) a week.

**Results:** Randomized patients (n=303) had a mean age of 49 years (sd=12) and 38% were women. Mean consumption for the previous week was 24 (sd=14) drinks. Mean AUDIT score was 21 (sd=5) and 66% met criteria for severe AUD. Further, 16% had symptoms of generalized anxiety (GAD-7>9) and 26% of depression (MADRS-S>19). Preliminary analyses show that the weekly alcohol consumption for patients treated face-to-face decreased by 2 more drinks than for those treated via internet (95% CI -4.5 - 0.5) at 6-month follow-up, indicating non-inferiority for the iCBT treatment compared with face-to-face CBT treatment.

**Discussion:** Internet-based CBT treatment for can be used in specialized care and can be as effective as face-to-face treatment in reducing alcohol use among people with AUD.

## **A battery of very brief disorder-specific scales for use as a weekly measurement in transdiagnostic and individually tailored treatments**

Martin Kraepelien, Karolinska Institutet, Sweden | #65

**Objective:** To increase the capability of individual weekly monitoring of disorder-specific symptoms, while minimizing the burden on participants, in transdiagnostic and individually tailored treatments for depression and anxiety.

**Methods:** A battery of very brief disorder-specific scales for use as a weekly measurement were compiled, and very brief versions of scales were developed for relevant problems that currently lacked such versions. Psychometric analyses of candidate items were done with participants from the Internet Psychiatry Clinic (n=5103) and the REGASSA study (n=317). Six criteria related to factor structure, sensitivity to change and clinical representativeness were used to select items. A proposed weekly battery of very brief scales were then tested for feasibility in a small sample of patients receiving internet-based treatment at the Internet Psychiatry Clinic (n=8).

**Results:** Existing very brief scales were used for depression (PHQ-2), generalized anxiety (GAD-2) and social anxiety (mini-SPIN) together with evaluated candidate items from full scales measuring panic and agoraphobia (PDSS-SR), stress (PSS), insomnia (ISI) and suicidality (MADRS-S). The psychometric analysis supported using the proposed items over rival candidate items. The proposed weekly battery performed preliminary well in a small feasibility testing.

**Conclusions:** The battery of very brief disorder-specific scales is a feasible measurement for weekly monitoring of individual treatment progress and should be further examined in a larger sample.

### Therapist-supported internet-delivered cognitive behavioural therapy versus internet-delivered support and counseling for youth with social anxiety disorder: a randomized controlled trial

Martina Nord, Karolinska Institute, Stockholm, Sweden | #36

**Background:** Social anxiety disorder (SAD) is a common and highly disabling psychiatric condition in the youth population. Even though cognitive behavioural therapy (CBT) is the first-line treatment according to international guidelines, few children and adolescents with SAD receive this treatment. Research on internet-delivered interventions for youth with SAD is limited but promising. Results indicate that internet-delivered CBT (ICBT) could reduce social anxiety symptoms but findings from previous trials indicate that interventions with limited therapist support might not be enough for youth to implement the treatment principles in their everyday life. The primary aim of the current trial was to evaluate the efficacy and cost-effectiveness of therapist-guided ICBT for youth with SAD.

**Methods:** This was a single-blind randomized controlled trial comparing therapist-guided ICBT with therapist-guided internet-delivered support and counseling (ISUPPORT) for children and adolescents (N = 103; 10-17 y) with a principal diagnosis of SAD. Both treatments included weekly contact with a therapist and were supplemented with three individual videoconference sessions. Participants randomized to the active treatment arm received CBT for 10 weeks. Participants randomized to the control condition received 10 weeks of ISUPPORT and were then offered ICBT for 10 weeks, after the 3-month follow-up. Primary endpoint was the 3-month follow-up assessment. Clinicians blind to treatment allocation conducted assessments post treatment as well as the 3-month follow-up. The primary outcome measure was the Clinician Severity Rating (CSR), derived from the Anxiety Disorder Interview Schedule for DSM-IV, child version (ADIS-C). Secondary outcome measures included self- and parent rated measures of social anxiety (LSAS-CA), level of functioning (EWSAS) as well as maintaining factors such as anticipatory anxiety (ASBQ), post-event processing (PEPQ) and self-focus (FAQ). Data was also collected on numerous aspects of health-related costs.

**Results:** Results will be presented as between-group effect sizes from pre to the 3-month follow-up. In addition, results will include evaluation of cost-effectiveness of ICBT for youth with SAD. We hypothesize that ICBT will be more efficacious in reducing symptoms of social anxiety compared to ISUPPORT, as well as being more cost-effective.

**Discussion:** The efficacy and cost-effectiveness of ICBT for children and adolescents with SAD will be discussed.

### Guided internet-based Cognitive Behavioural Therapy for Adolescents with Anxiety – A Factorial Design Study.

Matilda Berg, Linköping University, Sweden | #64

**Introduction:** Anxiety is a burden for many adolescents in Sweden today. Yet there is still a lack of access to effective care for the youths in need. Internet-delivered cognitive behaviour therapy (ICBT) is a treatment format with the potential to increase accessibility of evidence-based care. The efficacy of ICBT in adolescents are promising but little is known about how ICBT should be adapted and delivered in the best possible way for this population. Thus, the overall aim of this study was to examine the effect of internet-based cognitive behavioral therapy (ICBT) for adolescents with clinically significant anxiety. More specifically, the aim was to evaluate the additive effects of learning support and therapeutic guidance through chat-sessions on treatment outcome.

**Methods:** Using a two-by-two factorial design, a total of 120 adolescents were randomized to one of four different intervention groups: 1) ICBT with therapeutic guidance through mail. 2) ICBT with therapeutic guidance through chat. 3) ICBT with learning support and therapeutic guidance through mail. 4) ICBT with learning support and therapeutic guidance through chat. The treatment had a transdiagnostic approach and went on for eight weeks.

**Results:** Overall, the treatment had a significant effect on all outcome measures. Mainly, the results revealed reduced symptoms on the two primary outcome measures (BAI,  $d = 0.75$ , BDI,  $d = 1.04$ ). The analyses showed mixed results regarding the effect of the two independent variables on treatment outcome. An significant effect of learning support was found on the primary outcome measures (BAI,  $d = .41$ ; BDI  $d = 0.37$ ). Adding chat-sessions with a therapist, however, did not affect the main outcomes. Analyses on secondary outcomes showed a significant effect of learning support on knowledge acquisition ( $d = 0.49$ ) and a significant effect of chat was found on self-esteem ( $d = 0.38$ ).



**Conclusion:** These results show that ICBT can reduce anxiety and depressive symptoms in adolescents. By being one of the first studies to examine the relative effect of different components in ICBT for adolescents, this study primarily highlights the potential of learning support to enhance the effects of ICBT on treatment outcome.

### **Cost-Effectiveness of internet-delivered interventions for depression and anxiety disorders in the Improving Access to Psychological Therapies. Results from a randomised control trial**

Matthew Franklin, University of Sheffield, United Kingdom | #113

**Context:** Economic evaluations of internet-delivered interventions for mental health have shown that guided internet interventions for depression and anxiety are cost-effective compared to unguided interventions, waiting list controls, treatment as usual, group Cognitive-Behaviour Therapy, and telephone counselling. These results suggest that there could be large public health savings with the use of internet interventions for treating depression and anxiety in mental health services. The present study assesses the cost-effectiveness of internet-delivered interventions for individuals with depression and anxiety within the NHS IAPT services.

**Methods:** A naturalistic randomised control trial. Adult users of step 2 services were randomly allocated to iCBT interventions for depression and anxiety disorders, or a waitlist control group. Randomisation followed a 2:1 ratio. Participants allocated to iCBT group completed the intervention during 8 weeks with support. Primary outcomes were depression (PHQ-9) and anxiety (GAD-7). For the cost-effectiveness analyses, the EQ-5D-5L, the ReQoL-10 and the CSRI were administered. Assessments were conducted at baseline, during, and at the end of the 8-week treatment and at 3, 6, 9, and 12-month follow-up.

**Results:** 384 users were randomised to the intervention group (n=256) or the waiting-list group (n=128). 79% of the sample had a diagnosis of anxiety and/or depression based on the MINI. Recruitment is finished and 12-month follow-up data is currently being collected, with retention rates being above 70% at this follow-up timepoint. For the purpose of the economic evaluation, EQ-5D-5L and ReQoL-10 preference-based tariff score values will be used to elicit the quality adjusted life year (QALY) using the area under the curve (AUC) method to account for the collection of this data at multiple time points between baseline and 12 month follow-up. Incremental mean point estimates of the difference in cost and QALYs between trial groups will be used to determine the incremental cost effectiveness ratio. These results will be presented at the conference.

**Discussion:** This study seeks to assess the cost-effectiveness of iCBT interventions for depression and anxiety that are integrated within step-2 of IAPT stepped-care model, and to compare it to a waiting list group. The results will provide a detailed analysis of how iCBT perform as an integrated treatment option within primary care settings.

### **Learn from our history – the use of machine learning to predict treatment outcome for Internet-based Cognitive Behavioural Therapy**

Nils Isacson, Karolinska Institutet, Sweden | #59

Empirical support for Cognitive Behavioral Therapy (CBT) for a range of psychiatric conditions has shown to be extensively robust. Despite this around 30-60% of those who receive CBT do not remit after treatment. This raises the issue of prediction - If one could identify these individuals in an early stage the opportunity to adapt treatment in line with the patient's trajectory could improve results. Although attempts at prediction have been made many have eventuated to ad-hoc explaining outcome rather than predicting.

A field which has been dedicated to prediction and has recently risen to prominence due to its success is the field of machine learning. Machine learning, which can briefly be stated to be a field of study in the conjunction of statistics, computer science and the study of algorithms, is mainly concerned with building algorithms which learns (based on data) to be useful for some specific task, for example predicting treatment outcome.

As the use of machine learning has grown in recognition it has already been investigated in some studies pertaining to psychological treatments. However, no study, to our knowledge, has gathered all the data used during psychological treatment in a large dataset of patients to investigate the predictive possibilities of using machine learning with a broad spectrum of clinical data. Thus, results from various machine learning methods in predicting treatment outcome in a sample of over 5000 patients in routine care which has undergone Internet-based CBT treatment for major depression, panic disorder and social anxiety disorder will be presented.

The algorithms will use data (e.g. symptom measures, messages between therapist and patient, reported activities) from baseline up until week 4 in the treatment. Various methods will be tried and presented, foremost using supervised machine learning, such as case-based methods (e.g. k-Nearest Neighbour), logical methods (e.g. random forest), neural networks (e.g. multilayer perceptrons), statistical-learning methods (e.g. Hidden Markov models) and heuristic models such as reinforcement learning.

Thus, in this presentation I will present the results of using machine learning based on data collected at baseline and up to week 4 in treatment to predict the final treatment result in a sample of over 5000 patients in routine internet-based CBT care.

## Effects of intense assessment on statistical power in randomized controlled trials: Informed simulation study on depression

Raphael Schuster, University of Salzburg, Austria | #17

Clinical trials are mainly based on single point assessments of psychopathology. At the same time, automatized repeated assessments based on short scales are an increasing practice to account for daily fluctuations in disease symptoms (e.g. ecological momentary assessment, or time series-based analyses). This study investigated the impact of Intense Pre-Post-Assessment (IPA) on statistical power in randomized controlled trials. A simulation study, based on three scenarios and several data sets, estimated the expected power gains of two- or fivefold pre-post-measurements of fluctuating disease symptoms. For each condition, 62.000 data sets were generated and AN(C)OVAs were applied to randomly drawn subsamples ( $N=50 - N=200$ ) of these data sets. An improved signal-to-noise ratio increased power beyond standard methods. Power increases ranged from 6% to 92%, with higher gains in more underpowered scenarios. ANCOVA with baseline as covariate profited from a more precise estimation of the baseline covariate, resulting in additional gains in statistical power. Ecological momentary assessment-like data sources (with low autocorrelation) resulted in highest absolute statistical power and outperformed traditional single point assessments. Comparable results emerged in complementing analyses for non-parametric (bootstrap permutation test) and linear mixed models (LMM). IPA integrates short time series-based assessments into clinical research designs and it accounts for natural fluctuations in daily disease symptoms. Sensitivity and efficiency of current RCTs can be improved by implementing a low number of automatized repeated assessments. Therefore, the investigated method might be a useful alternative to traditional point assessments (e.g. in neuroscience, or drug and psychotherapy research). Results are based on diverse simulations, implying high statistical validity. However, more empirical evidence is needed. For example, effects may diverge for psychiatric conditions with more complex symptom dynamics (e.g. posttraumatic stress disorder).

## Effectiveness of adding an Internet intervention (Deprexis) for depression to routine outpatient psychotherapy: Subgroup Analysis of the Evident Trial

Raphael Schuster, University of Salzburg, Austria | #16

**Objective:** To examine the effectiveness of an adjunctive Internet intervention for depression in a large sample of psychotherapeutic routine care patients.

**Methods:** The present study evaluates a subgroup of patients from the EVIDENT trial, a randomized assessor-blinded investigation on the treatment of mild to moderate depression. 392 adults (mean age = 43.3 years; 69.9% female) of the original sample received psychiatric or psychotherapeutic outpatient psychotherapy at the time of randomization to a 12-week minimally supported Internet intervention (Deprexis). Outcomes were assessed at baseline, three months (post) and six months (follow-up).

**Results:** Intention-to-treat analyses indicated that combined treatment led to greater reduction in self-reported and clinician-rated symptoms of depression (effect sizes  $d = 0.26 - 0.44$ ), and higher mental health-related quality of life. There was no effect on physical-related quality of life. The same pattern, with diminished treatment effects ( $d = 0.23 - 0.34$ ), was found at 6-month follow-up. Except baseline depressiveness, demographic and clinical variables did not predict outcomes of combined treatment. Online engagement was higher in more severely depressed and in older patients.

**Conclusion:** Results indicate that the adjunctive use of Internet interventions can produce additional and lasting effects in routine outpatient psychotherapy. The study adds to the ongoing evidence from superiority trials in integrated blended therapy. Future studies should investigate different types of blends in diverse populations.

## User experiences of ICBT in routine care: a qualitative study

Rikke Nørgaard Elster, University of Southern Denmark | #43

In March 2018 ICBT for depression and anxiety became a free public treatment service in Denmark. A concern to keep in mind is public acceptability of ICBT format, which is vital for the dissemination of the service. The goal of the study was to investigate how patients experience an ICBT course for depression and anxiety with therapist guidance. This was examined through a qualitative case study containing 4 semi-structured interviews of women who had participated in FearFighter or NoDep provided by Telepsychiatric Centre in Denmark, and by making a synthesized review of existing research. The patients received treatment in routine care and were not a part of research or RCT- thus real patients in real life. This topic is important to better understand and improve user experience, and thereby increase adherence and treatment outcome. The important themes on user experience in ICBT we identified in the literature and this study were; expectations, program experiences, motivation, flexibility, therapist support and reliability. Since user experience is a huge topic we created "the user experience model". The model illustrates a timeline and nuances of users' experiences in an ICBT course. It contains 4 steps; 1) acceptability and expectations 2) experience 3) adherence and 4) future. Each step contains themes that should be seen as continuums, which is more or less compatible with the patient's situation. E.g. flexibility can lead to more or less adherence to the program depending on the patient's situation/need for flexibility. First acceptance focuses on treatment format and is among other factors based on a set of expectations, susceptible to both internal and external factors before starting treatment. Next the patient has a personal experience of the ICBT course in

accordance with or discrepant to their prior expectations. Next the experience and the degree to which it is in accordance with previous expectations, impact the patients' adherence to the treatment. Finally, the patient opinion formed in the previous stages, constitute the patients' expectations of the future, including experience and expectation of symptom reduction, recovery, relapse and potential plans of future treatment. Based on the model and these findings specific suggestions were presented at Telepsychiatric Centre. These could be implemented right away to disseminate knowledge of the treatment format, increase acceptance, improve user experience, increase adherence and treatment outcome.

## Health Practitioner Awareness and Use of Digital Mental Health in Australia

Ruth Crowther, Queensland University of Technology, Australia | #72

**Introduction:** While digital resources and services have now obtained a key place in national mental health services, there remain significant challenges in its integration into routine clinical practice. E-Mental Health in Practice (eMHPrac) is a support service funded by the Australian Government from 2013-21 to build digital mental health awareness and skills in primary care practitioners across the country. eMHPrac markets digital mental health resources and services online and at conferences, and provides national training via face-to-face workshops, online modules and webinars to general medical practitioners, allied health practitioners and to health workers in Indigenous communities. This paper reports the impact of this work on numbers of new users and on referrals by practitioners.

**Methods:** Monthly data has been obtained since May 2013 from major providers of digital mental health tools and services on new registrations, and the nature of any practitioner who referred them. Data were totalled across providers and also examined within provider. Workshops were evaluated using pre/post changes in practitioners' knowledge of digital mental health services, confidence in using and referring to services, and intention to refer clients to services.

**Results:** Using totals across providers, annual data from Australian digital mental health service providers showed a 53% increase in contacts to online programs and 43% to online chat services over the last 5 years, and total yearly health practitioner referrals increased by 50% over 4 years. Within-provider data also showed similarly strong median increases. Evaluations of workshops demonstrated increases in practitioner knowledge, confidence, and intentions to refer clients.

**Conclusion:** Numbers of new users and referrals to digital mental health services have risen substantially over the project period. However, absolute rises in referrals are dwarfed by the increase in new users. Promoting the integration of digital mental health into routine service delivery remains a challenge.

## eMindYourHeart - Internet-based treatment of depression and anxiety in patients with ischemic heart disease

Susanne S. Pedersen, University of Southern Denmark and Department of Cardiology, Odense University Hospital, Denmark | #11

The number of patients with ischemic heart disease (IHD) has increased exponentially, and both IHD and depression will be among the top contributors to the disease-burden worldwide in 2020. To mitigate the impact of IHD, patients are offered cardiac rehabilitation (CR) and in some countries patients are also screened systematically for anxiety and depression, with 20% screening positive. Generally, the CR setting has no mental health treatment to offer patients, except referring them to their general practitioner. Whether patients contact their general practitioner and receive appropriate treatment we do not know. In order to bridge this gap in clinical care and treat heart and mind together, we will (i) Develop a therapist-assisted eHealth intervention, using a user-centred design involving patients and health care professionals, that targets depression and anxiety in patients with IHD that will be added to standard CR; (ii) Assess the feasibility of the intervention on patient dropout (barriers and facilitators), symptoms of depression and anxiety, and procedures with respect to recruitment and implementation in the CR settings; (iii) Evaluate the effectiveness of the eHealth intervention + treatment as usual (standard CR) + as compared to treatment as usual alone (standard CR) on depression, anxiety, quality of life and dropout, and the cost-effectiveness/cost-utility, in a multi-center randomised controlled trial. The intervention will be flexibly targetable to the individual patient's needs and designed to include and retain socially vulnerable patients and patients at risk of dropout. Psychologists will provide asynchronous guidance via the platform. Motivational interviewing will also be used during the intervention to prevent dropout. We hypothesise that a user-centred, tailored therapist-assisted eHealth approach, allowing patients to engage in the intervention when and where they want, will reduce symptoms of depression and anxiety, decrease dropout and be cost-effective as compared to usual care. Given the expected burden of IHD, depression and anxiety, challenges with retention of patients in CR programs, and the absence of treatment options for patients with depression and anxiety in the CR setting, the eMindYourHeart project has considerable potential to bridge this gap in clinical care. We have now finalised the participatory design (phase 1 of the study).

## Guided Internet-based treatment for depression in routine care

Tine Nordgreen, Haukeland University Hospital, Norway | #35

**Background:** Increasing access to effective psychological treatments for depression is a major societal challenge. This need, combined with the fact that computers in the format of lap-tops or smart phones are used by most on a daily basis, makes it possible to increase the access to mental health care services through Internet-delivered treatments. Therapist

guided Internet-based cognitive behavioral treatments (ICBT) for depression has been extensively researched in efficacy trials for the last twenty years. However, documented effects in routine care are scarce. Moving from effects in efficacy trials to effects in effectiveness trials in routine care is important in order to make guided internet-delivered treatments more widely accessible.

**Methods:** From the point of implementation of guided ICBT for depression in routine care in 2013 all patients at the eMeistring clinic has been included in an open cohort trial.

**Results:** We will present primary and secondary outcomes from this open cohort effectiveness trial of guided ICBT for adults with depression (N = 106).

The results will be discussed.

### Digital psychological interventions: Recommendations for practice by the EFPA TF on E-Health

Tom van Daele, Thomas More University of Applied Sciences, Belgium | #158

This talk presents a consensus statement on digital psychological interventions from the members of the European Federation of Psychologists' Associations Taskforce on E-health. The taskforce was specifically established with the aim to develop a better understanding of the domain and to propose strategies for sensible use of E-health throughout the 37 different member associations of EFPA.

Digital psychological interventions can be effective, delivered in various formats and can remove some of the traditional obstacles to psychological interventions. However, despite the wide-availability of digital tools, their uptake in clinical practice has been limited. The aim of the consensus statement is to provide general recommendations concerning the use of digital psychological interventions in routine care. These recommendations are considered as important points of attention when working with these interventions. Not surprisingly, some of these good practices are actually already in place in several member countries. The consensus statement groups the recommendations into four broad categories, concerning: 1) overarching topics and concerns for policy makers, 2) users, 3) psychologists and other healthcare professionals, and 4) health services. In this talk, statements and examples within each of the categories will briefly be discussed, together with their substantiation based on the literature.

### The role of ICBT in advancing from Stepped Care to Accelerated Care through the use of Machine Learning-Driven Patient-Treatment Matching and Adaptive Treatment Strategies

Viktor Kaldo, Karolinska Institutet & Linnaeus University, Sweden | #92

Stepped care means organizing a sequence of evidence-based treatment attempts in a standardized way so that the cheapest, least invasive, and most accessible treatment is offered first and patients who is not helped move up a step. Stepped care can include an initial matching between patient and treatment (i.e. suitable step to start with) and the possibility to step-up before a lower-step treatment is finished. In reality however, these are difficult tasks that are seldom used in a structured or reliable manner. Also, predictions using data from the ongoing treatment could be used to indicate when changes within the treatment could be warranted, in a so-called Adaptive Treatment Strategy.

Our ability to collect and store more data and methods for analyzing and making sense of data, or at least use it for prediction, increases. Artificial Intelligence (AI) and Machine Learning are two common terms to describe algorithms that can find and make use of complex patterns in large data sets to make predictions for new cases.

Internet-delivered treatment, often based in Cognitive Behavioral Therapy (ICBT) is structured, it is delivered in a context where data is rather easily collected, managed, and analyzed, and the amount of therapist support provided can be varied a lot within the same treatment, from none to an even more intense and frequent contact than traditional psychological treatment.

Together, AI-driven prediction and ICBT provides a good opportunity to take the lead in advancing Stepped Care into Accelerated Care, where health care resources are optimized while also decreasing the time patients need to wait until reaching effective care and reducing the number of failed treatments patients have to experience.

A model of Accelerated Care will be presented and discussed in relation to traditional Stepped Care and in light of difficulties and opportunities in developing the model through ICBT and AI.

# Poster Presentations

## The inclusion of a positive affect component in a transdiagnostic Internet-based treatment for emotional disorders: results throughout the intervention process

Amanda Díaz-García, Universitat Jaume I, Spain | #106

Evidence-based psychological treatments for emotional disorders have mainly focused on deficits and negative affect (NA), and less attention has been paid to the promotion of positive affect (PA). Different authors highlight the need to include PA as a major target of treatment. In addition, reaching everyone in need is also important, and Internet-based interventions can help in this purpose. The present study is a secondary analysis derived from a randomized controlled trial aimed to test the efficacy of an Internet-based transdiagnostic intervention for patients with emotional disorders. Participants were randomly assigned either to a Transdiagnostic Internet-based protocol (with 12 modules to down-regulate NA) or to a Transdiagnostic Internet-based protocol + positive affect component (with 16 modules including a component based on PA regulation strategies). The main goal of this study is to report the data collected after each module from the participants who completed this intervention, explore the changes throughout the intervention process, and examine the changes observed in the different variables before versus after the introduction of the PA regulation component. A total of 91 patients completed the intervention. Participants completed measures of positive and negative affect, depression, and anxiety measures at pre- and post-intervention, and after each treatment module. NA and anxiety decreased significantly during the implementation of both the traditional modules for down-regulating NA and PA regulation modules. Moreover, the analyses revealed that the improvements in all measures module by module were constant throughout the treatment. This is the first study to explore the incorporation of a PA regulation component in an Internet-based transdiagnostic treatment throughout the intervention process (module by module). The results suggest that the inclusion of PA components can have a clinical impact on patients with emotional disorders. Moreover, this study emphasizes the need to include these strategies to explore the possible change in positive functioning measures.

## Web-based stress management and telemedicine: the SerenEcoach project

Anne-Claire Leterme, University Hospital Lille, France | #70

Stress has been identified as one of the major public health issues in Europe, responsible for the development or the aggravation of a large number of psychiatric and somatic disorders.

Cognitive behavioral stress management programs have proven their effectiveness in reducing perceived stress, anxiety symptoms, and improving well-being. Considering the very large number of people which could benefit from such programs but are unable to reach them, web-based programs have been offered. The overall mean effect size of web and computer-based stress intervention for stress is Cohen  $d=0.43$ . Guided interventions yielded a greater effect size for reduction of stress than unguided interventions. However, the effect sizes found for this format are somewhat smaller than those found in traditional face-to-face interventions. The effectiveness and adherence to eHealth interventions is enhanced by human support. Blended interventions which associate face-to-face and internet based interventions seems to be the recommended treatment. Videoconferencing-based CBT has been compared with face to- face in different disorders (anxiety, depression) and has proved to be equally effective. To our knowledge, no videoconferencing-based stress management studies have been previously conducted. Telepsychiatry, in the form of videoconferencing may be an innovative solution to provide a human distal contact in digital programs and to improve efficacy of web-based stress management.

The aim of this communication is to present SerenEcoach project, a French language self-help program for stress management using digital supports (Seren@ctif), that will be guided by visioconferencing. The participants will have a self-designed password and the communication between the participant and the eCoach will take place in a secured web-based platform of visioconsultation Doctoconsult (<https://doctoconsult.com>), who has obtained accreditation from the Health Regional Agency and the National French College of physicians. The e-Coaches will receive 2 hours training to deliver the program and they will receive the e-coach manual who contains all the technical ethical and clinical informations for videoconsultations.

This innovative project, thanks to an easier access to cares, should allow the greatest number of people to reach an effective and attractive stress management program.

## An internet-delivered intervention for resilience with college students: Results from a pilot randomised controlled trial.

Angel Enrique, E-Mental Health Research Group, Trinity College Dublin, Ireland | #133

**Background:** College students face social and academic demands that put them at increased risk of developing mental health problems and burning out. Interventions aimed at improving resilience have shown initial efficacy in improving mental-health and well-being in clinical and non-clinical populations and online provision may improve the accessibility and availability of these interventions. However, few studies have assessed the efficacy of internet-based interventions



for resilience. Moreover, little is known about the role of support in internet-based intervention in terms of outcomes and adherence. The present study aims to investigate the preliminary efficacy and acceptability of the 'Space for Resilience' programme and the differential effects between automated and human types of support in the intervention.

**Methods:** A three-armed pilot randomised controlled trial methodology is used. 82 college students were randomly assigned to one of three conditions: intervention with human support (n=28), intervention with automated support (n=26), or waiting list control group (n=28). The 'Space for Resilience' programme is an eight-week, online intervention based on positive psychology that aims to promote resilience and well-being through the development of several well-evidenced, modifiable protective factors. Participants in the active control groups completed the eight-week online intervention and participants in the waiting list control group begin the intervention after an eight-week waiting period. Participants complete pre- and post-intervention measures of resilience, well-being, depression and anxiety, self-esteem, stress perception, and satisfaction with treatment.

**Results:** The trial will be finalised in May and the outcomes will be presented at the conference. A 2x3 mixed factorial ANOVA will be conducted in order to evaluate between-group differences from pre- to post-intervention for each outcome variable.

**Discussion:** Findings will be discussed with consideration to previous research on online resilience interventions which has demonstrated preliminary promise. Expected research implications include increasing knowledge around the role of providing different types of support during online interventions and user satisfaction with a resilience intervention grounded in positive psychology.

### Internet-delivered CBT intervention (Space for Sleep) for sleep disorder: a pilot trial

Angel Enrique, SilverCloud Health, Ireland | #56

**Background:** Insomnia Disorder (ID) is characterised by poor sleep quality or quantity and has a significant impact on the individuals functioning in life. It can cause serious distress and impacts the development of mood and/or anxiety disorders. Cognitive behavioural therapy (CBT) has been found to be effective in the treatment of insomnia, but the challenge remains to make it available and accessible in order to meet population needs. The current study is a first step in assessing the feasibility and suitability of internet-based CBT for insomnia (CBT-I) intervention in a naturalistic primary care setting. In piloting this intervention we can assess its initial clinical impact and establish criteria for the planning of a future large scale RCT study.

**Methods:** An open feasibility trial design to examine the potential clinical impact of an online CBT intervention for insomnia disorder in a naturalistic IAPT primary care setting (ID).

Intervention: 'Space for Sleep' is a seven-module online intervention for sleep made up of cognitive and behavioural components with the main tools being; sleep hygiene, sleep restriction, stimulus control, progressive muscle relaxation and cognitive restructuring techniques. The programme aims to improve users' sleep/wake cycle through evidence based interventions. The intervention runs over 8-weeks and is supported by Psychological Well-being Practitioners (PWPs) who login and review clients' progress, provide feedback and respond to the work they have completed.

**Results:** The project is currently ongoing – and results of the analysis will be presented at esrii 2019. Primary outcome measures include Sleep Efficiency and scores on the Insomnia Severity Index. Secondary outcome measures include the PHQ-9 and GAD-7.

**Discussion:** The program for the treatment of sleep disorder employs several innovative engagement strategies for improving the user experience. This study will contribute to the already established literature on internet-delivered interventions worldwide. Delivering iCBT may help overcome the barriers to treatment that exist and this study has the potential to both establish criteria for the planning of a future larger scale RCT study and to show how iCBT can enhance service provision.

### An internet-based self-management program for Bipolar Disorder in mental health services in Ireland. Results from a feasibility trial

Angel Enrique, E-mental Health Research Group, Trinity College Dublin, Ireland | #130

**Context:** Self-management strategies have been included into clinical guidelines for the treatment of patients with Bipolar Disorder (BD). Preliminary results of studies that have adapted these strategies for online use are promising, but no studies have been conducted in naturalistic settings to date. The current project seeks to examine the feasibility and potential effectiveness of implementing an online-delivered, clinician-supported self-management intervention for BD as part of service provision at two sites in Ireland.

**Methods:** The current study is a 10-week, uncontrolled, within-group study, with a pre-post design and embedded mixed-methods evaluation. The program is framed under the personal recovery approach and it consists of 4 modules about psychoeducation and self-management technique. It is delivered on a 2.0 platform including different types of multimedia content. Users were encouraged to regularly use the tools. A minimum of 6 reviews from their supporter over the course of the 10 week supported period was recommended. Supporters consisted of members of the care team at each site. Measures of quality of life, personal recovery, perception of illness and severity of bipolar symptoms were administered at baseline and post intervention. Qualitative interviews were conducted with clinicians and patients to assess acceptability and feasibility of the intervention.

**Results:** 19 patients with diagnosis of bipolar disorder signed up for the study. Mean age was 40 years old and 63.2% of the sample were females. 9 participants provided post-intervention outcomes. Non-parametric analyses with completers showed significant effects of the intervention on quality of life and sense of personal recovery. Patients also showed high rates of acceptability with the intervention. Clinicians liked the flexibility of access the interventions but they had difficulties in completing the reviews on time. Patients felt that the interventions made them feel more aware of their symptoms and help them to increase their physical activities, but they felt low engagement from their supporters.

**Conclusion:** Although the results are preliminary and limited by a small sample size, it can be inferred that the intervention served the purpose of improving quality of life and has the potential to be an effective adjunct to usual care for BD. Clinicians had difficulties scheduling reviews due to several contextual factors, which warrant consideration for future trials.

### **Art therapy in the Scottish Highlands: exploring technologies to connect therapists and clients living remotely.**

Ania Zubala, University of the Highlands and Islands, Scotland | #95

While the demand for art therapy in Scotland grows, its availability in remote and rural areas is currently limited and therapists often need to travel far distances to reach their clients. Could online modes of delivery be a way to bring art therapy practice closer to more remote communities?

This poster presentation will consider whether and how art therapy could make use of digital technology to reach clients living remotely and in what areas, if any, innovation might extend the tool box of art therapists. It will introduce the work of the Digital Health academic team in the Scottish Highlands and present an essence of the findings of a systematic review documenting the growing research evidence around the use of technology in art therapy. Recurring themes in the literature will be discussed, including the reasons behind the common resistance towards digital media. The poster will consider the technological innovations that could make some of the challenges redundant and indicate how they might be utilized in therapy. Building on this work, we will outline a feasibility study aiming to explore the views of art therapists practicing in remote areas and their clients. In particular, we will discuss opportunities to improve equity of access for a charitable organisation providing art therapy to children with long term and life limiting conditions.

Finally, we will invite conversation to explore ways in which to further connect technology and art therapy for the benefit of clients, therapists and ageing populations living remotely.

### **Implementation and utilization of blended counseling online-modules in a psychotherapeutic counseling center for students**

Anna Janßen, Johannes Gutenberg-University of Mainz, Germany | #41

Internet interventions based on cognitive behavioral therapy (CBT) techniques have proven to be effective in reducing a wide range of psychological symptoms. The psychotherapeutic counseling center of the Johannes Gutenberg-University of Mainz has been developing, implementing and using guided online programs successfully since 2012 (e.g., targeting academic writing problems and test anxiety) as an extension of our other counseling services (i.e., face-to-face counseling and on-site courses). To combine the advantages of online interventions with our face-to-face counseling, we have been developing a blended-learning concept since 2016: This concept allows counselors to add specific online-modules on frequently asked topics to their face-to-face counseling. The topics of the modules are enhancing relaxation, planning projects, changing beliefs, improving sleep as well as clarification of goals and values. Other topics are currently in development, for example coping with stress. The counselors are free to use and prescribe the modules whenever and however it fits in their counseling process. We register how the modules are used in the counseling process (e.g., number of used modules, time of use in the counseling process) and how satisfied the clients are, measured by the CSQ-I questionnaire. Since 2017, our counselors can use the online-modules also in the context of our on-site course offers in order to enhance the consolidation of the learning contents. The request of the modules rises progressively: In 2017, counselors prescribed 103 modules: 78 modules were prescribed during face-to-face counseling (73% were used actively by clients), 25 in our on-site course offer (44% active use). In 2018, counselors prescribed 385 modules: 157 modules were prescribed in the face-to-face counseling (46.5% were used actively by clients), 228 in our on-site course offer (20% active use). The satisfaction of the users was measured by the CSQ-I questionnaire and showed a moderate to high consumer satisfaction ( $M=25.38$ ;  $SD=6.83$ ; maximum=32, there are no cut-offs given). The strategies to implement specific online-modules in the daily counseling routine will be outlined on the poster. We will give an overview of initial data of the counselors use, the clients use and user satisfaction. We also will discuss possible future advancements and modifications.



## New in Town—Mobile-Based Intervention for Migrants: Study Protocol for a Randomized Controlled Trial

Anna Rogala, SWPS University of Social Sciences and Humanities, Poland | #83

The number of migrants worldwide is growing rapidly over the past years (UN, 2017). Migration often requires creating a whole new social network. There is something that can help migrants to do it—their beliefs. Social self-efficacy is a confidence in ability to engage in social interactional tasks necessary to initiate and maintain interpersonal relationships (Smith & Betz, 2000, Sherer et al., 1982). These beliefs are positively related to social adjustment (Connolly, 1989) and negatively related to acculturative stress, depression, and loneliness (Constantine, Okazaki, & Utsey, 2004, Wei, Russell, & Zakalik, 2005). Therefore, social self-efficacy may be potentially beneficial for psychological adjustment of migrants helping them establish new connections in social environment. Based on this observation we have created New in Town, a mobile-based intervention for migrants that aims at increasing social self-efficacy. Exercises in the intervention are based on the principles of Cognitive Behavioral Therapy and relate to four sources of self-efficacy beliefs—mastery experiences, vicarious experiences, verbal persuasions, and emotional and physiological states (Bandura, 1997).

The effectiveness of New in Town intervention will be tested in a two-arm randomized controlled trial with waitlist control group. Primary outcome is social self-efficacy, and secondary outcomes include loneliness, perceived social support, and satisfaction with life. Other measure of interest is system usability. We aim to recruit a total of N = 116 participants aged at least 18 who have changed their place of residence in the last 6 months and have a smartphone with internet access. Participants will be assessed at pre-test (T1), three-weeks post-tests (T2), as well as eight-weeks follow-up (T3). We aim to analyze the effect size of the intervention and between-groups comparisons at post-test and follow-up. This study will provide insights into the effectiveness of a mobile-based intervention in increasing social self-efficacy, perceived social support and satisfaction with life, and reducing loneliness.

## Together Not Separate - Transdiagnostic Tailored Internet Intervention for Depression and Comorbid Anxiety: 8-Week Efficacy of a Randomized Controlled Trial

Anna-Carlotta Zarski, Friedrich-Alexander University Erlangen-Nürnberg, Germany | #155

**Introduction:** Depression is highly prevalent and often accompanied by comorbid anxiety disorder. However, comorbidities are often not treated. Transdiagnostic tailored internet- and mobile-based interventions might be promising to overcome such issues.

**Aim:** This study aims to evaluate the efficacy of a transdiagnostic tailored internet intervention for depression and comorbid anxiety in individuals with major depressive disorder (MDD).

**Methods:** Two-hundred participants with MDD will be randomly assigned to an 8-week guided self-help internet intervention (IC) or a 6-month wait-list control group (WLC). The transdiagnostic tailored internet intervention is comprised of seven sessions plus one booster session including psychoeducation, behavioral activation, exposure, and problem solving. Participants of the IC will receive weekly content-focused feedback on module completion as well as monitored adherence reminders from an eCoach. The primary outcome is clinician-rated depression severity (QIDS-C) at post-assessment assessed by diagnostic raters blind to study condition. Secondary outcomes include, e.g., change in diagnostic status (MDD and anxiety disorders), remission and response rates, disorder symptom severity, health related quality of life, incongruence related to needs and values, and behavioral activation. Assessments will take place at baseline and post-assessment, 6-month follow-up, and in the IC 12-month follow-up. Data will be analyzed on an intention-to-treat basis and per protocol.

**Results:** The 8-week efficacy will be presented. Results are still pending. Until now, 188 out of 200 participants were randomized to the study conditions.

**Discussion:** The present study will provide evidence on the efficacy of a transdiagnostic tailored guided internet- and mobile-based treatment protocol.

## CORE: An Internet self-applied program to promote resilience and coping skills in university students in three Spanish-speaking countries

Araceli Palma Gomez, Universidad Jaume I, Spain | #104

**Introduction:** University life is a process of new challenges and stressors. The data show a higher prevalence of depression and anxiety at this stage of life. In addition, training to improve psychological skills significantly decreases the chances of developing emotional problems. Therefore, it is important to develop interventions that specifically target students and strengthen resilient environments and communities. Online interventions are tools that offer us advantages to improve these skills and especially to reach this population. CORE, is a program based on Ryff's wellness model, whose goal is to test the effectiveness and efficiency of a self-administered Internet program for promoting resilience, coping skills and coping strategies in Spanish-speaking college students. So the purpose of this presentation is to show the CORE training protocol: cultivating your resilience applied to university students from Spain, Argentina and Mexico.

**Methodology:** The study is a randomized controlled trial (RCT), involving 324 university students assigned to three conditions: 1) CORE, 6-week training program and 2) HLP, a 6-week training to promote healthy lifestyle; and 2) Waiting list, who will receive training at 6 months. The primary evaluation measure is the Connor-Davidson resilience scale.

Secondary measures were also included to evaluate anxiety, depression, quality of life, socioeconomic etc. Students will be evaluated at 4 weeks, 8 weeks post treatment and 6 months as follow-up for the analysis of results.

**Discussion:** The results of this study will contribute to research on Internet-administered treatments and the implementation of an effective treatment to prevent mental disorders in at-risk populations, especially to improve resilience and coping skills, decreasing symptoms of depression and anxiety, increasing psychological well-being for Spanish-speaking university students. In addition, avenues will be opened for new research on the effectiveness of these interventions focused on prevention and promotion of mental health in Spanish-speaking countries.

### **CORE: Usability and acceptance of a self-applied online protocol for the prevention of emotional disorders and promotion of resilience in university students: opinion of users and clinic psychologists.**

Araceli Palma Gomez, Universidad Jaume I, Spain | #103

**Introduction:** There is now empirical evidence on the efficacy of online interventions for emotional disturbance and a high drop-out rate has been observed when online programmes are self-applied. In view of this, there are few studies on the causes of abandonment and the mechanisms to be implemented to increase acceptance and adherence to treatment by users in this type of intervention. The objective of this paper was to obtain data about the acceptance and usability of the CORE: Cultivating Our Resilience program, which tests the effectiveness and efficiency of self-administered training over the Internet for the promotion of resilience, coping skills and coping strategies in university students.

**Methodology:** 5 students and 3 clinical psychologists participated, who completed 6-week training program, as well as 1 dropout. All responded to an online questionnaire to evaluate the degree of usability of the system and acceptability of the program, as well as open-ended questions to improve the program.

**Results:** CORE was well accepted and valued by both university students and professionals who completed the training suggesting technical aspects of system improvement. Participants who left the intervention found the program technically basic and unattractive, and suggested the need for a more interactive therapist or guide, which was also suggested by some students who completed the program and an expert.

**Discussion:** The results indicate that it is possible to increase the acceptance and adherence to self-administered treatments, the next step is to evaluate the results of the monitoring and the moment of abandonment of the dropouts for future studies.

### **Adherence to an Internet-based prevention program for women at risk for anorexia nervosa (StudentBodies-AN)**

Bianka Vollert, TU Dresden, Germany | #84

**Introduction:** Preventive Internet-based programs have been shown to be effective in reducing risk factors for and onset of eating disorders (ED). However, adherence to these interventions is usually not satisfactory. Therefore, findings on intervention efficacy cannot be interpreted without taking adherence into account.

**Methods:** We analyzed data collected in the intervention group (N=84) of an RCT evaluating the efficacy of an Internet-based prevention program (Student Bodies-AN) for women at risk for anorexia nervosa. We examined adherence to the intervention, predictors of adherence and the impact of adherence on outcomes. Adherence measures were overall adherence (defined as the percentage of opened pages) as well as the usage of the weekly symptom checklist, the personal journal, self-monitoring log and discussion board.

**Results:** 86.9% of the participants logged on to the program at least once and opened 63.8% of the assigned program pages. On average, participants completed 66% of required postings to the symptom-checklist, 49% of required postings to the personal journal and 41% to the self-monitoring log. The discussion board was rarely used (3.7 times). Participants with higher baseline levels of disordered eating (EDE Eating Concerns and EDI-2 Bulimia scores) showed higher adherence to Student Bodies-AN. Participants who initially reported binge eating and vomiting episodes were more likely to make use of the discussion board. Higher adherence to the program – especially the use of the personal journal as a sign of an active interaction with the interventions content – was associated with a greater reduction in eating disorder risk factors (e.g., restrictive eating, weight concerns).

**Conclusion:** Research on adherence and specific adherence-outcome interactions can help to identify the most relevant program components for online ED prevention. Our findings support assumptions that some program components might be more important than others for the efficacy of online interventions.

### **Promoting healthy adjustment following major orthopaedic surgery: Evaluation of iCanCope PostOp Smartphone Application.**

Bláithín O'Grady, Centre for Pain Research, National University of Ireland, Galway | #14

**Background:** Unrelieved or poorly treated acute pain after surgery negatively affects adolescents' ability to return to a normal daily life, especially in the first two weeks following surgery. Greater confidence in one's ability to manage pain ('pain coping self-efficacy') helps to reduce postoperative pain and lower the risk for chronic pain among young people. It is crucial to prevent and minimise postoperative pain in children. Thus, the aim of this research is to reduce the impact of acute and chronic pain and deliver improved physical and psychological outcomes for adolescents following major orthopaedic surgery through the use of the iCanCope PostOp smartphone app.

**Methods:** Phase 1: to adapt the comprehensive, theory and evidence-based iCanCope smartphone application based on key stakeholder feedback. Focus groups and interviews have been conducted with Health Care Professionals (N=19), adolescents who have undergone major orthopaedic surgery (N=8) and their parents/guardians (N=5).

Phase 2: to test the usability, accessibility and acceptability of the newly adapted iCanCope PostOp smartphone application using an iterative process of testing and refinement (2-3 adolescents and 1-2 parents/guardians per cycle).

Phase 3: to evaluate the efficacy of the iCanCope PostOp smartphone app through a pilot RCT (N=90, randomly allocated to 3 groups; treatment as usual, educational articles only or iCanCope PostOp smartphone app).

**Expected results:** We hypothesise that iCanCope PostOp will be effective in reducing post-operative: pain disability and distress in adolescents and will reduce the risk of having chronic post-surgical pain 3 and 12 months post-surgery.

Current stage of work: Phase 1 analysis. Phase 3 is due to begin in September 2019.

**Discussion:** The proposed innovative iCanCope PostOp app will support adolescents with acute post-operative pain to self-monitor symptoms and access 'in the moment' pain management advice when they need it. Improving acute postoperative pain may ultimately help reduce risk of development of chronic post-surgical pain, reduce healthcare utilization, reduce opioid requirements and potential for opioid-related harms and reduce impact of unrelieved or undertreated pain on mood, sleep behaviour and function leading to improved patient and family satisfaction with care.

### Online group therapy - a scoping review.

Bram van der Boom, Vrije Universiteit Amsterdam, the Netherlands | #58

**Introduction:** The prevalence of personality disorders (PDS) in the general population is estimated at 13.5 % and amongst patients with psychiatric illness it is 60.4 %. Online treatments for personality disorders have not been developed yet. Group psychotherapy has proven to be as effective in treating PDS as individual psychotherapy but has proven to be more cost effective. An effective online group therapy for PDS could prove a valuable addition to the treatment possibilities for this patient group. This study aims to provide an overview of technical and clinical possibilities, as well as the evidence base for online group therapy, this to inform health professionals about the activity in this field of research and to serve as a basis for conducting further research in this field.

**Methods:** Because of the large variety and possibility of conducting online group therapy (chat, video, telephone) we conducted a systematic scoping review.

Systematically we searched for online group therapy in all different fields of psychiatric disorders such as mood, anxiety, psychotic, substance abuse and autism spectrum disorders. Searches were conducted in psychology and medical science data basis. Studies were included if they provided primary research data on a form of online group therapy.

**Results:** The searches conducted yielded 4082 articles which were analyzed and reduced to a number of articles that specifically provided data on online group therapy.

**Conclusion:** Online group therapy has been tested and given through telephone, chat and recently videoconferencing technology. The nature of this group therapy (group dynamics, group therapy factors that contribute to healing such as catharsis) was similar to face to face group therapy. The measured effect of online group therapy proved comparably to the effect of f2f group therapy. This study supports the idea that online group therapy through videoconferencing could be a feasible treatment for patients with PDS.

### A transdiagnostic guided internet-based intervention for the emotional disorders: Efficacy, strengths and limitations

Carmen Schaeuffele, Freie Universität Berlin | #88

**Background:** The emotional disorders, that subsume all psychological disorders with high negative emotionality like the depressive and anxiety disorders, are highly prevalent and comorbid. Two thirds of patients meeting criteria for an anxiety disorder also fulfill the criteria for depression and vice versa. This challenge led to the development of so-called transdiagnostic treatments – treatments that are applicable across a variety of different disorders. In the current study, we evaluated a 10-week therapist-guided internet-delivered intervention based on the Unified Protocol, a transdiagnostic treatment approach for the emotional disorders.

**Methods:** In an RCT we compared the intervention with a wait-list-control group. We plan to recruit a total sample of n=180, including 60 participants with a primary diagnosis of depression, 60 with an anxiety disorder and 60 with a somatic symptom disorder. Diagnoses are determined with a structured interview (ADIS) via telephone. Assessments of outcomes are at pre-, mid- and post-treatment as well as at 1-, 3- and 12-month follow-up. The primary outcome measure is the BSI-18, a short version of the Symptom Checklist-90-R. Secondary outcomes include life satisfaction, positive and negative affect as well as disorder-specific symptomatology.

**Results:** The study started in December 2018 and is currently ongoing (N=83 randomized). We will present first results on the efficacy of this transdiagnostic internet-based intervention and thoroughly analyze its strengths and limitations. We

will report on individual goal attainment and predictors of adherence and outcome, including primary diagnosis, symptom severity, and outcome expectations.

**Discussion:** Results will shed light on the important question whether this transdiagnostic approach is actually applicable to the most common emotional disorders. If results prove favorable, this intervention would present a low-threshold intervention for a large range of patients with mental health problems and would offer a valuable treatment option for the majority of patients with more than one mental disorder.

### **I-GENDO – a individualized gender-sensitive mHealth intervention for overweight and obesity**

Caroline van der Velde, Otto-Friedrich-University Bamberg | #108

The use of mobile-health applications (mHealth) has significantly increased throughout the past years and psychological mHealth interventions in particular have become accessible for a broad audience. However, existing psychological mHealth interventions often come as “one fits all” interventions and lack individualization. One promising approach to realize individualization is to implement gender sensitivity, which could improve the effectiveness and acceptance of mHealth interventions. However, to the best of our knowledge, gender-sensitive psychological mHealth interventions have not been developed by now. Therefore, it was our aim to develop a gender-sensitive psychological mHealth intervention and to evaluate it by means of effectiveness and user acceptance. As there are important gender-effects known in overweight and obesity and psychological treatment is recommended by treatment guidelines, our intervention I-GENDO focusses on psychological aspects in overweight and obesity.

The I-GENDO intervention considers gender sensitivity by offering two different styles of presentation for each of six interventions modules. Both styles have been developed with specific regard to gender-related aspects in overweight and obesity (e.g. considering gender specific coping behaviour, presenting gender sensitive case examples). Effectiveness and acceptance of the I-GENDO intervention will be investigated under gender-sensitive aspects using a randomized controlled study design. 218 individuals with overweight or obesity will take part in the 12-week smartphone based interventional trial.

The study's recruitment process is scheduled for spring 2019. At the 6th esrii conference in September 2019 we will be able to present the gender-sensitive structure of the intervention and to report first data on compliance and acceptance as indicated by acceptance questionnaires as well as completion rate. We expect that male and female users show differences in acceptance and compliance.

Consideration of gender differences could enhance acceptance and effectiveness of psychological mHealth interventions by respecting the individual needs of the users, not only in overweight and obesity. The gender-sensitive structure of the I-GENDO intervention may be assigned to other (mental) health conditions.

### **Feasibility of smartphone apps as add-ons to regular treatment of suicidal patients**

Chani Nuij, Vrije Universiteit Amsterdam, the Netherlands | #91

**Study Objectives:** Suicidal behaviour remains difficult to predict and prevent. Clinical guidelines recommend that health care professionals develop a safety plan in collaboration with their suicidal patients to lower the imminent risk of suicidal behaviour. With evolving technology, mobile health applications (apps) provide new opportunities for safety planning and enable daily self-monitoring of suicide-related symptoms that may enhance safety planning. The CASPAR study applies a two-fold design to assess mobile safety planning and daily mobile self-monitoring as add-ons to regular treatment of suicidal patients. The first part of the study is practice-based research and evaluates the feasibility (i.e. usability, satisfaction and uptake) of mobile safety planning and daily self-monitoring in routine care treatment for suicidal patients. The second part analyses the monitoring data, in order to 1) validate previously postulated suicide-related psychological processes; 2) identify individual pathways to suicidal behaviour; and 3) profile types of suicidal individuals.

**Methods and material:** The study is an adaptive single cohort design among 80 adult patients in treatment, suffering from recurrent depressive disorder or dysthymia, with an elevated risk of suicide. Patients are instructed to use their mobile safety plan when necessary and to monitor mental health variables, including suicide ideation, four times a day. Both apps are used in treatment. Because clinicians are using the apps as add-ons to regular treatment, we developed a comprehensive training in which clinicians learn how to develop a mobile safety plan and in what way self-monitoring can be used in treatment. During the study both patients and clinicians evaluate the apps.

**Results:** At the conference, preliminary results are presented concerning feasibility of using apps as add-ons to regular treatment of suicidal patients.

**Conclusion:** The results from this study will gain insight into the feasibility of mobile safety planning and self-monitoring in treatment of suicidal patients. Furthermore, we provide further understanding of psychological processes of suicidal patients, especially regarding the transition from suicidal ideation to behaviour. This project is funded by ZonMW (the Netherlands) and is currently in ongoing.

## National partnership for mental health in the workplace

Christian Døsing Sørensen and Mette Marie Åbom, Danish Committee for Health Education | #69

1 in 5 Danes in the working age have mental health problems such as stress, anxiety and depression. A range of initiatives are being undertaken to combat this. However, workplaces lack an overview of these, and stakeholders experience trouble finding materials that match their needs. Thus, a transverse, cross-sectoral effort was initiated, bridging the health and employment sectors in a national partnership commenced in order to pool knowledge and experience, to create an overview of the existing knowledge and tools within the field of mental health in the workplace, and to prepare and disseminate clear and common advice to Danish workplaces.

Led by the Danish Ministry of Health (MoH), a partnership has been established between 35 partners, ranging both employee and employer organizations from the private and public sector and participants from patient organizations and the private sector. The partnership – called 'Sammen om mental Sundhed' has launched a shared toolbox at [www.mentalsundhed.dk](http://www.mentalsundhed.dk), bridging partners' professional knowledge in a science-based Q&A, lending support to the various roles at the individual workplace. More than 400 relevant tools, provided by partners, were tagged, sorted, and linked to the science-based Q&A, providing inspiration for possible actions to undertake.

A representative survey conducted on behalf of the partnership has shown that one year after the digital toolbox was launched 5 percent of people in Denmark already knew about the effort (equivalent to 136,500 employees). 92 percent of these state that they have found helpful information at [www.mentalsundhed.dk](http://www.mentalsundhed.dk). Material from the partnership's joint national campaign, especially aimed at colleagues, was shown more than 7 million times, and seen by more than one in four Danes. From 2018 and forth the partnership has achieved permanent government funding has been allocated to meet the partners' and governmental wishes for the continual operation of the partnership.

The transverse, cross-sectoral partnership constitutes a professional cooperation on mental health, bridging the health and employment sector, and mobilizing a broad interface to the larger part of the Danish workforce. The toolbox on [www.mentalsundhed.dk](http://www.mentalsundhed.dk) represents a professionally rooted joint action within in the field of mental health in the workplace, potentially able to change to future trajectory within this field in Denmark.

## An Internet-based Self-Applied Treatment Program for Prolonged Grief Disorder (PGD): Study Protocol for an Open Clinical Trial

Cintia Tur Domenech, Universitat Jaume I | #24

Approximately 10% of the individuals experiencing the death of a loved one develop prolonged grief disorder (PGD) after bereavement. There are cognitive-behavioural treatments (CBT) that have shown efficacy in reducing symptoms characteristic of PGD but this does not ensure that people who need treatment can access to it. Therefore, it is necessary to improve the dissemination of treatments to reach more people. Systematic reviews have shown that Internet-based interventions are efficacious, and meta-analyses studies have also shown that these interventions produce greater effect sizes compared to the control group and the same size as traditional face-to-face protocols. This work presents the protocol study describing the plan to conduct an open clinical trial to investigate the efficacy and effectiveness of an Internet-based Intervention for PGD compared to the traditional face-to-face Intervention. A minimum of 24 participants will be randomly assigned to two treatment conditions for PGD: 1) Internet-based intervention 2) traditional face-to-face intervention. The diagnostic interview for the PGD of Prigerson y Jacobs (2001) will be applied. Four moments of evaluation will be included: pre-treatment, post-treatment and two follow-up periods (3- and 12-month). Both interventions will have the same main therapeutic components: integration and restoration of lost, reconstruction meaning loss and establishment of durable bond with the deceased. Internet-based treatment will be developed in a specialized web platform ([www.psicologiatecnologia.com](http://www.psicologiatecnologia.com)). Online intervention will include videos, vignettes, audios and interactive exercises and patients will receive a weekly support call of maximum 10 minutes. This work is currently in progress and the study is in process of registration at [clinicaltrials.gov](http://clinicaltrials.gov). The present study aims to improve knowledge about the effectiveness of an intervention for PGD, and conduct a preliminary comparison between two intervention conditions (Internet based intervention vs. traditional face-to-face intervention). We expect to provide preliminary data regarding efficacy of this internet-based intervention. Also, we pretend to collect information that can help to improve the efficiency and effectiveness of Internet based interventions. Additionally, to our knowledge, this will be the first internet-based intervention for PGD in Spanish language.

## An illustration of the implementation of randomised control trial procedures in a naturalistic setting.

Daniel Duffy, Trinity College Dublin & SilverCloud Health | #141

**Context:** The effectiveness and efficacy of internet-delivered interventions has already been established across numerous research trials, but what do we know about the implementation of randomised control trial designs for these types of interventions in naturalistic services? The Digital IAPT randomised control trial (RCT) successfully identified 430 participants and recruited 234 to participate in research over a 10-month period in a naturalistic service setting. The current study sought to analyse the implementation procedures that facilitated its success.

**Methods:** The current study will qualitatively analyse the timeline of implementation procedures using the 8 implementation outcomes of Proctor et al. (2011) as a coding frame. These outcomes are acceptability, adoption,



appropriateness, costs, feasibility, fidelity, penetration and sustainability. This data will then be analysed thematically under the coding frame to retrospectively understand the progression of the trial and any changes made to the procedure to facilitate its implementation. Clinicians that were involved with the study will also complete a battery based on these implementation outcomes, with the goal of informing potential feasibility and sustainability of research procedures.

**Results:** Data analysis for this study is ongoing and will be presented at esrii 2019.

**Conclusions:** Furthering the implementation of trial designs can be beneficial for developers of interventions and health services, where developing seamless trial procedures and pathways can ease the burden for both patients and services participating in research. Using the Digital IAPT RCT as an example, the current study will endeavour to highlight areas for consideration when implementing RCT designs in naturalistic settings.

### Digital Interventions in Service Provision: a descriptive-interpretive qualitative approach to examining stakeholders' experiences of implementing digital interventions.

Daniel Duffy, Trinity College Dublin & SilverCloud Health | #140

**Background:** The efficacy and effectiveness of internet-delivered interventions (IDIs) has already been established across numerous conditions and contexts, and a number of services have implemented them into their treatment-as-usual package. However, the juvenile nature of the field of digital interventions means that the implementation procedures, strategies and contextual influences are not widely or coherently documented. A number of individuals from different groups are often involved in the implementation of digital interventions, and a concerted effort is typically required to ensure these interventions are sustained within treatment-as-usual. Further, most studies publish implementation data associated with research implementations with finite lifespans and learnings that are difficult to translate to routine service. Therefore, the current study sought to establish the current practice of implementing digital interventions into routine practice from the experience of those involved in the development of the interventions (the digital healthcare industry) and healthcare providers.

**Methods:** The research utilised a series case study design, guided by the descriptive and interpretive methodology (Elliot & Timulak, 2005; Timulak & Elliot, 2019) to qualitatively analyse stakeholder experience of implementing digital interventions in mental healthcare service provision. A qualitative approach was favoured over traditional survey-based methods as it would allow for the researchers to extract a detailed account of the implementation phenomenon. A semi-structured interview schedule was developed around 4 main domains; implementation process, implementation strategies, contextual influencers and decisive elements. Stakeholders involved in the implementation process from the digital intervention industry (product developers, customer success managers and sales people) and healthcare organisations (clinicians, service managers and policy makers/informers) were invited to participate.

**Results:** Data is currently in the process of being analysed and will be presented at esrii 2019.

**Conclusions:** The current research seeks to establish expert experience of implementing digital interventions in service provision. This research forms part of a larger project that aims to develop an evidence and practice informed model of implementation for digital interventions.

### Can an Ecological Momentary Assessment for Emotion Regulation be also a Therapeutic Tool?

Desiree Colombo, Jaume I University | #94

**Background:** Ecological momentary assessment (EMA) represents an alternative strategy to retrospective self-reports that enables repeated assessments close in time to the experience and in real-life contexts. Beyond its utility for assessment, there is evidence suggesting that EMA-derived feedback can be a valuable adjunctive therapeutic tool to decrease depressive symptomatology. Here, we explored whether the sole use of a smartphone-based EMA for mood monitoring and emotion regulation (ER) assessment can decrease depressive symptoms and improve daily mood.

**Methods:** Over 2 weeks, 79 undergraduate students were prompted 3 times per day to complete a smartphone-based EMA. During each assessment, participants were asked to complete single-items of positive (PA) and negative affect (NA), stress level and experienced negative emotions. If negative emotions were reported, participants were asked to provide further information regarding their emotional state (identification of a trigger, contextual information, perceived levels of challenge and skills) and ER implementation (identification of adopted ER strategies, perceived efficacy). Measures of depression (Patient Health Questionnaire-9), anxiety (Generalized Anxiety Disorder-7) and affect (Positive and Negative Affect Schedule) were collected at the beginning and at the end of the 2-weeks EMA.

**Results:** A significant reduction in PHQ-9 scores following the 2-weeks EMA was observed ( $Z = -2.50, p < .05$ ). After dividing the sample in 3 groups based on PHQ-9 scores (0-4: no depression; 5-9: minor depressive symptoms; >10: mild/severe depression) (MacArthur and MacArthur 2009), a significant reduction in PHQ-9 scores was pointed out just in the mild-severe group ( $F(2,76)=22.26; p<0.001$ ), which also showed a significant reduction in anxiety ( $F(2,76)=5.24; p<0.01$ ) and NA levels ( $F(2,76)=5.73; p<0.01$ ), but not in PA. Anxiety and NA reduction significantly predicted PHQ-9 decrease, while number of self-reports reflecting daily negative emotions was only close to significance ( $R^2: .43; F(3,75)=18.62; p<.001$ ).

**Discussion:** Despite the absence of derived-feedback, the sole use of a smartphone diary to self-monitor constitutes a valuable therapeutic tool to decrease depressive symptoms and increase daily mood. We hypothesize that our EMA may have worked as a tool to induce reflection about daily experiences of negative emotions and the associated ER mechanisms. Nevertheless, more research should be conducted before drawing causal conclusions

## Post-module analyses of a low-intensity Internet-based intervention focused on the promotion of positive affect for the treatment of depression in Primary Care

M<sup>a</sup> Dolores Vara, University of Valencia | #57

Depression is the most common mental disorder in the health care services. Specifically, 60% of patients with depression are attended to in primary care (PC) centers (Fernández et al., 2006). So far, there are numerous evidence-based psychological treatments for depression (e.g., Cuijpers et al., 2013). However, despite the existence of these treatments, the provision of mental health services is considerably low in terms of access and quality (Kazdin & Blase, 2011). Low-intensity Internet interventions could be an efficacious therapeutic option for the treatment of depression in PC, given their potentialities (Donker et al., 2015). It is worth to consider, in addition, a relevant aspect proposed to improve the currently available treatments: the promotion of positive affect. This point is especially relevant to people suffering from depression (e.g., Santos et al., 2013). The aim of this work is to analyze the changes in depression severity and affect taking into account post-module assessments of a low-intensity Internet-based intervention focused on promotion of positive affect (consisted of four self-guided modules) (IPPA) along with the improved treatment as usual (TAU) for the treatment of depression in PC. A sample of 40 participants (30 females, 10 males) with ages from 19 to 65 years old were included. Participants were diagnosed with M.I.N.I. psychiatric interview. Main outcomes were the scores of Patient Health Questionnaire and Positive and Negative Affect Scale. 3 linear mixed models were conducted taking into account time (pre-treatment, post-modules, and post treatment) as a within-group factor, using MIXED procedure. The results showed that the IPPA was efficacious in decreasing depression severity and negative affect, and increasing positive affect, across the modules of the treatment. However, the effect of the intervention was greater between modules 1 and 2. It seems that participants' depression severity and symptomatology improvement could have influenced their response to different treatment modules. These data suggest that Internet-based interventions focused on the promotion of positive affect have an important initial impact on depressive symptomatology, becoming a good treatment option in the public health systems.

## Stand-alone Virtual Reality Exposure App to treat fear of heights: a randomized-controlled trial

Dorothee Bentz, University of Basel | #67

Fear of heights is a common problem with a lifetime prevalence of around 20% and with 2-5% of the general population meeting the DSM-IV criteria for specific phobia (natural-environmental type: heights). Despite the plethora of research supporting exposure as treatment of choice with high success rates, its successful dissemination in clinical practice is still limited. Therefore, low threshold treatment options are needed. New treatment avenues are facilitated by rapid development of virtual reality (VR) technologies enabling the use of VR via smartphone. We developed a stand-alone VR heights exposure app for smartphones in which sufferers from fear of heights can expose themselves to different height levels in a graduated manner. The course of exposure is adapted to subjective fear indicated by app users, throughout VR heights exposure, via gaze selection on a scale of 0-10 (0=no fear, 10=maximal fear). VR app users are kept on one height level until they indicate minimal to no fear for multiple times. To test the efficacy of our VR heights exposure app, we randomized 70 participants with fear of heights (42 fulfilling DSM-V criteria for specific phobia) to either one exposure session (3x20min units) with our VR heights exposure app (experimental condition) or one session (3x20min units) with a google street view VR app (control condition). Strength of fear of heights was measured with a real-life behavioral avoidance test (BAT) as well questionnaires specific to fear of heights before and after the use of the VR heights exposure app. During the BAT participants were instructed to climb a tower as far as their current fear allows them, subjective fear on the reached platform (1-14) was prompted on a scale of 0-10 (0=no fear, 10=maximal fear). Additionally, participants were asked for an overall assessment of fear of heights after testing day compared to beginning on a scale from 0-100 (0 = a lot worse, 50 = no improvement, 100 = a lot better). Effects of our one session exposure session with the stand-alone VR heights exposure app on behavioral and subjective fear of heights in participants with fear of heights will be presented at the conference. An immediate amelioration of fear of heights after a single exposure session with our VR heights exposure app would recommend the app as a low threshold treatment option for fear of heights. Moreover, it would stimulate further research on long-term effects of the VR heights exposure app after prolonged use.

## Feasibility trial of a moderated online social therapy intervention with young people experiencing suicidal ideation (the Affinity project)

Eleanor Bailey, Orygen, The National Centre of Excellence in Youth Mental Health & Swinburne University of Technology, Australia | #9

Context: Suicide remains a major public health problem, and is the leading cause of death for young Australians. Despite this, there is a lack of evidence for effective interventions for this population. Interventions delivered via online social media platforms are uniquely placed to tackle interpersonal factors contributing to suicide risk: they may be able to effectively address the human need to belong while potentially moderating perceived burdensomeness. To date, however, this has not been tested. This project sought to evaluate the safety, feasibility, acceptability and potential clinical effectiveness of



a purpose-built moderated online social therapy intervention, called "Affinity", with a sample of young people who experience suicidal ideation.

**Methods:** In this single-group pilot study, 20 young people who were clients of a specialist mental health service and experienced suicidal thoughts were offered the Affinity intervention for up to five months. Participants were assessed at baseline and 8-week follow-up using qualitative and quantitative measures.

**Intervention:** Affinity is a closed, interactive, purpose-built website designed to be a supplement to traditional face-to-face interventions for young people who experience suicidal ideation. It integrates peer-to-peer online social networking, individually-tailored interactive psychosocial interventions, and involvement of expert mental health moderators.

**Results:** The Affinity intervention was found to be safe, feasible and acceptable. Qualitative interview data suggest participants particularly valued the sense of belongingness they felt on Affinity.

**Conclusions:** This research provides world-first empirical evidence to suggest that high-quality, well-moderated online social networking interventions can be safely used to support youth at risk of suicide.

### Ethical issues and practical barriers in internet-based suicide prevention research

Eleanor Bailey, Orygen, The National Centre of Excellence in Youth Mental Health, Australia | #110

**Study Objectives:** People who are at risk of suicide stand to benefit from internet-based interventions. However, researchers wanting to test internet-based interventions with this population face many ethical and practical barriers. As a result, there is much variability in the participant inclusion criteria and safety protocols used in these studies, and interventions targeting people who are at risk of suicide often exclude participants who are deemed to be at a particularly high level of risk. This is problematic, not only because participants who stand to benefit from participation in such studies are excluded, but also because excluding such participants limits the generalisability of study results.

The aims of the present study are twofold: 1) to examine the inclusion criteria and risk management protocols used in studies of internet-based interventions for people at risk of suicide; and 2) to examine the views of researchers in the field regarding the ethical and practical issues involved in conducting studies of this nature.

**Methods and materials:** This study involved two phases. First, an online search was conducted to identify published trials of internet-based interventions for people who are at risk of suicide. Trial registries were also searched to identify protocols of trials currently underway. Identified trials were examined to ascertain inclusion/exclusion criteria related to participant suicidality. Second, an online survey was distributed to lead researchers on the studies identified. The online survey contained qualitative and quantitative items regarding the ethical and practical barriers faced by respondents.

**Results and Conclusions:** A number of barriers were identified by participants, particularly related to concerns around safety and duty of care. It is hoped that the findings of this study will help researchers to navigate the ethical and practical issues inherent to this area, which will in turn lead to more high-quality research into potentially effective interventions for supporting people who are at risk of suicide. Additionally, the findings of this study may help inform ethical committees considering applications to conduct internet-based suicide prevention research.

### Efficacy and cost-effectiveness of two online interventions for children and adolescents at risk for depression (E.motion RCT): Study design, recruitment status and analysis of reason for not participating in the trial

Elisabeth Kohls, University Leipzig, Medical Faculty, Leipzig, Germany | #19

Depression is a serious mental health problem. Online interventions are promising in improving help-seeking behavior and to tackle the widespread under-treatment of depression, especially in children and adolescents.

The multi-centre, randomized-controlled E.motion trial is part of the ProHEAD consortium in Germany (Promoting Help-seeking using E-technology for ADolescents). The trial aims to investigate the efficacy and cost-effectiveness of two online interventions to reduce depressive symptomatology in children and adolescents in comparison to an active control group. Participants will be randomized to a clinician-guided self-management program (iFightDepression®); a clinician-guided group chat intervention; or a psycho-educational website. In total, N = 363 children and adolescents aged ≥ 12 years with subsyndromal symptoms of depression will be recruited school-based at five German study sites. Online questionnaires measuring depression symptomatology, help-seeking behavior, adherence to and satisfaction with the interventions, depression stigma, and utilization and cost of interventions will be administered before the intervention, at the end of the intervention, and at 6 months follow-up.

This first RCT investigating efficacy and cost-effectiveness of online interventions in children and adolescents at risk for depression aims to provide a better understanding of help-seeking behavior in children and adolescents and outline the uptake and potential benefits of E-mental-health interventions for this age group.

The study design of the trial and current recruitment status will be presented. Further, preliminary results on anonymized individual reasons for not participating in the trial from > 300 children and adolescents will be presented and discussed.

## Clinical and demographic predictors of engagement with a weekly symptom monitoring app by individuals with psychosis during a six month longitudinal feasibility study

Emily Eisner, University of Manchester, United Kingdom | #117

**Background:** We conducted a longitudinal study examining the feasibility of using a smartphone app ('ExPRESS') to gather weekly reports of early signs of relapse, basic symptoms and psychotic symptoms over a six month period. Since this study had a longer follow-up period than any other study reporting a symptom monitoring app in established psychosis, participants' app engagement, and predictors of this engagement, are of key interest.

**Methods:** Individuals who had experienced a relapse of psychosis within the past year ( $n=18$ ) were assessed at baseline using measures of psychotic symptoms, general symptoms, fear of relapse, substance use, medication adherence and demographics. Participants were then asked to use the ExPRESS app weekly for six months to answer questions about a personalized set of early signs of relapse, basic symptoms and psychotic symptoms. Participants received phone calls from the researcher (weekly for four weeks; monthly thereafter) to encourage participation and troubleshoot any difficulties with app use.

The pattern of app completion during follow-up was explored in a mixed-effects model with a random effect of participant and a fixed-effect of time. Effects of baseline variables on percentage app completion were examined using Spearman's correlations (continuous variables), Mann-Whitney or Kruskal-Wallis tests (categorical variables).

**Results:** Participants completed 65% of weekly app assessments, with 78% of the sample completing at least a third of assessments. Participants responded to fewer prompts as the study progressed ( $OR=0.89$  per week follow-up,  $p<0.001$ ). Percentage app completion was significantly and inversely correlated with baseline depression ( $\rho=-0.56$ ,  $p=0.015$ ) and fear of relapse ( $\rho=-0.58$ ,  $p=0.014$ ), with anxiety approaching significance ( $\rho=-0.48$ ,  $p=0.052$ ) and all other baseline variables non-significant.

**Discussion:** Predictors of app engagement have been examined previously but a consistent picture is yet to emerge. Studies have variously reported that higher positive, negative or agitation/mania symptoms predicted lower app engagement, whereas the current study found a significant effect of depression and fear of relapse.

## ExPRESS-ing my symptoms: service user experiences of using a symptom monitoring app for six months

Emily Eisner, University of Manchester, United Kingdom | #118

**Introduction:** Relapse of schizophrenia is common, has profound, adverse consequences for service users and is costly to health services. Early signs interventions aim to use warning signs of deterioration to prevent full relapse. ExPRESS is a smartphone app which monitors early signs of relapse and psychotic symptoms on a weekly basis. There is evidence that people with schizophrenia find apps an acceptable means for self-monitoring in the short term (1 week). However this is the first study to gather in-depth qualitative data from a sample using an app to monitor early signs of relapse in the long term (6 months).

**Methods:** Individuals ( $n=18$ ) experiencing a relapse of schizophrenia within the past year were asked to use ExPRESS weekly for 6 months to answer questions on their experience of early signs and psychotic symptoms. Face-to-face qualitative interviews ( $n=16$ ) were then conducted to explore participants' experiences of using the app. The topic guide sought participants' views on the following a-priori themes: item content, layout and wording; the way the app looked; length and frequency of assessments; possible worries about using the app; how app usage fitted with participants' routines; the app's extra features; other experiences of using the app. Interview transcripts were analysed using the framework method which allows both a-priori and emergent themes to be examined.

**Results:** Interview participants had a mean age of 38 (age range 22 to 57 years). Overall their responses to a-priori topics indicated that the app was acceptable. Participants suggested small changes that could be made for future versions of the app. The following emergent themes gave further insight into individuals' experiences of using the app: accessibility and connection, barriers to app use, response style, self-reflection, therapeutic value.

**Discussion:** This study suggests that apps are an acceptable means of long-term symptom monitoring for service users with a diagnosis of schizophrenia across a wide age range. Some reported finding the app more accessible than visits from a clinician, since assessments were more frequent, more anonymous and did not require the individual to explain their feelings in their own words. Nevertheless, some barriers to using the app were reported. Despite the app containing no overtly therapeutic components, some participants found that answering weekly questions on the app prompted self-reflection which had therapeutic value for them.

## Reducing coercion in in-patient psychiatry using Virtual Reality: A pilot project evaluation

Esben Skov Jensen, Centre for Telepsychiatry, Denmark | #46

**Introduction:** Coercion is a contentious subject in mental health services. Psychiatric patients in Denmark are at risk of being subjected to manual restraint, mechanical restraint or involuntary sedation during aggressive episodes or comparable circumstances of disinhibition. A variety of research has shown coercion to have a negative impact on both staff and patients. In response Denmark is one of several countries that have increased their focus on reducing coercion in the in-patient mental health services. In the Region of Southern Denmark, the effort has been based on several

approaches including the Six Core Strategies from NASMHPD and the Safewards model. Prior interventions have shown good effect, but a group of in-patients has continued to show elevated risks of being subjected to coercion. This patient group consists of young in-patients as well as patients suffering from substance use disorders. The present study is an evaluation of a pilot project that aims at reducing the use of coercions through implementation of Virtual Reality (VR) for recreational purposes in six in-patient psychiatric wards in Odense. VR was chosen in order to appeal to the younger patient group. The aim was to utilize the immersive and pleasing qualities of VR for recreation, and perhaps decrease the feeling of being locked in an institution as well as allowing for distraction from the experience of confinement.

**Methods:** The study will use a mixed methods design focusing on thematic analysis in the first part of the study, and utilize a quantitative analysis in the second part. Data will be gathered from a variety of sources. Semi-structured interviews will be performed with both patients (N = 7) and staff (N = 8) at a closed ward in the Mental Health Services of Southern Denmark for the purpose of thematic analysis. Together with the Systems Usability Scale, the thematic analysis will shed light on the user experiences and usability of VR in a psychiatric ward. Furthermore, data will be gathered retrospectively from three different wards with beds in secluded areas regarding the amount of coercion used from 2016 throughout 2018, where VR was implemented during 2018. Data will be handled as a non-randomized cluster trial where different units function as control cases for each other, as VR was implemented at different times in each unit. The qualitative analysis will be used to inform the quantitative analysis if possible.

**Results:** will be analyzed and discussed.

### Internet-delivered Mindfulness-Based Cognitive Therapy (iMBCT) for anxiety and depression in breast and prostate cancer survivors - a randomized controlled trial

Eva Rames Nissen, Aarhus University, Denmark | #74

**Objectives/purpose:** Mindfulness-based interventions (MBIs) have been shown to reduce distress in cancer patients and survivors, but challenges remain to make MBIs available to patients in need. We therefore developed and tested the efficacy of an internet-delivered mindfulness-based cognitive therapy (iMBCT) program for psychological distress in cancer survivors.

**Methods:** 150 breast (N=137) and prostate cancer (N=13) survivors were randomized (7:3 ratio) to iMBCT (N=104) or waitlist (N=46). The primary outcomes of anxiety (STAI-state) and depression (BDI-II) were assessed at T1 (baseline), T2 (5 weeks), T3 (10 weeks/post-intervention), and T4 (6 month follow-up). Intent-to-treat group x time effects were evaluated with mixed linear models (MLMs).

**Results:** Statistically significant effects were found for both anxiety (Cohen's  $d=0.45$ ;  $p=0.017$ ) and depressive symptoms ( $d=0.42$ ;  $p=0.024$ ) at T3. The effects were maintained at T4 for anxiety ( $d=0.40$ ;  $p=0.029$ ), but not for depressive symptoms ( $d=0.28$ ). No moderating effects were found of cancer type ( $p = 0.39-0.70$ ). In subsequent (zero effect from baseline) sensitivity analyses conducted due to uneven dropout (iMBCT:30.8%; waitlist:17.4%), effects remained statistically significant for anxiety ( $d=0.39/0.35$ ;  $p=0.02/0.03$ ), but not for depressive symptoms ( $d=0.29$ ;  $p=0.07$ ).

**Conclusion and clinical implications:** Effects of iMBCT were robust for anxiety, but not for depression. Furthermore, effects for anxiety were maintained at follow-up and comparable to those reported in meta-analyses for MBIs with cancer patients and survivors (Hedges's  $g=0.37$  and  $0.26$ ). iMBCT may be offered as an alternative to face-to-face MBCT to cancer patients and survivors suffering from anxiety. Further studies on efficacy for depression are needed.

### Psychological internet intervention aimed to coping with occupational stress during digital transformation in organization: protocol for a pilot study

Ewa Makowska-Tłomak, SWPS University and PJAiT university, Poland | #148

Organizational digital transformation may increase occupational stress due to unpredictability of the transformation process, uncertainty about results of the transformation, and due to interference with other strategic and operational processes in organizations. Social support for employees is often neglected during transformation-induced changes. Providing social support for employees may prevent them from developing job burnout and may enable employees to increase work engagement. Social support should be personalized and accessible to become an effective method of coping with stress. The study aimed to developing and evaluation of a psychological internet intervention dedicated to coping with digital transformation stress by means of providing personalized social support for employees. Based on the Job Demand-Control-Support model (Karasek, 1979) the study will test the effectiveness of the e-intervention in two groups: 1) employees perceiving high demands due to digital transformation and 2) employees reporting low demands due to digital transformation in organization. This presentation will report the content of the e-intervention and the study protocol for testing feasibility and effectiveness of the intervention.

### Research protocol for a randomized controlled trial evaluating the efficacy of Be a Mom in promoting the mental health of Portuguese postpartum women

Fabiana Monteiro, CINEICC - Center for Research in Neuropsychology and Cognitive Behavioral Intervention, Portugal | #51

Postpartum women who are not at an immediate risk of developing postpartum depression still face several challenges that may have a negative effect in their mental health, such as dealing with child care tasks, changes in marital and social relationships and transitioning back to work. One effective way of overcoming the practical barriers to help seeking and improve the utilization of psychological intervention among these women is delivering it through eHealth technologies. e-Mental health tools for mental health promotion can be delivered at a very low cost and have been shown to have long-term positive outcomes beyond the reduction of psychopathological symptoms, while also contributing to an efficient use of health services.

Be a Mom is a short-term, self-guided, eHealth intervention for the promotion of mental health in postpartum women. This web-based intervention is grounded on cognitive-behavioral therapy principles, considers the specificities of the perinatal period, and is centered on the enhancement of psychological competences such as acceptance and self-compassion. A randomized controlled trial will be conducted to assess the applicability and effectiveness of Be a Mom in low-risk women. Women will be recruited online and will be eligible to participate in the study if they are in the early postpartum period (up to 3 months postpartum), if they read and speak Portuguese and are residents in Portugal, if they have internet access at home and if they presented no risk factors for PPD (Postpartum Depression Predictors Inventory-Revised  $\leq 5$ ). Participants who meet the eligibility criteria will be randomly assigned to the eHealth intervention or to the control condition. Post-intervention improvements and long-term effects on individual (e.g., positive mental health, self-empowerment, depressive and anxiety symptoms), marital (e.g., relationship satisfaction) and maternal outcomes (e.g., perceived self-efficacy) will be considered, along with Be a Mom's feasibility and usability, users' satisfaction, as well as its cost-effectiveness.

If positive benefits are demonstrated, results will contribute to the existing research on the topic of eHealth technologies applied to mental health, while providing the Portuguese population with access to an empirically-validated eHealth CBT intervention for maternal mental health promotion.

### Student mental health and how to improve it! Results of the Caring Universities project

Felix Bolinski, Vrije Universiteit Amsterdam, the Netherlands | #174

**Background:** International studies have shown that college students are an at risk population for the development of mental health conditions, such as depression and anxiety. However, little is known about the prevalence rates of mental health conditions in college students, especially from non-US samples. Moreover, despite the fact that Internet-based interventions for depression and anxiety have been found to be effective in adult populations, these have less often been tested in college students.

**Methods:** The Caring Universities project is embedded within the WHO World Mental Health International College Student (WMH-ICS) surveys. It combines epidemiological with effectiveness research. All first year students at two Dutch universities were invited to complete an online survey with validated instruments assessing a variety of mental health conditions, once in 2018 and again in 2019. Subsequently, those with increased symptoms of depression were invited to participate in a two-arm randomized controlled trial (RCT). Therein, a transdiagnostic individually tailored Internet-based intervention for depression and anxiety was compared to a control group receiving care-as-usual (CAU) group. The primary outcomes of the RCT were the PHQ-9 and GAD-7.

**Results:** During the conference, the data of the first participant cohort will be presented. 562 participants completed the WMH-ICS survey in 2018. Until the moment of this submission, 90 of these completed the 2nd round in 2019. Moreover, the preliminary results of the post-intervention assessment of the 41 participants randomized into the trial will be presented.

**Discussion:** The Caring Universities project aims at filling the gap in information on prevalence rates of mental health conditions in non-US college student samples. Moreover, to our knowledge this is the first attempt at providing an Internet-based intervention as a result of such a screening instrument. Implications for research and practice will be discussed.

### Exploring the constructs usefulness and ease of use for an ICBT treatment: The case of adolescents with social anxiety disorder

Fredrik Enoksson, Karolinska Institute, Stockholm, Sweden | #175

**Introduction:** Research studies of Internet-delivered Cognitive Behavioural Therapy (ICBT) for children and adolescent indicate that such treatments can be feasible. However, few studies have explored the users' perspective of such ICBT treatments. This study explores the association of the constructs usefulness and ease of use, from the Technology Acceptance Model, to the following aspect of ICBT treatment: treatment activity, adherence, treatment outcome, treatment satisfaction, and therapist time.

**Methods:** The associations between the two constructs and the aspects have been explored in a study where 30 adolescents, diagnosed with Social Anxiety Disorder, were included in an ICBT treatment together with at least one of their parents. The treatment lasted for 12 weeks. Data upon perceived usefulness (PU) and perceived ease of use (PEOU) of the ICBT treatment was gathered 3 weeks into treatment, from both patients and parents. Other data were collected post treatment, where data on adherence and treatment outcome were clinician-rated; treatment satisfaction rated by patient and parent separately; treatment activity and therapist time was automatically gathered by the ICBT platform. A bivariate analysis, using Pearson's correlation was carried out in order to explore the associations PU and PEOU have with the aspects presented above.

**Results:** The results show moderate to strong associations between patients' PU and treatment satisfaction, adherence and treatment activity. No significant association could be found to PEOU. However, for the parents a moderate association for PEOU could be found to both PU and treatment activity. A moderate association was found between PU of the parents to both patients' adherence and treatment activity. Furthermore, patients' PU is moderately associated with parents' satisfaction of the treatment. No association could be found to treatment outcome.

**Discussion:** The results suggest that how patients perceive the usefulness can be a predictor of adherence and treatment activity, but also how satisfied they will be. Furthermore, how parents perceive the usefulness also seems to affect patients' adherence and treatment activity. This suggests that in order to make sure that the patient is active in the treatment the usefulness will need to be considered. Thus, to consider the user perspective is important when designing an ICBT treatment. A more thorough analysis of the result will be given at the oral presentation.

### Online counseling for female Mexican immigrant victims of domestic violence in the United States

Georgina Cardenas-Lopez, Universidad Nacional Autonoma de Mexico | #23

Violence refers to the intentional use of physical force and threats against oneself or another person which results in physical or psychological damage, developmental problems, and even death (World Health Organization, 2019). Because of the social context and their immigration status, immigrant women are even more vulnerable and susceptible to suffering from domestic violence. Migration represents a stressful process with situations that migrants must deal with, such as a language barrier, the breakdown of family and social ties, feelings of loss and adjustment to a new environment.

In Mexico, positive results were found concerning the efficacy of an online cognitive-behavioral intervention for the treatment of depression (Flores, Cárdenas, Durán, & de la Rosa, 2014). Regarding the treatment of these disorders, distance counseling offers several benefits for the emotional well-being of the patients, including receiving attention from a counselor of their nationality, language and idiosyncrasies, the overcoming of geographical barriers, the possibility of both synchronous and asynchronous communication, etc. Responding to this need for psychological attention, our team started a virtual and telephone cognitive-behavioral counseling program for an emotional well-being project (CoVIBE), provided by Mexican counselors for Mexican immigrant women residing in the United States.

This paper will present outcomes concerning the efficacy of an online intervention based on remote counseling for the well-being of Mexican immigrant women residing in the United States. **Methods:** The sample included 100 female victims of domestic violence, with a mean age of 38 years. The main diagnoses were anxiety, adjustment disorder, and post-traumatic stress disorder. Pre-post evaluations were carried out. General measures to assess recovery were obtained using the Beck Depression Inventory (Beck, 1961), the Beck Anxiety Inventory (Beck & Steer, 2011) and the Quality of Life Scale (WHOQOL-BREF; WHOQOL Group, 1998). **Results:** There was a significant difference in anxiety measures before ( $M = 21.73$ ,  $SD = 6.64$ ) and after the counseling interventions ( $M = 12.53$ ,  $SD = 5.92$ ,  $t(202) = 6.53$ ,  $p < 0.05$ ). The initial depression scores ( $M = 21.19$ ,  $SD = 5.95$ ) also decreased significantly following the treatment ( $M = 12.38$ ,  $SD = 5.74$ ,  $t(202) = 6.16$ ,  $p < 0.05$ ).

### Usability guidelines for developing and evaluating web-based eHealth interventions: Establishing a practical framework

Gustav Bøg Petersen, University of Southern Denmark | #124

**Background:** Despite the fact that problems with usability constitute a major challenge to the implementation of new eHealth technology, the field of eHealth, and specifically web-based interventions, is lacking usability guidelines for development and evaluation of platforms.

**Objective:** The aim of present study is to begin closing this gap by creating a set of eHealth specific usability guidelines for development and evaluation of web-based interventions.

**Methods:** Knowledge about usability was gathered from the fields of e-learning, emotional design, and human-computer interaction in a top-down approach. This knowledge was synthesized into usability guidelines for web-based interventions which were tested on an existing web-based intervention for patients with health anxiety, using the heuristic evaluation method.

**Results:** Nine guidelines were developed. The subsequent analysis of the web-based intervention showed that the guidelines were applicable, and able to reveal several important usability problems.

**Conclusions:** Advantages associated with the multidisciplinary and breadth of the guidelines were discussed together with the general process of adapting theory from other fields to eHealth. Methodological limitations were related to the subjectivity embedded in the study. Recommendations for future research on usability in eHealth are made.

### SELPASS: Checking the functionality, practicality and acceptance of an app against depression

Gwendolyn Mayer, Heidelberg University Hospital, Germany | #100

**Background:** There are already some apps and online programs against depression available. But up to this moment, no app offers individualized help due to a detailed everyday mood tracking, which covers all aspects of depressive symptoms according to the national disease management guidelines.



**Objective:** The present study is a feasibility study with the aim of examining the app SELFPASS (self-management for patients with depression: Self-administered Psycho Therapy SystemS) developed in a BMBF funding project in terms of functionality, suitability for daily use and acceptance. This application was designed to improve the self-management of patients with depression on the basis of an individualized daily score. An own catalogue of mood related questions was developed in order to cover all aspects of depressive symptoms. A set of Cognitive Behavioral Therapeutic interventions were digitized.

**Methods:** Inpatient and outpatient patients with depression and students were asked to test SELFPASS over a period of 5 days each. All participants had to complete a daily self-assessment. Based on the results an individualized CBT intervention was offered, the participants could choose between a diary, relaxation exercises, activity recording, a cognitive restructuring intervention and some exercises for concentration. Afterwards several evaluation sheets were completed.

**Results:** Work in progress. Preliminary **Results:** Up to 20 patients and 30 students participated in the study. The participants gave valuable feedback to improve some functions of the app. The usage of the app could be integrated into the daily life of the participants. The feasibility and acceptability could be shown.

**Conclusions:** SELFPASS is an app against depression, which could be integrated into the daily life of inpatient and outpatient patients and students. Feasibility and acceptance could be demonstrated, yet more interventions will be offered in order to deliver personalized help for individual symptoms. Here the feedback of the patients made substantial contributions in an ongoing development process.

### Development of ICBT for concerned caregivers in Lithuania

Ieva Biliunaite, Linköping University, Sweden | #52

**Background:** Research on carers' experiences of nursing for family members has been recently increasing. Most of the studies so far have been done in Western Europe, with Eastern Europe being somehow neglected in the field. That is why, due to its economic and cultural similarities to its neighbouring countries (such as Latvia and Poland), in this study Lithuania is the main focus of interest. Expectancy of autonomous life in Lithuania is among one of the shortest in Europe, which indicates an increasing number of people requiring assisted living. It is a common practise that elderly or chronically ill individuals are being taken care of by family members. Internet based Cognitive Behavioural Therapy (ICBT) could be a way to reach out to this population. Since internet use is widely spread out through the country and majority of the population know how to use a computer, this could potentially be not only more effective time, but also, cost wise.

**Methods:** a pilot study is being planned in collaboration with the University of Vilnius. As a number of ICBT studies have been run at the University of Linköping, currently existing materials will be translated and culturally adapted to fit the population of interest. Current expectation is to form treatment program consisting of 8 modules, where one module would be accessed each week.

**Clinical relevance:** improve overall well-being of family carers as well as to set grounds for further research into ICBT in Lithuania.

### Three decades of Internet-based Interventions for the Treatment of Depression: A Systematic Review and Meta-analysis

Isaac Moshe, University of Helsinki, Finland | #87

2020 will mark 30 years since the first paper was published on the use of computer-based therapy for the treatment of depression by Selmi and colleagues (1990). Since then the field has evolved rapidly: the medium has shifted first to internet- and in recent years to mobile-delivery and the amount of research has increased considerably. Many RCTs and meta-analyses have demonstrated the efficacy of internet-based interventions (IBIs) on the treatment of depression employing a variety of different therapeutic techniques (e.g. CBT), target groups (e.g. elderly), delivery formats (e.g. guided self-help) and intervention components (e.g. sensor tracking).

We think it is time to take a step back and review how things have progressed before we embark upon the next phase of our research endeavor. Therefore, this systematic review and meta-analysis aims to investigate the following research questions:

- (1) Has there been a change in the effectiveness of IBIs on the treatment of depression over time?
- (2) How have study quality, investigated target groups, delivery formats and intervention components evolved over time?
- (3) What variables are responsible for moderating changes in reported effect sizes?

To the best of our knowledge, this is the first study that reviews the field of internet interventions from a temporal perspective. In so doing, it will not only report on how the effectiveness of IBIs has changed over time but also shed light on where research has been both over- and under-focused over the past three decades, alerting researchers and funding bodies to important research questions that have not been given sufficient attention and exposing methodological shortcomings affecting the field, thus providing valuable guidance on next steps for the field.

At the time of abstract submission, this study is still ongoing with results expected in June 2019.



## Perceived stress and quality of life after a personalized tele-based coaching for agriculturists (TEC-A) - First results from a randomized controlled trial

Janika Thielecke, Friedrich-Alexander-University Erlangen-Nürnberg, Germany | #177

**Context:** Green professions are related to stressful, economically difficult and seasonal working conditions, which contribute to an increased risk of developing depression. This study is part of a model project by a German social insurance company (SVLFG) for implementing internet- and tele-based preventive services. This study aims to evaluate the clinical and cost-effectiveness of a personalized tele-based preventive service in reducing depressive symptom severity and preventing depression in people in green professions.

**Methods:** In a two-armed randomized controlled trial (N=312) with follow-ups at post-treatment (6 month), 12-, and 18-month entrepreneurs in green professions, their collaborating family members and working pensionaries with elevated depressive symptoms (PHQ-9  $\geq 5$ ) are randomly allocated to an intervention group (tele-based coaching) or enhanced treatment as usual (psychoeducation and routine care information). The primary outcome of the study will be depressive symptom severity (QIDS-SR16). Secondary outcomes include quality of life (AQoL-8D) and perceived stress (PSS-10).

**Intervention:** Participants in the intervention group will receive up to 20 personalized telephone-delivered sessions (25-50 minutes) over a 6-month period from a psychologist with further therapeutic training. The tele-based coaching will be enriched by referrals to on-site coaching or social and health services (e.g. socioeconomic counseling for farmers), respectively, if needed.

**Results:** Recruitment is ongoing since December 2019. Preliminary results on secondary outcomes at post-treatment will be presented at the conference.

**Conclusions:** This study is the first nationwide RCT evaluating the effectiveness of a tele-based preventive service tailored to the needs of green professions. The analysis of the secondary outcomes will give a first hint on the effectiveness of the intervention. In the long term, implementation of tele-based coaching as preventive care could lead to reductions in disease burden and health care costs.

## MePlusMe online support system for HE students: Feasibility study results.

Jelena Lubenko, Riga Stradiņš University, Latvia | #166

**Objectives:** Psychological and study skill difficulties experienced by students in higher education can lead to poor academic performance, mental health problems, unhealthy lifestyle and risk behaviors, as well as reduced study satisfaction and drop out from university. Students are limited in seeking help from professionals. As university students are highly connected to digital technologies web-based interventions could be used to improve students' mental health. The aim of this study was to test a web-based support system called MePlusMe offering individually tailored packages with psychological and study skill techniques according to person's needs.

**Methods:** RSU students were recruited to participate in MePlusMe feasibility study project via University's information channels. 138 students (71% female, mean age – 22.6) filled in socio-demographic questionnaire and self-report measures of depression (PHQ-9) and anxiety symptoms (GAD-7), mental well-being (Edinburgh-Warwick Mental Well-being scale), academic self-efficacy (Academic Self-Efficacy scale) before they started to use MePlusMe web-based system. The follow-up measures were administered on the 2nd, 4th and 8th weeks.

**Results:** Data analysis showed that 19.9 % of study participants experienced low anxiety symptoms, 42.4 % – mild anxiety symptoms and 10.6% - severe anxiety symptoms (M=8.36; SD=4.55). 23.8% revealed minimal symptoms of depression, 61.3% - mild to moderate symptoms of depression, 14.3% - severe symptoms of depression (M=8.77; SD=5.15). Both depression and anxiety rating were significantly negatively correlated with rating of mental well-being ( $r=-.48$ ;  $r=-.66$ ,  $p < .0001$ ) and academic self-efficacy ( $r=-.36$ ;  $r=-.56$ ,  $p < .0001$ ). Preliminary results indicated statistically significant changes in depression and anxiety symptoms in students who have participated in MePlusMe project and have used their packages of animated video techniques in the period of 2 months.

**Conclusions:** The research results allow describing the main symptoms that help-seeking students are experiencing as well as identify the main difficulties that should be addressed by Student Support Services. MePlusMe web-based system, which was developed to support students during their time at university, addresses mild to moderate psychological difficulties, as well as study skill difficulties experienced by higher education students and therefore could be an appropriate solution.

## Exploring the usefulness of testimonials as a tool to improve the acceptance of e-mental health interventions among university students: preliminary results of a pilot RCT.

Jeanette Wopperer, University of Hagen, Germany | #20

**Background:** Internet-based and mobile interventions (IMIs) can help students to effectively cope with stress, but lacking awareness represents a barrier for adoption. While research suggests acceptance-facilitating effects of information, little is known about the additional value of testimonials in improving the uptake of IMIs for students.

**Objective:** The aim of this cross-sectional pilot study was to explore whether (1) user testimonials improve the acceptance of IMIs among students, and (2) to assess the ratio of behavioral intentions to use IMIs for employees or students and actual registration rates.

**Methods:** 205 students from German universities (82% distance-learning, age  $M=34.05$ ,  $SD=10.1$ ; 76% female) were randomly assigned to one of three intervention groups that received text-based information plus testimonials on either a fictitious IMI ( $n=53$ ) or two evidence-based IMIs (GET.ON for employees,  $n=51$ ; StudiCare for students,  $n=49$ ) or to a control condition (information only,  $n=52$ ). Acceptance was operationalized as usage intentions at baseline and post-intervention. Testimonials were rated regarding their credibility and similarity with narrators. Interested participants could sign up for either the StudiCare or GET.ON resilience program.

**Results:** Analyses of variance showed no significant differences in acceptance between the testimonial groups and the control condition at baseline and post-assessment (all  $p>.05$ ). However, mediation analysis showed a more positive influence of information plus testimonials on acceptance of IMIs for students than for employees. This effect was fully mediated by perceived similarity (95% CI .17, .83). Perceived similarity significantly predicted acceptance, even when controlling for baseline scores ( $\beta=.14$ ,  $p<.01$ ). The gap between intended and actual registration was smaller for GET.ON (69% of  $n=43$ ) than for StudiCare (51% of  $n=37$ ).

**Conclusion:** This study indicates no added value of testimonials in fostering the acceptance of IMIs compared to information only, whereas perceived similarity with StudiCare testimonials explained greater IMI acceptance. Although students appeared to accept IMI contents tailored to both students' and employees' needs, they rather registered for GET.ON, potentially due to a higher proportion of employed distance-learning students in this sample. Future efforts should clarify what kind of target-specific narratives exactly can improve the uptake of IMIs among students.

## Testing whether the physical appearance of the avatars evokes concepts related to physical activity practice

Jessica Navarro, University of Valencia, Spain | #151

The literature suggests that virtual reality environments (VRE) that include avatars (virtual representations of the person) influence the behavior of people, being useful for learning behaviors such as physical activity (PA) practice. However, it is important to take into account the physical appearance of the avatar. According to the Proteus effect proposed by Yee and Bailenson (2007), avatars will influence the behavior of individuals according to the avatar's identity. If the avatar is intended to influence the conduct of PA practice, then the avatar should have a sporting identity. For this reason, it is important to consider what the avatar evokes in individuals before being included in a VRE. In this study, we analyze how the physical appearance of the avatar (sportswear/formal clothing), which will later be included in a VRE, evokes different concepts in the participants. To do this, a counterbalanced study was designed in which 314 adults participants ( $M = 34.27$ ;  $SD = 11.58$ ) evaluated different avatar photographs via the Internet (some participants first saw the avatars with the sportswear and other participants saw avatars with formal wear). After viewing the photographs, participants were asked for three concepts that would come to mind when they saw these avatars. In addition, they filled out an ad hoc questionnaire to analyze whether the avatars evoked specific concepts related to PA (self-efficacy, motivation, enjoyment, vigor and health). A T-test for related samples was performed for each of the evaluated concepts. In addition, a language analysis program, LIWC2015, was used to analyze the concepts reported by the participants. The results showed that avatars that had been designed with sportswear evoked more concepts related to PA, (exercise  $p = .00$ , PA  $p = .00$ , fun  $p = .00$ , pleasure  $p = .00$ , physical ability  $p = .00$ , motivation  $p = .00$ , sports interest  $p = .00$ , comfort  $p = .00$ , and flexibility  $p = .00$ ), compared to avatars that had been designed with formal wear. This study highlights that the avatar's physical appearance influences participants' perceptions. In conclusion, the avatars designed in this study are suitable to be included in VRE aimed at influencing PA practice, constituting an important tool to be included in broader interventions.

## A.I and suicide prevention - An E-Health Application for Suicidal Prevention

Jette Louise Skovgaard Larsen, DRISP, Denmark | #182

E-health applications have the potential to let the patient access and follow their mental and physical conditions. E-health applications can also provide feedback to patients and help them to change their behavior. This project work on a mobile application (app in short) for suicide prevention. The aim of this poster is to describe the architectural solution and the major challenges and barriers during the process of programming.

It is our ambition to develop not only an electronic health (e-health) approach but also an intelligent health (i-health) paradigm. The principle is to develop a self-help tool on an A.I platform with a supporting avatar used by the patient to manage their health status. The use of a powerful A.I tool at home has the potential to overcome well-known limitations as stigma and geographical problems in a clinical context. However, developing an efficient e-health app is challenging, especially for sensible topics such as suicide prevention. The application must be developed carefully (data protection, user-involvement, question choice) in order to increase its acceptance by the patients. But it is also challenging regarding programming issues and the data architecture is crucial.

The original Myplan will be used as backbone and the new app will allow patients to collect passive (geographical movement, sleep pattern and so on) and active data (questionnaires and self reported data) about their health status. The data will be flashed on a dashboard, which will give the patient the data-control and the empowerment. The data will also be collected by an A.I server, which will build a personal algorithm. The goal is to let the supporting avatar pop up every time there is a fluctuations in the relevant patterns. And at the same time let the avatar learn what the fluctuations means and what the patient prefer as coping strategies by interviewing the patient.

After a while the avatar should be trained enough to predict the patients behaviors and start pushing the preferred coping strategies to the patient before the fluctuations takes place. In that way the project hope to help the patient in time before a personal crisis occurs.

### Optimising engagement with app-based alcohol interventions: Results from a randomised controlled trial evaluation of the BRANCH app targeting harmful drinking in young adults

Joanna Milward, King's College London | #38

**Context:** Electronic screening and brief intervention (eSBI) has demonstrated some effectiveness in reducing harmful alcohol consumption. However, a challenge remains as to how to sufficiently engage users with app-based eSBI, as trials demonstrate low engagement rates. Increased engagement has been associated with improved clinical outcomes in both the alcohol and broader behavior change literature. Identifying novel methods to engage users is needed to improve the effectiveness of app-based eSBI interventions.

**Methods:** Participants were recruited through Facebook and screened and consented via an online tool. Inclusion criteria was: 18-30 years old, drinking harmfully (AUDIT-C score >7) and UK-based. Participants were randomised to an eSBI only or eSBI plus Engagement Promoting Strategies (EPS) version of the BRANCH app. Number of logins was measured at 28 days post-randomisation. Change in drinking was measured by the AUDIT-C score at baseline and 6-month follow-up.

**Intervention:** BRANCH included: A drinking diary, personalised feedback, goal setting functions for alcohol reduction and information on risks. It was also optimised for engagement including: Tailoring, reminders, a Twitter style newsfeed and gamification features.

**Results:** 569 participants were recruited. There were no main effects of change in logins between arms. Users of the eSBI plus EPS app did not show a significant reduction in harmful drinking score as measured by the AUDIT-C score compared to users of the eSBI only app, nor did engagers who logged into BRANCH more than once show a significant reduction in harmful drinking compared to non-engagers (logged in once).

**Conclusions:** Engagement with eSBI in young adults continues to be a barrier for designing effective eSBI apps. The associations between EPSs, engagement and drinking outcomes remain unclear. The low engagement rates with eSBI apps may be due to a lack of exposure to the active behaviour change components, resulting in limited effects. Researchers and developers need to consider the balance between the intensity of the eSBI intervention and high levels of user burden which subsequently promotes disengagement.

### Dealing with difficult emotions: mediators of change in a transdiagnostic, Internet-based treatment

Johanna Boettcher, Freie Universität Berlin | #73

**Background:** The emotional disorders, including anxiety, depressive and somatic symptoms disorders, are highly comorbid. Two thirds of the patients meeting criteria for an anxiety disorder also fulfill the criteria of depression and vice versa. This high comorbidity can be explained by shared, transdiagnostic processes. Difficulties in dealing with strong emotions are one prominent example of transdiagnostic processes. The current study investigates changes in transdiagnostic processes in a 10-week therapist-guided internet-delivered intervention based on the Unified Protocol, a transdiagnostic treatment approach for the emotional disorders. We evaluate the mediating role of changes in mindfulness, cognitive flexibility, and emotion avoidance.

**Methods:** In an RCT we compare the intervention with a wait-list-control group. We plan to recruit a total sample of N=180, including 60 participants with a primary diagnosis of depression, 60 with an anxiety disorder, and 60 with a somatic symptom disorder. Diagnoses are determined with a structured interview (ADIS) via telephone. Assessments of outcomes are at pre-, mid- and post-treatment, after each of the ten modules, as well as at 1-, 3- and 12-month follow-up. Mindfulness, cognitive flexibility, and emotion avoidance are assessed at pre-treatment and after the respective modules targeting these processes. Changes in process measures and subsequent changes in symptoms are subjected to mediation analyses.

**Results:** The study started in December 2018 and is currently ongoing (n=83 randomized). We will present first results of mediation analyses and will test whether improvements in the different aspects of dealing with difficult emotions lead to changes in mental distress. We will also explore the process-outcome relationship in different subgroups and for different outcome domains.

**Discussion:** Studying transdiagnostic interventions in an online setting offers the unique opportunity to investigate mediators of change across different disorders in a highly controlled setting. The current study allows us to test whether certain interventions evoke the proposed change in the assumed psychopathological processes and whether these changes are indeed associated with symptomatic improvement across the different domains of emotional disorders.

### Effectiveness of Tailored Implementation of Internet-based Cognitive Behavioural Therapy (iCBT) in Routine Practice: Study Protocol of the Trial Site GET.ON as Part of the EU-project ImpleMentAll (IMA)

Johanna Freund, Friedrich-Alexander-University Erlangen-Nürnberg, Germany | #134

**Context:** Internet-based Cognitive Behavioural Therapy (iCBT), an innovative psychotherapeutic intervention, has been found to be effective for the prevention and treatment of mental health disorders. The aim of the ImpleMentAll (IMA) EU

project is to examine the effectiveness of tailored implementation (the ItFits-toolkit) compared to usual implementation of iCBT in routine practice in twelve implementation sites in nine countries. The German trial site GET.ON is implementing seven guided internet-based health trainings as part of a nationwide prevention project for mental health disorders. The interventions are provided by a health insurance company (SVLFG) for their insured people, who are working in the green professions (e.g. farmers, gardeners, foresters).

**Methods:** The ItFits-toolkit which functions as an online self-help toolkit guides users through the process of tailoring site-specific implementation strategies and will be introduced in these 12 implementation sites at randomly chosen moments following a stepped-wedge design. The main research hypothesis is that the ItFits-toolkit will lead to better implementation outcomes than Implementation-as-Usual does. Implementation effectiveness (i.e. uptake and the extent to which the GET.ON trainings are regarded as being a normal part of practice of the employees) and its efficiency (i.e. implementation costs in relation to uptake and normalisation outcomes) are measured. Furthermore, organisational readiness for change will be investigated to corroborate the uptake and normalisation outcomes. The involved participants are employees at GET.ON (e.g. e-coaches who deliver the iCBT service) and at the SVLFG (e.g. field site workers and call center agents who advise on the new prevention services).

**Intervention:** The insured people can choose between seven guided internet-based CBT interventions which address depressed mood, anxiety symptoms, stress, chronic pain, etc. All trainings have been adapted to the specific target group. After an active training phase of approximately two months there is a result stabilizing phase for 12 months. Guidance is done by an e-coach (supervised psychologists in CBT training).

**Results and Conclusions:** In research (current state of the GET.ON site since trial start will be presented, data collection is running from June 2018 until September 2020 and recruitment ended in October 2018). If the implementation succeeds, health care in rural areas will sustainably be improved.

### Attitudes towards e-mental health of health care professionals in psychiatric inpatient routine care in Germany: Using the example of Moodbuster

Julia Sander, DGPPN e.V., Germany | #157

Research exploring the potential benefit of using internet-based interventions in the treatment of people with severe mental illness in the context of inpatient care is scarce. We investigate implementation barriers and facilitators in an inpatient care setting with a sample of mental health professionals in Germany using Moodbuster online therapy. Moodbuster is a CBT-based treatment for mild to moderate depression symptoms. Currently data is collected in several hospitals in Germany countrywide: N= 10 hospitals, resp. 100 doctors and/or therapists and/or nurses. Moodbuster online therapy will be introduced as an example for e-mental health to the professionals. Opinions of professionals on feasibility, acceptance, and potential of online therapy for mental disorders in general are studied using the ATiPP questionnaire (Tonn et al., 2017). Usability of Moodbuster will be measured by USE questionnaire (Lund, 2001). Results will produce insights into opinions and attitudes of health care professionals towards use of e-mental health applications in inpatient care in Germany. We will specify hindering and facilitating factors of implementation of e-mental health in inpatient care settings. Further, hints concerning necessary modifications of Moodbuster in order to fit an inpatient care setting in Germany will be identified.

### Efficacy of an internet intervention for internet use disorder: preliminary results of a randomized controlled trial

Karina Saruhanjan, Friedrich-Alexander University Erlangen-Nürnberg, Germany | #50

**Context:** An internet intervention to treat individuals with Internet Use Disorder (IUD) appears contradictory at first. But an easily accessible and attractive treatment option is crucial as the target group is characterized by low levels of treatment motivation.

IUD is emerging as an increasing societal concern as it is associated with reduced quality of life and mental health comorbidities such as depression, substance abuse, or anxiety. Evidence-based treatment options are, however, scarce due to the novelty of the diagnosis. Internet interventions may be an effective means to deliver psychological treatment to individuals with IUD as they address individuals affected in their online setting. The aim of the study is to evaluate the efficacy of a newly developed, guided internet intervention for IUD.

**Methods:** In a two-armed randomized controlled trial (N = 130), individuals showing problematic internet use patterns (Internet Addiction Test  $\geq 49$ ) will be randomly allocated to the internet intervention or a Waiting Control Group. Assessments will take place at baseline, 7 weeks, 6- and 12 months after randomization. The primary outcome is internet addiction (IAT). Secondary outcomes include quality of life, depressive symptoms, anxiety, and other psychosocial variables associated with IUD.

**Intervention:** The intervention consists of seven sessions: Goal setting and motivational interviewing, impulse control, problem solving, cognitive restructuring, self-worth, relapse prevention and a booster session. Participants are supported by an eCoach who provides individual feedback after completion of each session. Participants can choose between several elective sessions based on individual need and opt to receive motivational messages and exercises via app.

**Results:** Sample characteristics and preliminary results will be presented.



**Conclusions:** This is the first study to evaluate an internet intervention for IUD, which could be a promising first step to reduce individuals' disease burden.

### A qualitative study of dropout from an internet-delivered CBT intervention for adults with symptoms of depression and anxiety

Kate Lawler, SilverCloud Health and E-Mental Health Group at Trinity College Dublin | #126

**Context:** A vast body of research has established the efficacy of online interventions in treating depression and anxiety. Despite this, attrition from treatment remains a problem associated with internet-delivered cognitive behaviour therapy (iCBT) programs, the reasons for which are poorly understood. The current literature lacks in-depth studies of the subjective reasons for and patient experiences of online treatment drop-out.

**Methods:** The present study is a nested semi-structured interview exploring the subjective experiences of drop-out from iCBT within a larger RCT on online treatments for depression (Richards et al., 2018). The iCBT intervention was offered to patients as step 2 level treatment in the Improving Access to Psychological Therapies (IAPT) stepped-care model. The interviews were conducted with 15 patients who had dropped-out of the iCBT intervention and, therefore, did not complete all the modules. An initial literature review of existing attrition research produced four broad domains of investigation around which the interview was structured: Technology, Motivation, Content and Support. The interviews will be qualitatively analysed using the Descriptive-Interpretive method where these four domains will be explored (Elliott & Timulak, 2005).

**Results:** Data analysis for this study is ongoing and will be presented at esrii 2019.

**Conclusion:** The current study seeks to understand the patient's subjective experience of dropping-out from an iCBT intervention in step 2 IAPT, explore what could have helped adherence and establish what type of patient is most suited to iCBT. The results of this study will supplement the existing literature relating to treatment attrition.

### Guided CBT-based internet intervention (iSOMA) for multiple somatic symptoms: study design and feasibility of a RCT in university students

Katja Böhme, University of Mainz, Germany | #102

Medically unexplained symptoms and somatoform disorders are surprisingly prevalent among university students. At the same time, individuals rarely access traditional psychosocial support. Thus, internet-based and mobile-based interventions (IMIs) may be promising, low-threshold instruments. However, studies using IMIs in polysymptomatic (somatoform) conditions somatic are missing. This study investigates the feasibility and efficacy of a newly developed transdiagnostic CBT-based online intervention (iSOMA) in a sample of German speaking university students with multiple somatic symptoms as part of the European health platform "StudiCare". In a two-armed RCT, the intervention group (IG) receives the eight-week training with weekly written therapist feedback (guided). After a waiting period of eight weeks, the waitlist control group (WLCG) receives iSOMA with guidance on demand. Eligible are students with a PHQ-15 score of  $\geq 4$ . iSOMA consists of seven text-, audio- and video-based consecutive modules, as well as optional text messages (SMS-coach). Data collection (self-report) takes place at baseline (t0) and 8 (t1) and 16 weeks (t2) after randomization. Clinical outcomes include somatic symptom burden, psychological comorbidities, functioning and attitudes towards psychotherapy. Feasibility is mainly determined by intervention satisfaction and adherence. The trial started in august 2018, the target sample size is N = 154. Current baseline data of n = 61 participants (83.6% female, 25.34 years (SD = 6.27) indicate a moderate somatic symptom burden (PHQ-15; M = 11.20, SD = 3.74) with average symptom duration of 3.26 years (SD = 3.89). 60.7% reported daily use of medication. The most common self-reported diagnoses were mental (31.3%), musculoskeletal (23%) and neurological disorders (21.3%). One fourth (22.9%) reported being in parallel psychosocial care. In the CEQ, 62.3% expected that iSOMA could be able to improve well-being. 17 out of 27 participants (63%) completed at least half of the training sessions. Of those, 78.6% were "largely" or "very satisfied" with iSOMA (CSQ-I). Reasons for dropout included lack of time and additional distress during the intervention. Current results indicate the feasibility and acceptability of iSOMA among students with multiple somatic symptoms. Further analyses on the efficacy, its moderators (e.g. therapeutic alliance) and subgroup analyses providing information on the differential indication are planned.

### Predicting the acceptance of participating in iCBT for body dysmorphic disorder.

Katrin Schoenenberg, University of Wuppertal, Germany | #6

**Background:** Online therapy facilitates the access to treatment and may be a relevant alternative for people suffering from body dysmorphic disorder (BDD) bypassing some of the specific treatment barriers. To date, research on factors determining the acceptance and the intention to seek online treatment is limited. For this reason, the aim of the present study was to identify general and disorder related predictors of the acceptance to participate in an iCBT program for BDD.

**Methods:** Study participants (N = 127, N<sub>BDD+</sub> = 55) were asked to visually inspect the introductory website of the iCBT program including written psychoeducational material, a short video and the informed consent characterizing the program details. Thereafter, they rated screening questions regarding appearance related concerns and typical treatment barriers.



Acceptance was assessed by the intention to participate or to recommend the intervention. The website was further assessed regarding its content, usability and aesthetic design.

**Results:** Acceptance in terms of intended participation was moderately positive but showed high variances. The intention to recommend the program was higher for people with and without BDD symptoms. In contrast to face-to-face treatment, acceptance of iCBT was not related to BDD symptom severity, insight or depressive symptoms. Treatment outcome expectancy and likability of the website content constituted the best predictors for the intention to participate in ( $R^2 = .18$ ) or to recommend ( $R^2 = .21$ ) the online program ( $p$ 's < .01).

**Conclusions:** Treatment barriers of the face-to-face setting seem to play a minor role for the acceptance of iCBT in case of BDD. The results suggest the importance of high quality for early provided information. Limiting the results, behavioural intention was assessed only. Further research should investigate predictors of entering a treatment and adherence to the treatment.

## Study design of a mobile-based intervention with telecoaching (SmartAssistEntz) as aftercare for Alcohol Use Disorder

Kiona K. Weisel, Friedrich-Alexander-University Erlangen-Nürnberg, Germany | #161

**Introduction:** Alcohol use disorder (AUD) is one of the most prevalent mental disorders worldwide and is often chronic. Inpatient treatment is frequently of brief duration and mainly focused on physical withdrawal. Relapse risk is especially high after discharge from inpatient withdrawal treatment. Continuing care such as psychological treatment for AUDs can help improve abstinence, however, most patients do not proceed to aftercare for various reasons such as a lack of problem insight and insufficient knowledge of available services.

**Aim:** The aim of this study is to investigate the efficacy of a mobile intervention with telecoaching as aftercare for AUD considering 1) relapse risk 2) uptake and utilization of psychological aftercare treatment, and 3) cost-effectiveness.

**Methods:** Three-hundred-and-fifty-six patients with AUD who completed inpatient AUD treatment will be randomized to a mobile intervention with telecoaching or to a no-treatment assessment-only control group. The 6-week intervention is delivered via app with additional weekly telephone calls by eCoaches during the intervention. The calls are aimed at enhancing motivation, adherence and determining which aftercare treatment is feasible for the patient. The primary outcome is the relapse risk in the IG compared to the CG at 6-month follow-up. Secondary outcomes include current abstinence, days of abstinence, symptom severity, quality of life, and cost-effectiveness. Cost-effectiveness will be calculated based on self-report utilization of medical services and by utilizing data provided by the cooperating health insurance companies. Assessments take place at 6 weeks, 3- and 6 months after randomization and are telephone-based conducted by diagnostic raters blind to treatment condition. Qualitative interviews and focus groups will be conducted with patients, eCoaches, and stakeholders to assess treatment satisfaction, feasibility, and acceptability. Evaluation of efficacy and cost-effectiveness will be conducted by independent evaluators. Data will be analyzed on an intention-to-treat basis and sensitivity analysis conducted to examine data per protocol.

**Results:** At the conference we would like to present the study design and intervention content at the conference.

**Discussion:** The present study will provide evidence on the efficacy, cost-effectiveness, and acceptability of a mobile intervention with telecoaching as a low threshold aftercare procedure for AUD.

## User experience of an individually tailored internet intervention for anxiety disorders – a mixed methods approach

Kiona K. Weisel, Friedrich-Alexander University Erlangen-Nürnberg, Germany | #116

**Background:** Internet interventions have been shown to be effective in treating anxiety disorders, what remains unknown, however, are reasons individuals participate in internet interventions and how they work. The primary aim of this study was to examine the motivation to participate and user experiences in an individually tailored guided internet intervention for anxiety disorders.

**Methods:** In total, 49 adults with an anxiety disorder received access to the seven-session intervention. The primary outcome was the themes identified by the content analysis of the user experience assessed in semi-structured qualitative interviews after the intervention phase. Secondary outcomes included symptom severity of anxiety and depression (HAM-A, QIDS-C), diagnostic status assessed via clinical interviews (MINI), and web-based self-report assessments (GAD-7, CES-D, BAI, PAS, SPS, PHQ-9) assessed at baseline and at post-assessment. Data was analyzed by comparing within-group means. Adherence to the intervention was also assessed and reported.

**Results:** In the qualitative interviews ( $n=43$ ), the overarching themes motivation for training participation, training experience, and training impact were identified. The most prevalent reasons for training participation were the advantages of online treatment, symptom burden, and openness towards online treatment. Helpful factors included support, psychoeducation, practicing strategies in daily life, and the main hindering factors were too little individualization, overwhelming content and pace, and usability issues. The main positive findings contained general improvement of disease burden, attentiveness to feelings and risk situations, confrontation with one's situation, while the main negative effects experienced were no change of disease burden, symptom deterioration, training discontinuation. At post-assessment, anxiety symptom severity (Cohen's  $d=[0.27-1.19]$ ) and depression ( $d=[0.42-0.99]$ ) improved, and 53.8% (21/39) no longer were diagnosed as having an anxiety disorder while at baseline all participants ( $N=49$ ) fulfilled the criteria.

**Conclusions:** This mixed methods approach helped gain insight into therapeutic processes of an individually tailored internet intervention from which participants greatly benefitted. The flexibility of future internet interventions for AD should be maximized and they should be tailored to patients' characteristics, preferences and needs.

### Stepped care internet-delivered versus face-to-face cognitive behavioral therapy for pediatric obsessive-compulsive disorder

Kristina Aspvall, Karolinska Institutet | #44

**Background:** Internet-delivered cognitive behavior therapy (ICBT) has been developed as an accessible and cost-effective treatment option for children and adolescents with obsessive-compulsive disorder (OCD). However, the question regarding how the treatment could optimally be implemented to be of most benefit for both patients and health care providers remained unanswered.

**Methods:** A multicenter, randomized controlled non-inferiority trial for children and adolescents with OCD. The primary aim is to evaluate if ICBT can be delivered in a stepped care model without sacrificing efficacy and thus resulting in resource savings. Participants (N=152) are recruited from two specialist OCD clinics in Stockholm and Gothenburg and through online self-referral. Participants are randomized to either a stepped care ICBT group receiving ICBT for 16 weeks, or to a gold standard group receiving face-to-face cognitive behavior therapy (CBT) for 16 weeks. After the 3-month follow-up, participants who are classified as non-responders in both groups are offered additional face-to-face CBT before the 6-month follow-up. Blind assessments are administered at baseline, post-treatment, 3-month and 6-month follow-up. At 6-month follow-up (primary endpoint), we will test non-inferiority and compare resource use between the stepped care ICBT group and gold standard group. The non-inferiority margin is set to 4 points on the primary outcome measure (Children's Yale-Brown Obsessive-Compulsive Scale). Long-term effects will be investigated one, two and five years after treatment completion.

**Results:** Trial protocol will be presented. Recruitment started in October 2017, and is anticipated to be finished by June 2019. Results from the primary endpoint will be available June 2020.

**Discussion:** If the stepped care model is non-inferior to gold standard treatment, it will increase the availability to treatment and provide children and adolescents an opportunity to receive an early intervention for OCD.

### Lessons Learned from the BLEND-A Study Pilot Phase

Kristine Tarp, Region of Southern Denmark | #127

**Background:** In Denmark, about 150,000 persons suffer from an alcohol use disorder (AUD). However of these, only about 10% seek treatment. In addition, they prefer to seek help outside conventional health care settings and opening hours. This treatment gap – together with low treatment compliance with high numbers of no show and premature dropout – stress the need for innovation in treatment delivery. Therefore, the BLEND-A study will develop and evaluate a treatment intervention in Denmark, consisting of blended guided internet-based and face-to-face AUD treatment. BLEND-A consists of two parts: 1) a pilot phase; 2) a clinical and cost-effectiveness study.

The aim of this poster presentation is to describe our lessons learned from the BLEND-A pilot phase with regards to the processes of translating, developing, and implementing the blended AUD treatment offer from a Dutch to a Danish treatment context in order to pass on our experiences to inform future similar studies.

**Methods:** The present pilot study was conducted in three public outpatient alcohol clinics in the Region of Southern Denmark; Haderslev, Kolding, and Svendborg Municipalities.

The study was conducted in a mixed methods design by the means of data from the validated questionnaire System Usability Scale (SUS), participant observations, semi-structured individual patient interviews, and unstructured therapist group interviews. Analysis of SUS questionnaires was conducted in Stata and Excel. Qualitative analysis of interviews with patients and therapists was conducted by the means of a theoretical thematic analysis approach.

**Findings:** The pilot phase was agile and carried out in collaboration with patients and therapists. During the development and translation process, a Danish treatment platform was developed, and the treatment content for the platform was translated from Dutch into Danish. During the implementation process, the therapists were trained, patients were recruited, and the platform came into operation. During the pilot phase, several lessons were learned –based on feedback from patients and therapists – regarding the design, usability, and functionality of the platform.

**Results:** 22 patients participated in the pilot study; 15 men and 7 women. Over six measurements, their average mean SUS-score was 72. A system's usability is assumed to be above average when the score is above 68. The patients chose BLEND-A because of the blended format, anonymity, and flexibility.

### Virtual Reality Exposure Therapy for Social Anxiety Disorder

Lars Clemmensen, Centre for Telepsychiatry, Denmark | #71

**Background:** Social Anxiety Disorder (SAD) is a common mental disorder, with a life-time prevalence of 3-13%, but we need more accessible and effect-full treatment. A substantial part of SAD individuals either do not seek treatment or drop out. The present study aims to develop and examine a new treatment program for SAD based on cognitive behavioral therapy

(CBT) with exposure therapy conducted in Virtual Reality (VR). VR Exposure Therapy (VRET) has several advantages compared to traditional (in vivo or imaginary) exposure methods, because treatment can take place in a safe setting with increased control of situational elements.

**Methods:** We will conduct a randomized controlled trial comparing the reduction in SAD symptoms from baseline to post-treatment between the following three arms 1) Individual CBT with VRET (using 360° 3D videos) 2) Individual CBT with in vivo exposure and 3) Individual VR relaxation therapy. Therapy will consist of 10 weekly sessions with a 6 months follow-up. We expect to recruit 90 patients with SAD.

**Discussion:** Positive findings will support the use of VRET as an alternative, or supplement, to traditional exposure methods. We still need more effective treatment options for SAD, which is particularly important in that the disorder starts at a young age and affects social skills, which has long term consequences. If the treatment proves successful, the intention is to introduce it as an alternative to standard treatment at the Centre for Telepsychiatry and, in the longer term, other psychiatric departments. With time, this therapy might be carried out in the home of the patients, and thereby increase access for patients who would not otherwise seek treatment because of severe fear of social interactions. VRET could be a key element in an effort to reach those that stay away from traditional treatment.

## Effectiveness of Internet-Based Self-Help Interventions for Suicide Prevention: A Systematic Review and Meta-Analysis

Lasse Sander, University of Freiburg, Germany | #34

**Background:** Suicide ideation is highly prevalent. Several barriers to treatment-seeking lead to a gap in healthcare provision, which might be addressed by providing internet-based self-help interventions.

**Objective:** The aim of this systematic review and meta-analysis is to investigate the effectiveness of internet-based self-help interventions which directly target suicide prevention.

**Methods:** We will conduct a sensitive systematic literature search in four databases: PsycINFO, MEDLINE, Cochrane Central Register of Controlled Trials (CENTRAL), and the Centre for Research Excellence of Suicide Prevention (CRESP). Randomized controlled trials (RCTs) evaluating the effectiveness of internet-based self-help interventions which are designed for suicide prevention will be included. Primary outcome will be suicide ideation; secondary outcomes will be suicide attempts, hopelessness and depressiveness. Study quality will be assessed using the Cochrane Risk of Bias Tool 2.0. We will provide a narrative synthesis of included studies and interventions. If studies are sufficiently homogenous, we will conduct a meta-analysis of the effectiveness on suicide ideation and if possible, we will evaluate publication bias using funnel plots and p-curves. We will evaluate the cumulative evidence in accordance with the Grading of Recommendations Assessment, Development and Evaluation framework (GRADE).

**Results:** This review is in progress with findings expected by July 2019.

**Conclusions:** This systematic review and meta-analysis focuses on the effectiveness of internet-based self-help programs addressing suicidal thoughts and behaviors. Pros and cons of different study designs and implementation strategies will be discussed.

## Quality and Use Of APPs In PTSD Treatment

Lasse Sander, University of Freiburg, Germany | #33

**Background:** Individuals with PTSD and trauma survivors with subthreshold symptoms are negatively affected in their emotional wellbeing, interpersonal life and productivity. Evidently, there is a substantial unmet need for care among PTSD sufferers. Smartphone apps are an emerging tool for providing help in the management of mental health symptoms. Since the mental health app sector is expanding rapidly, it can be challenging for potential users to identify appropriate apps.

**Objective:** In this study, the quality, content, and practical relevance of apps for PTSD were assessed.

**Methods:** A web crawler was used to search the British Apple and Google App Stores for PTSD related apps. Downloaded apps were rated on quality by two independent researchers using the Mobile Application Rating Scale (MARS). The app content was compared to treatment approaches in regular PTSD care.

**Results:** 59 out of 340 apps met the inclusion criterias. The overall quality of apps was below average ( $M = 2.63$ ,  $SD = .72$ ). 19 high-quality apps (Score higher 3.5) were identified. These apps showed a close alignment with methods used in regular PTSD care.

**Conclusions:** We identified 19 high-quality apps that might be promising tools to improve PTSD therapy approaches. Featured methods and functions could potentially increase motivation to engage in psychotherapy and increase effectiveness of regular mental healthcare approaches. However, there is a general lack of scientific evidence. Therefore, the identified apps can only be recommend-ed with reservations.

## Enhancing stimulus control in the treatment of gambling disorder using location-based technologies.

Laura Díaz Sanahuja, Jaume I University | #105

Gambling disorder (GD) is a non-substance-related disorder with a high prevalence, which ranges from 0.12% to 5.8% (Calado & Griffiths, 2016). The first-line treatment for GD is Cognitive-behavioral therapy (CBT), being stimulus control (SC) a core component (Tolchard, 2017). In spite of its efficacy, SC is not an easy component to deliver; there are inherent difficulties related to the commitment during SC for those people who suffer GD and high attrition rates are generally obtained (Ginley, Rash & Petry, 2019). It is important to explore new ways to enhance the compliance of patients to SC. Media-based tools have contributed to the development of new designs of strategies to target psychological disorders. The large increase in mobile phones and smartphones over the years (Poushter, 2016) offers additional, yet and largely unexplored advantages to implementing psychological treatments in different mental disorders with the support of these technologies (Rizvi et al., 2011). Specifically, the location-based tools and technologies with personalized feedback of the patient position could enhance key therapeutic components in specific disorders. Previous works have studied the use of smartphone devices in the treatment of obsessive compulsive disorder by taking into account the position of the patient to improve the compliance to the exposure and response prevention component (Olbrich, Stengler & Olbrich, 2016). Similarly, the use of location-based technologies and personalized messages could enhance SC component in GD by a) increasing the motivation and patient commitment and b) reducing the abstinence violation. To best of our knowledge, there are no studies that include location-based technologies for the treatment of GD. The main aim of this pilot study is to describe the application of SyMptOMS (Sensor and Mobile based Mental Health Solutions) and to explore the feasibility and usability of the system in the delivery of the SC component in the treatment of pathological gamblers. Participants are diagnosed according to the Spanish-language version of the National Opinion Research Center DSM-IV Screen for Gambling Problems (NODS; Becoña, 2004). The expectations and opinion of the system (by Expectation and Opinion Scale, adapted from Borkovec & Nau, 1972) and usability of the system (by System Usability Scale from Brooke, 1986) will be assessed. This is an ongoing work and the results will be presented at esrii.

### **The development of an internet-delivered Acceptance and Commitment Therapy (ACT) intervention for health related quality of life among adults with multimorbidity with chronic pain**

Laura O'Connor, Centre for Pain Research, NUI Galway, Ireland | #28

Multimorbidity (MM) is defined as the coexistence of two or more conditions within one person, where no one condition is primary. MM can have significant effects on Health Related Quality of Life (HRQoL), and can often create a burden that is more than the sum of the individual conditions, given the potential for contradictory treatment advice or pharmacological interactions. Online psychotherapy is promising as a way to target HRQoL for people living with MM where chronic pain is a feature.

Development of this programme, known as ACTION, involved three stage - first, the adaption of the manualised content to ensure suitability for multimorbidity and storyboarding to establish the format and order. This was followed by a development stage, where components of the programme were built and assembled, with testing carried out continually within the research team. The final development stage involved a pilot of the RCT with a small group of participants who gave detailed feedback on the content and platform, leading to final changes before the main RCT was launched.

To assess this programme, adult participants with two or more chronic conditions, one to be a chronic pain condition, will be randomised to one of two study conditions. 128 participants will be recruited, 64 per group. The experimental group will undergo an 8-session internet-delivered ACT-programme over an 8-week period. A wait-list group will be offered the ACT intervention after the 3-month follow-up period. Participants will be assessed pre-intervention, post-intervention and at a 3-month follow-up. Pain interference and HRQoL will be the primary outcomes, and secondary outcomes will include global impression of change, illness perceptions, depression, anxiety and acceptance.

This RCT will add to current evidence related to the clinical effectiveness of online ACT interventions, both generally for chronic conditions and specifically for people with multimorbidity.

### **Measurement Invariance Analysis of an Instrument Assessing Implementation Success of Complex Interventions Across Healthcare Settings**

Leah Bührmann, Vrije Universiteit Amsterdam, the Netherlands | #129

**Context:** The implementation of research evidence into practice is a challenging process, especially when interventions are complex and have multiple interacting components, i.e. internet interventions. Implementation science aims at facilitating this step, however, the field is lacking valid instrumentation to assess mechanisms underlying implementation. The 20-item Normalization Measurement Development tool (short NoMAD), based on the Normalization Process Theory, measures Normalization as an indicator for implementation success. The pragmatic NoMAD instrument seems to be an applicable instrument in the fast-changing world of Internet interventions. The questionnaire is validated in different settings with good internal consistency ( $\alpha = .89$  and  $.87$ ). We aimed at testing the NoMAD for measurement invariance (MI) across translations to provide a sensible instrument which can be administered in different languages across implementation contexts.

**Methods:** This study is based on the studies of Finch et al. (2018) and Vis et al. (2019), which validated the NoMAD in an English and a Dutch version. The total sample consisted of 694 participants from the UK, Australia and The Netherlands. Among others, implemented interventions focusing on mental health care services including eHealth interventions. A MI analysis was performed to investigate whether the instrument does measure the same concepts across translations.



**Results:** MI can reach different levels of strictness, that is configural invariance, metric, and/or scalar invariance. The main analysis of the NoMAD data showed that the 20 items of the instrument are partially metric invariant. However, when exploring the instrument further and deleting two previously weak identified items (ca.2 and rm.1) from the item scale, the level of MI increased and the 18-item NoMAD showed full metric invariance, as well as partial scalar invariance.

**Discussion:** Based on the described results, we suggest the NoMAD as reliable and generally applicable across translations and implementation settings. We recommend to further discuss the final composition of the item scale and potentially delete the items which were identified weak across several analyses. However, more data is needed to strengthen this argument. In this talk, I will give examples on how the NoMAD can be used to understand and facilitate the implementation of internet interventions across several settings.

### The views and attitudes towards the PLUS programme: a transdiagnostic, trait-focused, web-based prevention programme for university students.

Madeleine Irish, King's College London | #86

The period of starting university is associated with a heightened risk for developing mental health disorders. Online prevention and early intervention programmes have the potential to reduce this risk. The Personality and Living of University Students (PLUS) programme is a transdiagnostic, trait-focused, web-based prevention intervention and its effectiveness is currently being investigated against minimal intervention across the UK and Austria in a large scale RCT with a total of 1155 participants. Adherence, however, is relatively poor. Understanding students' views and attitudes towards the PLUS programme could improve uptake and help implement it within a university setting.

Semi-structured interviews were conducted amongst study participants who had been allocated to PLUS. They were asked about their expectations, changes since taking part, likes and dislikes about the programme, and overall engagement. Interviews were analysed using a thematic analysis approach.

Preliminary analyses on 11 interviews revealed that students had little to no previous experience of internet-based interventions and relatively low expectations of the PLUS programme before signing up. Once partaking in the programme, attitudes towards it were positive and students found it more helpful than previously thought, often resulting in increased self-awareness. The programme was viewed as accessible and engaging with regard to both the layout and content. Some parts of the programme (e.g. individual tasks), however, were seen as slightly overwhelming due to the added element of self-reflection. Additionally, accessibility could have been increased by making the programme more compatible with mobile phone technology.

Overall, the PLUS programme appears to be acceptable to university students and has potential to be integrated into a university setting. These positive responses, however, do not give an indication as to why adherence is poor. Over the next month, we will continue to interview participants to gain a more representative sample of programme finishers and non-finishers.

### Who is in and Who is Out: Dropout Analysis for the Med-Stress Internet Intervention for Medical Professionals.

Magdalena Lesnierowska, SWPS University of Social Sciences and Humanities, Poland | #164

Internet interventions are known for struggling with low adherence and high dropout rates. Analyzing dropout data is crucial for understanding who benefits from the treatments and how we can reduce attrition rates to ultimately improve the effectiveness of these treatments. The goal of this study was to identify dropout patterns in Med-Stress: evidence-based, CBT-framed internet intervention that aims at reducing job stress and burnout among medical professionals. The RCT results—obtained on the intention-to-treat sample—showed that Med-Stress was effective. However, the dropout rate was high and hence the question is, what differentiates those who completed the treatment from those who left the intervention early.

Out of the 922 registered participants 164 completed all pre- and post-intervention assessments and 758 were lost to post-test (82.2% dropout rate). Using Little's test we found that data were not MCAR ( $\chi^2(111) = 155.48, p = .003$ ). The subsequent ANOVA and  $\chi^2$  tests of independence confirmed the MAR pattern of missingness, depending on: primary outcomes' levels at the baseline, condition assignment, and selected job and demographic characteristics. We found that completers were assigned to shorter intervention modules ( $\chi^2(1) = 13.31, p < .001$ ), were older ( $F(1, 920) = 23.30, p < .001, \eta^2 = .03$ ), with longer job tenure ( $F(1, 920) = 20.84, p < .001, \eta^2 = .02$ ) and showed higher initial expectancy and perceived credibility of the intervention ( $F(1, 920) = 14.02, p < .001, \eta^2 = .02$ ). For the primary outcomes we approached two-step clustering method and identified three distinct dropout patterns: (1) low dropout among participants with moderate baseline levels of job stress and burnout ( $N = 164$ ); (2) high dropout among participants with significantly higher baseline job stress and burnout ( $N = 463$ ); (3) High dropout among participants with significantly lower baseline job stress and burnout ( $N = 295$ ).

These results allow us to better understand how the design of the intervention, personal- and job-related factors impact adherence to the treatment. Specifically, it was the highest in the case of compact treatment conditions and among participants with moderate intensity of symptoms. Possible solutions to improve adherence among other participants will be discussed.



## The involvement of significant others in guided Internet-based cognitive behavioural therapy

Maria Andersen, Centre for Telepsychiatry, Denmark | #62

**Introduction:** When faced with mental illness, many people seek help from their close friends and family (significant others; SOs). For people experiencing depression and anxiety, actions of SOs can both hinder and facilitate recovery, and it is therefore important for SOs to understand the rationale of the treatment their loved one is going through, as well as what the SO's role is in the treatment process. The focus in this study is on patients using guided Internet-based cognitive behavioural therapy (ICBT) for depression or anxiety, and their SOs. The focus on cognitions in ICBT may influence the perceived boundaries of how SOs can be involved in this form of treatment. However, one unique aspect of Internet-based interventions is the fact that treatment is taking place at home. This means that even while these interventions are described as guided self-help interventions, the patient has the opportunity to involve SOs with or without the psychologist's knowledge. The experiences and potential implications of this are examined in this study.

**Methods:** A qualitative approach is used to explore the experiences and attitudes of patients, psychologists and SOs regarding the involvement of SOs in guided ICBT. This study is a case study, with all informants being recruited from the Internet Psychiatry Clinic at the Centre for Telepsychiatry in Odense, Denmark. Informants include 1. Psychologists, 2. Patients and 3. SOs. Semi-structured interviews with two psychologists were conducted, lasting approximately 40 minutes each. All interviews focus on the phenomenological aspect of the topic, and both questions regarding experiences of involving and not involving SOs are used. Questions from the interview guide used were extracted and adapted into a qualitative, open-ended questionnaire format, which was sent out to all psychologists by email, resulting in four replies. This means that inputs from a total of six psychologists are included. Two patients and one SO (a patients' boyfriend) have also been interviewed. If possible, it would be preferred to interview two additional patients as well as two more SOs. A thematic analysis is going to be conducted for each of the three informant groups' data, and the identified themes will be integrated and discussed.

**Results:** Findings from the thematic analyses will be discussed, using literature from the fields of e-health and clinical psychology in general.

## An Avatar-led Intervention Promotes Smoking Cessation in Young Adults: A Pilot Randomized Clinical Trial

Maria Karekla, University of Cyprus | #80

**Introduction:** Smoking remains a global concern, especially for youth where developmentally-suited smoking cessation programs are lacking, especially among those not presenting for treatment or lack motivation to quit. This pilot study assessed the effectiveness of a digital avatar-led Acceptance and Commitment Therapy (ACT) smoking cessation program (Flexiquit) for youth smokers at all levels of motivation to quit.

**Methods:** Smokers with no particular interest to quit smoking were recruited from 3 universities (105 smoking >1 cigarette per day, 68 females, completed screening questionnaires). Of those 84 entered the digital intervention (M=20.41 years, SD=3.45, range 17-28) and were randomized to either a 6-session Flexiquit (N=49) or waitlist-control (N=35). Primary outcomes included cessation status (point prevalence), self-efficacy and intention-to-quit smoking, assessed at pre, post, and only for Flexiquit, at 6-month follow-up.

**Results:** Participants in treatment group had statistically significantly higher rates of abstinence at post than controls (51.9% vs. 14.3%; OR=6.46, 95% CI=1.76 -23.71,  $p<.01$ ), with similar significance patterns with Intention-to-treat analysis (37.8% vs. 11.4% respectively; OR=4.71, 95% CI=1.37-16.22,  $p=.014$ ). There were statistically significant decreases in average number of cigarettes, nicotine dependence and increases in self-efficacy, and intention-to-quit smoking compared to controls, with results maintained through the 6-month follow-up.

**Conclusions:** An avatar-led digitalized smoking cessation intervention based on ACT doubled the odds of quitting smoking. Findings suggest that a digitalized program designed to engage youth in smoking cessation can result in quitting smoking and has a high applicability potential especially among the hard-to-reach population of youth.

## Evaluation of a Brief Avatar-Guided ACT-based Intervention for Chronic Pain Management

Maria Karekla, University of Cyprus | #79

Acceptance and Commitment Therapy is an empirically supported intervention for the management of Chronic Pain. Increasing demands for cost reduction in healthcare services in addition to obstacles regarding physical access to treatment, highlight the need for innovative, cost-reducing, digital self-management interventions. Low adherence, nonetheless, is a significant challenge often faced in digital interventions, which may impact treatment effectiveness and result in high dropout rates (Kelders et al., 2012). Very few digital interventions appear to be planned for adherence a-priori, when designing an intervention. In addition, there is a lack of brief digital interventions with minimum human contact, in the field of CP. The main purpose of this study was twofold: 1) to design an adherence focused, brief, Avatar-led intervention for CP management and evaluate its effectiveness, and 2) conduct an in-depth analysis to assess adherence, user engagement, satisfaction with treatment and their relation to socio-demographic characteristics and treatment outcomes. Sixty-four participants were randomly allocated to an intervention group (ALGApp) or an active control group (relaxation techniques). Both groups significantly contributed to improvements in the short-term on primary treatment

outcomes of pain daily interference, quality of life, secondary treatment outcomes of mood and process outcomes of acceptance and psychological flexibility. However, ALGEApp demonstrated improvements in acceptance to a greater extent than the control. Satisfactory adherence and completion rates favored the ALGEApp group. A comparison between completers and non-completers showed that users with high-pain interference at baseline were more likely to drop out early from the study. Users who adhered moderately to highly to the intervention were more likely to improve on pain interference. In terms of metrics, performance in mini quizzes with feedback appeared to predict higher scores in pain acceptance at post-treatment. Overall, the brief Avatar-led ACT-based intervention was well accepted by sufferers. Findings shed light on the potential of brief and innovative, planned-for-adherence digital interventions, on reaching and engaging users who may not have easy access to treatment, while providing a set of skills to help them manage their pain through a home-based self-care approach.

### **Comparing adherence and client's experience of an online program for the prevention of common mental disorders (ICare Prevent): a qualitative study.**

**Marian Martínez Sanchis, Universitat de València | #101**

Currently, mental disorders are an increasingly relevant problem in terms of public health, since they suppose enormous socioeconomical costs (direct and indirect). Moreover, most individuals in need of treatment for common mental disorders remain untreated. For this reason, attention has been increasingly focusing on new models which emphasize different intervention contexts, such as the prevention and the potential of technology to reach more people than traditional face-to-face approaches. In this area, psychological interventions aimed at reducing subclinical symptoms are effective for preventing disorders.

On the other hand, online interventions have proved their efficacy for the prevention and treatment of mental disorders and different meta-analyses have shown similar effect sizes to face-to-face interventions. However, one of the problems of these interventions are related to high drop-out rates and lack of adherence. In this matter, systematic reviews have shown that adding guidance (therapist support and supervision) to online intervention may be an important factor in improving adherence to treatment.

The aim of this study is to compare levels of adherence and participants' opinion of two versions of an online intervention to prevent the appearance of common mental disorder. The two versions compared are: guided and unguided. The guided treatment offers personalized feedbacks that the participants receive after completing a module in comparison to automatic messages that they receive in the unguided group. The study is conducted under the framework of ICare European project. In order to compare both conditions a qualitative interview has been designed for this purpose. In this sense, qualitative methods allow us to evaluate clients' opinion in order to understand the variables that helps to improve online treatments and reduce their disadvantages.

### **A blended cognitive-behavioral treatment for depression based on Moodbuster: A pilot study**

**Marlene Sousa, University Institute of Maia (ISMAI), Portugal | #99**

The iCare4Depression project represents an extension to the Portuguese context of the original trial developed by the ECOMPARED consortium. This project aims to develop and study the clinical and cost-effectiveness of a blended treatment for depression, involving two phases: (i) a pilot study, consisting of an open, uncontrolled trial, for adapting and refining the clinical and research procedures; (ii) a randomized clinical trial, comparing blended treatments with treatment-as-usual. In this work, we will present the clinical results of the pilot study of this project. This pilot study was conducted at a university context and involved twenty participants diagnosed with major depression. These participants were assessed in different moments, combining traditional self-report measures and ecological momentary assessments. The main outcome measure is the PHQ-9 (depression) and the secondary outcome measures are the CORE-OM (general well-being), GAD-7 (anxiety), quality of life (EQ-5D-5L) and WAI (working alliance). The data of this pilot-study are still being collected. We will present its results, namely the number of participants with reliable and clinically significant change, dropouts, deteriorations and no-change, as well as the pre-post effect size of the main and secondary measures. We will discuss the potentialities and difficulties related to the implementation of this blended intervention protocol, focusing the necessary modifications for the conduction of the RCT.

### **Mediators and mechanisms of change in internet- and mobile-based interventions for depression: A systematic review**

**Matthias Domhardt, University of Ulm, Germany | #132**

**Background:** Although the efficacy of internet- and mobile-based interventions (IMIs) for depression is established, comprehensive knowledge about their mediators and mechanisms of change is pending. Thus, we conducted a systematic review of mediators in IMIs for depression, and aimed to formulate an integrative model of the mechanisms of change in these interventions.

**Methods:** We systematically searched the databases Embase, PsycINFO, PubMed/MEDLINE and Cochrane Library (CENTRAL), to identify a) published trials on mediators in IMIs for depression, as well as b) papers on conceptual models of the mechanisms of change. RCTs were eligible for inclusion, if they examined 1) mediators of 2) internet- or mobile-based interventions for 3) individuals with symptoms of depression 4) compared to active or non-active controls 5) on depression symptom severity. Conceptual papers on change mechanisms were included, if they had a specific focus on mediators and mechanisms of change in IMIs for depression, irrespective of their publication type. Study selection, extraction of data, risk of bias assessment and assessment of quality criteria for process research were all conducted by two independent reviewers. This review is registered with PROSPERO and adheres to the PRISMA statement.

**Results:** We found ten RCTs on mediators eligible for inclusion. Overall quality of included studies was evaluated as good. The most researched mediators were cognitive factors (such as perceived control or positive meta-cognitive beliefs), followed by mindfulness skills (e.g. observing and acceptance) and behavioural factors (e.g. behavioural activation). We could not find any conceptual paper on the mechanisms of change in IMIs for depression thus far.

**Conclusion:** Overall, the results of this review lend further support for the efficacy of IMIs for depression. Treatment effects are mediated by cognitive and behavioural factors as well as mindfulness skills. Still, the evidence base on mediators is limited by a small number of studies. We propose a model of the mechanisms of change, which might provide a theoretical framework for future studies.

**Funding:** This research is funded by the German Federal Ministry of Education and Research (Grant Identification FKZ 01KG1802).

### Internet-based Cognitive Behavior Therapy for Binge Eating Disorder (i-BED)

Mia Beck Lichtenstein, Centre for Telepsychiatry, Denmark | #137

**Background:** The diagnostic criteria for Binge Eating Disorder (BED) include recurrent episodes of binge eating characterized by lack of control over eating, eating until feeling uncomfortably full and feeling embarrassed and disgusted with oneself. Binge eating occurs at least once a week and is associated with marked distress. The level of severity depends on the number of binge eating episodes per week.

BED is the most common eating disorder with an estimated prevalence of 1.4-2.0%. It was included as a diagnosis in DSM-5, but is not yet recognized as an eating disorder in the WHO diagnostic manual used in Denmark.

The Danish treatment options are insufficient to meet the needs of about 50.000 Danes who are estimated to be affected by BED.

Cognitive behavioral therapy (CBT) has shown good effect in the treatment of BED, but yet no Danish CBT-interventions exist in mental health care settings.

Can digital solutions be an option to establish evidence-based, accessible, feasible and effective treatment for BED?

**Aim:** The aim of this study is to develop and evaluate the effect of an internet-based cognitive behavioral therapy program for BED called i-BED.

**Participants:** Patients can refer themselves for treatment online from May 1st 2019. Referral, visitation, and treatment is all internet-based and integrated in digital platforms. The i-BED is developed for adults suffering from mild to moderate BED.

**Methods:** The i-BED program consists of 10 steps and is supported by weekly written consultations with a clinician. The content of the 10 steps is presented below and will be further explained at esrii.

- Step 1 Introduction and motivation
- Step 2 Psychoeducation and treatment goals
- Step 3 Registration of eating patterns
- Step 4 Identification of binge eating triggers
- Step 5 Regular and stable eating
- Step 6 Coping with emotions
- Step 7 Beating binge episodes
- Step 8 Self-esteem and cognitions
- Step 9 Prevention of relapse
- Step 10 Evaluation and final support

**Outcome:** The primary outcome is BED-symptoms and secondary outcome is quality of life and body mass index. Participants are assessed at baseline, after 10 weeks and after 3 months' follow up. We aim to establish a waiting list control group that is offered treatment after 10 weeks.

**Discussion:** We expect that patients experience symptom relief (reduction in binge eating episodes), increased quality of life and weight loss. We are able to present preliminary data from the project at esrii.

### The Challenges of a Digital Society - A Shared Response by the Dutch Universities

Mieke Schulte, Vrije Universiteit Amsterdam, the Netherlands | #172

In the current digital society, every aspect of our lives is being affected by the digitalization of data. To address complex questions arising from the further development and use of digital technologies, the Association of Universities in the Netherlands (VSNU) has initiated the Digital society program, bringing together over 30 leading professors in their

respective fields. The key objectives are 1) putting societal needs central to further research about digitalization processes, 2) promote responsible human-centered digitalization, and 3) collaborate closely with stakeholders.

To meet these objectives, all Dutch universities collaborate across disciplinary boundaries. The aim is to develop a shared research agenda and engage with a broad range of societal partners to create research that puts societal needs central. This should accelerate the processes of digitalization and the promotion of responsible, human-centered digitalization and datafication. Seven program lines are set up to bundle research activities and accomplish this common goal. In the 'Health & Well-being' program line, eight universities work together to develop, evaluate and implement integrated and personalized digital healthcare solutions, while understanding the societal challenges raised by this digitalization.

With this program, we hope to increase inter- and multi-disciplinary university positions, attention for digitalization and data science, methodological repertoires in all disciplines and the number of co-authored and co-referenced publications amongst participating researchers. Further, we hope to provoke higher quality public and political debate, increase social experimentation, and improve digital literacy in Dutch society. Finally, the program leads to more inter- and multi-disciplinary project collaborations and productive public-private partnerships.

## Effectiveness of E-health interventions on improving adherence to treatments and health behaviors for patients with COPD

Mieke Schulte, Vrije Universiteit Amsterdam, the Netherlands | #173

**Introduction:** Poor adherence to treatment of patients with a chronic lung disease is a worldwide issue. Digital interventions are a promising mean to improve treatment adherence. As part of a broader investigation into adherence in the lung diseases asthma, chronic obstructive pulmonary disease (COPD), and obstructive sleep apnea syndrome (OSAS), the aim of the current systematic review was to investigate the effectiveness of a broad range of e-health interventions on improving adherence to medication and exercise in patients with COPD.

**Methods:** A systematic literature search was conducted in the databases of Cochrane library, PsychINFO, PubMed, and Embase, in order to identify randomized controlled trials conducted in adult COPD populations. The risk of bias of included studies was examined with seven items of the Cochrane Collaboration's Risk of Bias tool.

**Results:** 9 studies met the inclusion criteria, of which four studies investigated focused on medication adherence and five studies focused on exercise adherence. In all studies, the effect on clinical outcomes were also investigated as a separate outcome measure. There were many differences between the included studies with respect to, for example, the type of intervention and the operationalization of adherence or clinical outcomes. Nevertheless, significant positive effects as well as no effects were found for medication adherence as well as exercise adherence. Furthermore, some positive clinical effects were also found, although not exclusively in the studies that reported positive effects on the medication or exercise adherence.

**Discussion:** The use of e-health adherence interventions in COPD seems promising for improving medication and exercise adherence and could possibly also have positive effects on clinical outcomes, but its efficacy might be influenced by many factors such as the operationalization of outcome measures and type of intervention.

## End-users experience with the mDiary application in DBT treatment

Mikkel Berg Bagger Jensen, Southern University of Denmark & Telepsychiatric Centre, Denmark | #63

**Introduction:** Borderline Personality disorder (BPD) patients make up approximately 20 % of the psychiatric population and have a tendency to exhibit impulsive aggression, repeated parasuicidal behavior and chronic suicidal tendencies, which makes them frequent users of mental health resources. One of the psychotherapy treatments which seem successful for BPD-patients is dialectical behavior therapy (DBT). DBT clinics have begun implementing new mobile technology because of the recent development of eHealth. The mobile application mDiary is now being used in some DBT clinics. First implemented in one DBT outpatient psychiatric clinic, mDiary is now being used in four outpatient psychiatric clinics around Denmark. Patients use the mDiary application to monitor emotional stability and their use and acquisition of the behavior skills taught in DBT. A recent study has shown that mDiary is an acceptable application to use for therapists and patients, but the development and implementation were reported to create frustrations among therapists. The study showed some promising results for mDiary but there is a qualitative need to explore the application further. The present study explores if there are some experiences with mDiary that the previous study did not account for, as it might restrict or expand further implementation of eHealth solutions. Therefore, the aim of the study is to examine how patients and therapists experience using the mDiary application in DBT treatment.

**Methods:** We used a qualitative design focusing on the phenomenological psychological method. Data was gathered from DBT outpatient psychiatric clinics in Svendborg and Haderslev. Semi-structured interviews were performed with patients (N=4) and focus group interviews were performed with therapist groups with 3 and 4 therapists in each group (N=7). The present study will take an in-depth look at the therapists' and patients' experiences with the mDiary application. Patient interviews will be combined into one case study where the combined themes from the informants will be presented. Similarly, the two focus groups will be combined into one case study with combined themes as well. At last, the two case studies will be compared to each other to search for common themes and discrepancies.

**Results:** will be analyzed and discussed.

## ImpleMentAll as first internet intervention in one LMI country – Kosovo case

Naim Fanaj, Mental Health Center Prizren, Republic of Kosovo | #1

Implementation of new interventions is problem everywhere, especially in LMI countries. The development of a new community mental health services in Kosovo still is characterized by considerable shortages, beside substantial effort on various levels. Obstacles remain financial and human resources; capacity building; stakeholder involvement and service availability. There is also a lack of strategies for promotion and prevention in mental health and lack of information systems, evidences and research for mental health. Recently (2016), the Mental Health Center in Prizren has joined an international consortium called ImpleMentAll, which is a project funded by the European Commission, Horizon 2020 with aim of developing, applying, and evaluating tailored implementation strategies for e-health interventions (ICBT) for depression. An exploratory, cross-sectional online survey (2017) found that e-psychotherapy can be potentially applied in Kosovo where acceptance of e-psychotherapy was reported between 35.5% 'maybe' and 50.2% 'definitely'. however, this is rather counter intuitive to the responses about helpfulness of such therapies with just 17.5 % considering them definitely helpful and most of the sample (57.8 %) considering them as possibly helpful. Professionals in Kosovo / Albania in an online survey (2017) despite the small knowledge about e-psychotherapy, participants welcome this as an additional opportunity for the patients' benefit. Now the Albanian version of the iFightDepression tool is running at four Mental Health centers across Kosovo, but there are challenges to overcome regarding hesitations on the part of patients to use intervention as lack of PCs at home, fear of misuses of personal data, distrust as beneficial intervention vs. traditional biological treatment mode, stigma and no time.

## Recommendations for the implementation of digital tools designed for the prevention, assessment and management of severe mental health problems: service user and staff perspectives.

Natalie Berry, University of Manchester, United Kingdom | #21

**Background:** The boom in the production of digital health interventions for the assessment and management of severe mental health problems has led to numerous large-scale trials currently being conducted worldwide. However, despite growing interest in the field of digital mental health, implementation within mental health service settings is still in its relative infancy. In order to understand how best to implement digital health interventions it is important to identify relevant stakeholder views towards such delivery options. However, there is currently a lack of research identifying individual perceptions about digital mental health.

**Aims:** For several years, our digital mental health group have been exploring views towards digital health interventions designed specifically for severe mental health problems such as psychosis and bipolar disorder. In this presentation, we aim to summarise our key findings from our ongoing qualitative work in the field.

**Methods:** We have combined the findings from four qualitative studies conducted in the North West of England to identify common themes regarding stakeholder views towards the implementation of digital health interventions. The first two studies were focus groups involving 68 staff working in secondary care mental health services. The second two studies were one-to-one interviews with 39 service users experiencing psychosis or bipolar disorder. Data were analysed thematically using NVivo (version 10) software and involved rigorous reliability checks including triangulation and member checking.

**Results:** Data could be categorised within three overarching themes regarding implementation: i) service and staff-related barriers and facilitators; ii) service user-related barriers and facilitators; and iii) technology-related barriers and facilitators. Within each theme, multiple subthemes were identified, including: i) staff training and expertise; ii) the digital divide; and iii) privacy and safety fears.

**Conclusion:** In this presentation we identify several key recommendations for researchers and clinicians developing digital tools for this population. Recommendations include, but are not limited to, decisions underlying technology ownership and skills; ethical considerations for the use and sharing of data received from devices; integration of digital health interventions within face-to-face delivery settings; and common features stakeholders believe to be important in future digital health interventions.

## Collaboration not consultation: Lessons learned from the pursuit of co-production in digital mental health trials.

Natalie Berry, University of Manchester, United Kingdom | #159

In recent years, meaningful collaboration with individuals with lived experience of physical and mental health problems in health-related research has become a priority. Indeed, many funding bodies in the United Kingdom now stipulate that evidence of co-production must be included in grant applications during all phases of a research project, from conception to dissemination. Methods of co-production in digital health projects are varied; one common example is ongoing qualitative work with individuals prior to, during and after intervention delivery. Expert reference and public and patient involvement groups can also provide much needed guidance with regards to practical elements of research design, measures used and dissemination. The involvement of peer researchers contractually employed to work on all trial aspects can also help to promote meaningful collaboration within health-related projects. More recently, researchers are beginning to use social media platforms such as Twitter to inform content included within interventions via online user-feedback.



However, despite the importance placed on co-production, evidence of such practices within digital mental health projects is often limited. Issues such as a focus in the field on primary quantitative outcomes defined a-priori, at the expense of emergent qualitative data can prevent the collection of rich and detailed information regarding individual views and experiences that are crucial to inform future design, engagement and implementation. Additionally, staffing and cost pressures can result in poorly executed attempts of co-production, with the practice becoming a 'box ticking' exercise rather than meaningful involvement. In this presentation, we will discuss our experiences as early career researchers working in the field of digital mental health. Specifically, we will focus on the challenges that we have encountered (from practice and literature synthesis) or anticipate during the collaborative process and strategies we recommend for addressing such pitfalls.

### Online therapist-guided CBT for gambling disorder within regular addiction care: Protocols for a pilot trial and a three-armed randomized superiority and non-inferiority trial

Philip Lindner, Stockholm County Council, Sweden | #152

Cognitive behavioral therapy (CBT) is a recommended treatment for gambling disorder (GD), a disorder characterized by compulsive, excessive gambling with negative consequences. Established CBT manuals are often derived – without full tailoring to the unique mechanisms and presentation of GD – from treatment manuals for other addictions, and most have not been adequately updated to match societal changes in gambling patterns. Further, in Sweden, access to qualified CBT for GD is overall limited, with large regional differences, which internet interventions could help to remedy. We have developed a novel CBT treatment for GD, informed by recent research on gambling topography and function, featuring tailored behavioral exercises aimed at training control and broadening the behavioral repertoire. This treatment will be offered as an online, 10-module, therapist-guided program by the Stockholm Addiction eClinic, to all regular GD patients enrolled in addiction care in Stockholm. To our knowledge, this is one of the first internet interventions for GD to be fully implemented and integrated into regular addiction care. Recruitment to a non-randomized pilot trial (n=24) will begin in spring 2019. During treatment, participants will provide weekly measures of self-rated GD symptoms and gambling (outcome measures), as well as well-being, sense of control, gambling-related cognitions, and cravings (possible mediators). Outcomes will be examined using mixed effects models. Preliminary results are expected to be available at time of full presentation. A larger, three-armed randomized controlled trial (n=50+50+50) comparing the same intervention to natural healthcare waiting-list (superiority hypothesis; 1:2 arm ratio), and after natural waiting-list to treatment-as-usual (non-inferiority hypothesis) is scheduled for late autumn 2019. This trial will also examine mediation using structural equation modeling. The results of these two studies will have important implications for CBT treatment of GD, as well as the implementation of internet interventions within regular addiction care.

### Wearable devices vs. Stationary equipment: Similar or different psychophysiological signals?

Pinelopi Konstantinou, University of Cyprus | #76

There is a rise in the market with wearable devices that capture psychophysiological signals. Current findings are very promising as wearable devices present with similar findings as stationary equipment, especially for heart rate (HR) and heart rate variability (HRV). However, the use of such devices has not yet infiltrated into experimental and clinical research. Reasons may include the lack of studies demonstrating the validity, reliability and sensitivity of these, in assessing psychophysiological indices. Purpose of this study is to compare for the first time, the psychophysiological data (skin conductance (SCR), HR, HRV) captured with a wearable device (Microsoft band) to those of a stationary device (Biopac MP150), in an experiment of pain induction. The sample consisted of 43 students from the University of Cyprus (MeanAge=21.37, %females=86.00), which participated in the Cold Pressor Task. Results showed that the indices of the mean HR and HRV were very similar between stationary and wearable devices. However, no significant correlations were found for the mean SCR. Implications include the establishment of a new way of collecting and analyzing psychophysiological data and in real-time, the ability to develop more personalized and effective approaches for the better management of conditions and improved self-management. This in turn will help researchers to examine physiologically effective (e.g. acceptance) vs. ineffective (e.g. suppression) coping techniques of undesirable emotions continuously, in a less costly and time-saving way.

### Zero Self-Harm – a mobile phone application to reduce non-suicidal self-injury: a superiority randomized clinical trial

Rasmus Thastum, Psychiatric Center North Zealand, Denmark | #123

**Introduction:** Non-suicidal self-injury (NSSI), the deliberate, self-inflicted destruction of body tissue without suicidal intent and for purposes not socially sanctioned, is an increasing health care problem in Denmark. Approximately 20 % of Danish adolescents report a history of NSSI at some point in their life. Individuals with NSSI have an increased risk of suicidality. Therefore, it is of great importance to develop and investigate the effectiveness of a low-cost app in reducing self-harming behavior.

**Aim:** To investigate whether the effectiveness of the Zero Self-Harm app is superior to treatment as usual (TAU, i.e. care, information and attention at the ED, potential referrals and other actions depending on the degree of NSSI, but no specific treatment of the nature of the NSSI) in reducing 1) frequency of NSSI-episodes and 2) suicide ideation, hopelessness, depressive symptoms and eating disorder symptoms in individuals with NSSI.

**Methods/design:** The trial is designed as a 2-arm, parallel group, 6 months, randomized clinical superiority trial. A total of 256 participants, 128 in each arm, will be included. One group will receive TAU, the other will receive the app. Participants will be recruited from the somatic and psychiatric ED in the Capital Region of Denmark, when discharged with recent acts of NSSI without further planned treatment. Inclusion criteria: Engagement in two or more episodes of NSSI in the past month, no further planned treatment, have a smartphone, fluent in Danish, provide an informed written consent, age  $\geq 15$  years. Primary outcome is the mean monthly difference in frequency of NSSI-episodes at 6-month. The trial is planned to start in June 2018. Analysis and results are expected in December 2020.

### Developing and evaluating 'MoodHwb', a Web-based programme for adolescent depression

Rhys Bevan Jones, Senior Clinical Research Fellow, Cardiff University, Wales | #128

**Context:** Adolescent depression is common, and treatment and prevention guidelines highlight the key role of health information and evidence-based psychosocial interventions. There has been growing interest in psychoeducational interventions (PI), to provide accurate information and enhance self-management skills. However, there is a lack of engaging Web-based PIs for adolescent depression.

**Aims:** To design, develop and undertake an early evaluation of a Web-based PI for young people with, or at high-risk of, depression and their families/carers, friends and professionals - as part of a National Institute for Health Research (NIHR)/Health and Care Research Wales (HCRW) fellowship.

**Methods:** The initial prototype of the programme was informed by: i) a systematic review of PIs for adolescent depression, ii) findings from semistructured interviews (n=12) and focus groups (n=6) with adolescents (with depressive symptoms or at high-risk), parents/carers and professionals, iii) workshops/discussions with a digital company and experts. For the mixed-methods evaluation, 44 adolescents and 31 parents/carers completed pre/post questionnaires, a subsample were interviewed, Web-usage was monitored, and there was a focus group with professionals.

**Results:** The systematic review showed that existing PI studies were limited in number and heterogeneous. Key themes in the interviews/groups were: aims of the programme, design and content issues and integration/context. The prototype was designed to be person-centred, multiplatform, engaging, interactive and bilingual. It included mood-monitoring and goal-setting components, and was available as an 'app'. The evaluation findings suggest that the programme and evaluation process were acceptable and feasible.

**Conclusions:** 'MoodHwb' was co-developed with user-input and design and psychological theory, in line with research guidelines. A feasibility randomised controlled trial is planned with the aim of implementation as an early intervention in health, education, youth and social services/charities.

### Internet-delivered cognitive behavioural therapy intervention protocol for psychological distress in women with breast cancer

Selin Akkol-Solakoglu, Trinity College Dublin, Ireland | #18

**Background:** Breast cancer patients are vulnerable to psychological distress. Internet-delivered is effective for depression and anxiety; however, studies with distressed breast cancer patients are lacking. The study adapts an internet-delivered cognitive behavioural therapy (CBT) programme for women with breast cancer and evaluates its efficacy.

**Methods:** Focus groups will be conducted with patients, primary carers, and psycho-oncologists to understand the suitability of online treatment formats for them. Data will be analysed using Thematic Analysis. A 7-week Space from Depression and Anxiety programme with post-session feedback support will be adapted. 120 women with breast cancer (with mild to moderate depression and/or anxiety) will be randomly assigned into (A) active treatment only (CBT programme), (B) active treatment with primary carer access to the same CBT programme, or (C) control groups. The Patient Health Questionnaire, Generalized Anxiety Disorder Scale, Brief Cope Inventory, Illness Perceptions Questionnaire, and Sources of Social Support Scale will be assessed at baseline, post-treatment, and 3-month follow-up. Data will be evaluated with Linear Mixed Modelling.

**Expected results:** Relative to group C, A and B groups will improve their illness-perceptions, coping, depression, and anxiety; furthermore, group B will improve their perceptions of primary carer support more than group A.

**Current stage of work:** Recruitment for the focus groups has started. Focus groups and qualitative analysis will be conducted by the time of the conference.

**Discussion:** The study will be the first to examine the suitability of an online treatment format for breast cancer patients as well as the efficacy of an online programme on breast cancer patients with depression and anxiety symptoms.

## Effectiveness, acceptability, and safety of Internet-delivered psychological therapies for somatoform disorders and functional somatic syndromes: a narrative overview and recommendations for future research

Severin Hennemann, University of Mainz, Germany | #7

Somatoform disorders and associated functional somatic syndromes (FSS) are among the most common mental disorders in Europe. However, despite high prevalence and comorbidity with other mental disorders, patients rarely access traditional psychotherapeutic care. Reasons include structural barriers (e.g. healthcare resources, treatment allocation), somatic-dominated health models or unfavorable treatment expectations. Thus, Internet-or mobile-delivered psychological interventions (IMIs) may represent low threshold and effective instruments in somatoform and related disorders. This narrative overview summarizes the literature on the effectiveness, acceptability, and safety of IMIs in this field of research.

For a broad spectrum of somatoform disorders, meta-analytic evidence shows small to medium pooled effect sizes for IMIs regarding symptom severity, which is comparable to the range of effects found in traditional psychotherapeutic (or pharmacological) interventions. The evidence is weaker for long-term effects and comparisons with active control conditions. Most studies target chronic pain, irritable bowel syndrome, and fibromyalgia. Further research is needed in hypochondriasis, somatization- or conversion disorder and FSS such as chronic fatigue syndrome. Only two, yet promising, studies investigating IMIs for somatoform disorders in adolescents could be found. Most IMIs are CBT-based stand-alone interventions and include at least minimal human guidance, whereas studies investigating unguided or mobile-delivered interventions, in stepped- or blended care contexts, as well as naturalistic and non-inferiority designs, are scarce. The literature suggests intervention- (e.g. level of professionalism of guidance, use of exposure) or participant-related moderators of effectiveness. Attrition rates vary across somatoform disorders but seem to be lower than in trials for affective or anxiety disorders. Only a few studies report side effects (symptom deterioration) with no evidence for serious critical events. Evidence for cost-effectiveness is limited and shows mixed results. Strategies for future research and implementation efforts, that make IMIs impactful in unreached target groups, will be outlined.

## IAPT Integrated Care - iCBT for Comorbid Depression and Anxiety in People with Long-term Conditions

Sharon Chi Tak Lee, SilverCloud Health, Ireland | #143

**Background:** Patients with long-term conditions (LTC) often experience comorbid depression and anxiety symptoms. If left unattended, these may not only negatively impact the prognosis and self-management of the health condition, but may also increase the burden on healthcare systems struggling to meet demands caused by these complications. One evidence-based treatment recently available to these patients is internet-delivered cognitive behavioural therapy (iCBT), however, findings highlighting its effectiveness treating comorbid depression and anxiety in patients with LTCs are often statistically ambiguous and underpowered. Hence, further investigations of a larger-scale conducted in a naturalistic setting are warranted to validate any claims of intervention effectiveness. The current study examined the effectiveness of iCBT for comorbid depression and anxiety in patients with LTCs within the Improving Access to Psychological Therapies (IAPT) services in the UK, which employs an integrated stepped-care model to extend access to those suffering from LTCs.

**Methods:** The study retrospectively analysed data from 1,783 patients with and without LTCs who underwent iCBT, delivered via SilverCloud, within an NHS IAPT service, across a two year time frame. Patients' scores on the Patient Health Questionnaire-9 (PHQ-9), Generalized Anxiety Disorder-7 (GAD-7) questionnaire and Work and Social Adjustment (WSAS) questionnaire were examined across timepoints using t-tests and linear mixed models. The number of patients who achieved the IAPT outcome variables of recovery, reliable improvement, and reliable recovery were also reported.

**Results:** iCBT was found to be effective in improving depression and anxiety symptoms as well as functioning in patients with comorbid depression and/or anxiety with LTC. There was no significant differences in treatment effects between patients with and without an LTC, as reflected by similarity in the IAPT outcome variables. Older adults, albeit being a smaller sample group, had a greater reduction in symptoms and improved functioning than their younger counterparts.

**Conclusion:** The current study highlights the potential of using iCBT in an integrated care model to treat patients with comorbid depression and/or with an LTC. The findings shed further light on possible relationships between individual patient data and treatment outcome, as well as the potential of tailored iCBT for this particular cohort of patients.

## How durable is the effect of iCBT for depression and anxiety? Remission and relapse in a longitudinal study

Simon Farrell, SilverCloud Health, Ireland | #142

**Context:** With Depression and Anxiety disorder's global prevalence rates varying between 4.7% and 10.2% for males and females and co-morbidity rates being found to be as high as 50%, greater chronicity, slower recovery and increased rates of recurrence are unfortunately a consequence. Various biological and psycho-therapeutic interventions (e.g. antidepressants and CBT) have been used to treat these disorders and their maintenance effects. However, less is known about the long-term effect (i.e. the durability) of internet-delivered interventions for such presentations. Therefore, this

study investigates relapse and remission rates following the completion of iCBT interventions for anxiety and depressive symptoms, delivered within a stepped-care approach.

**Methods:** A good enough level (GEL) model of improvement assessed SilverCloud Health's iCBT programmes for individual's experiencing low to moderate levels of depressive and/or anxiety symptoms, with weekly support provided by Psychological Well-being Practitioners (PWPs) throughout the intervention phase. Relapse and remission rates were assessed through participant self-completion of the PHQ-9 and GAD-7 at 3, 6, 9- and 12-month follow-up. Participants were included until the 12-month follow-up assessment apart from instances where relapse occurred or participants failing to respond to two consecutive follow-up assessments.

**Results:** The project is currently ongoing - the preliminary results of the analysis will be presented at esrii 2019.

**Conclusion:** The current research seeks to quantify post-treatment relapse rates at 3, 6, 9- and 12-months' follow-up, to explore predictors of time-to-relapse and hence identify the durable effect of iCBT for low to moderate depressive and anxiety symptoms within a stepped-care approach.

## The Efficacy of Psychological Interventions for Grief Disorders: Study protocol of a Comprehensive Meta-analysis

Soledad Quero, Universitat Jaume I, Spain | #29

Losing a loved one represents an emotional reaction characterized by intense lament and longing that usually decrease over time. However, 10% of people who suffer a significant loss develop Prolonged Grief Disorder (PGD). Recently, this diagnostic category has been introduced for the first time in the new chapter "Disorders Specifically Associated with Stress" in the ICD-11 (WHO, 2018), providing a clearer definition of symptoms. Regarding treatment for this problem, there are several studies that have tested psychological treatments for bereaved people. These studies have shown efficacy in reducing mourning symptoms. Nevertheless, there are few systematic reviews focused on integrating the results of studies on the effectiveness of these treatments. Besides, existing reviews are outdated, have not used meta-analytic techniques, and focused on specific groups (e.g., parents following a child's death). The aim of this work is to carry out a comprehensive meta-analysis of the efficacy of psychological interventions for grief disorders and grief symptoms in children, young and adult populations following the PRISMA-P guidelines. The following databases will be searched by an independent searcher during March and June 2019: Pubmed, Embase, PsycINFO, and Cochrane library. Search strategy will use the terms "Grief", "Mourning", "Bereavement", "Bereaved", "Bereavement-related distress", "Psychotherapy", "Psychological treatment", "Psychological intervention", "Psychosocial intervention", "Counseling", "Interpersonal Therapy", "Interpersonal Psychotherapy", "self-help intervention", "Cognitive-behavioral Therapy", and "Complicated Grief Treatment". Following a screening of the titles and abstracts, the decision about inclusion/exclusion will be based on the review of full texts and made independently by two reviewers according to eligibility criteria and PICO terms. The meta-analysis will be registered at the International prospective register of systematic reviews (PROSPERO) and will be conducted following the PRISMA and PRISMA-P guidelines. Due to the lack of comprehensive review studies in the field, this work will contribute to summarize the evidence regarding efficacy of psychological treatments for grief disorders.

## Development of an internet Attachment-Based Compassion Therapy (iABCT)

Soledad Quero, Universitat Jaume I, Spain | #13

Compassion refers to a multidimensional psychological construct that involves the feeling that arises in presence of another's suffering and implies the desire to help. There is a growing number of studies pointing out the benefits of Compassion-based Interventions (CBI) and their association to psychological health. CBI are focused on training compassion to others and/or towards oneself (self-compassion) employing formal and informal meditation practices. Recent scientific literature is emerging to prove the feasibility and efficacy of cultivating compassion over the Internet and, thus, delivering self-applied online CBI. The aim of the present work is to introduce and explain the development of an internet Attachment-Based Compassion Therapy (iABCT), the first CBI in Spain, that will be tested in a feasibility trial. ABCT is an intervention protocol of compassion based on attachment theory and includes practices to raise awareness and/or address maladaptive aspects of attachment styles developed with parents. The online version (iABCT) is developed to be totally self-applied via the Internet through the website [www.psicologiatecnologia.com](http://www.psicologiatecnologia.com) designed by Labpsitec. The iABCT consist of eight sequential modules: 0) Welcome module: approaching to the compassion; 1) Preparing ourselves for compassion: Kind attention; 2) Discovering our compassionate world; 3) Developing our compassionate world; 4) Understanding our relationship with compassion; 5) Working on ourselves; 6) Understanding the importance of forgiveness; and 7) Consolidating the practice of compassion. Each module follows the same structure: module agenda; theoretical contents of the module; exercises and activities (including formal and informal practices); assessment of the knowledge acquired during the module; homework assignments between modules; and summary of the module. The program includes the use of texts, audios, videos, pictures, vignettes, and interactive exercises. Formal meditations are delivered through audios with specific instructions. Each participant is free to advance at his/her own pace, although they are advised to perform one module per week, taking days between sessions to complete homework assignments. The internet-based intervention can be completed in eight weeks, with a maximum period of ten weeks. The iABCT is currently being developed and adapted to include usable and well-accepted content that have been shown efficacious in previous clinical trials.



## Patterns of use of the exposure scenarios of NO-FEAR Airlines: An Internet-based Exposure treatment for Flying Phobia

Soledad Quero, Universitat Jaume I, Spain | #30

NO-FEAR Airlines (NFA) is an Internet-based Exposure treatment for Flying Phobia that has showed to be effective compared to a waiting list control group in a randomized controlled trial (RCT), while no significant differences were found when therapist guidance (TG) was delivered (i.e., 5 minutes phone call). Participants reported good expectations, satisfaction, opinion, and usability, regardless of the presence of therapist guidance. However, the patterns of use of the exposure scenarios were not explored. This study aims to analyze the patterns of use of the exposure scenarios of NFA and to explore their relationship with treatment efficacy. Sample comprised 38 participants from the RCT who had completed the NFA with ( $n = 20$ ) or without ( $n = 18$ ) TG. The mean age was 36.84 years ( $SD = 10.31$ ). NFA exposure scenarios were: (1) flight preparation, (2) airport, (3) boarding and taking off, (4) the central part of the flight, (5) the airplane's descent, approach to the runway, and landing, (6) sequences related to plane crashes. The following outcome measures were considered: Fear of Flying Questionnaire, Fear of Flying Scale, Fear and Avoidance Scales, Clinician Severity Scale, and Patient's Improvement scale. Patterns of use of the exposure scenarios were recorded by NFA: e.g., times that each participant needed to repeat the scenario to overcome the stage, number of exposure cycles. Overall, results showed that 28.9% of participants performed once the exposure scenarios, while 55.2% took two times, and 15.7% needed three times to overcome each scenario. No significant differences were found between groups for the times performing each scenario and the number of cycles. Changes from pre to post intervention on avoidance related to the target behavior was significantly correlated ( $p < .05$ ) with the times ( $r = .359$ ) and cycles ( $r = .393$ ) of the scenario 2, and the times of the scenario 6 ( $r = .375$ ). These findings suggest the role of performing repeated exposures to the feared stimulus to significantly reduce avoidance levels, a key clinical component to the maintenance of phobic disorders. Information and communication technologies (specifically Internet-based exposure treatments) enhance the implementation and cost-effectiveness of repeated exposure by means of providing online scenarios, which are available around the clock, and reaching people in need regardless their geographical location.

## The efficacy of Internet-delivered interventions for Phobic Disorders: Study protocol for a systematic review

Sonia Mor, Universitat Jaume I, Spain | #49

**Introduction:** Internet-delivered interventions have been a growing field of research during the last years due to their proven efficacy in the treatment of different psychological disorders and their capacity to improve the dissemination of interventions. More recently, there has been an interest in mental health apps as well, as they are considered more accessible devices. Specific phobias (including agoraphobia) are highly prevalent disorders and some studies have been conducted with online interventions and apps. However, no systematic reviews have been published summarizing the findings on this field. Aim: The aim of this work is to present a systematic review protocol about the efficacy of internet-delivered interventions, including mobile apps, for people with phobic disorders.

**Method:** The PRISMA guidelines will be followed for this systematic review. A bibliographical research will be conducted in the Pubmed, PsycINFO, Embase and Cochrane library databases. The search strategy will include the terms "Phobia", "Agoraphobia", "Phobic disorder", "Specific phobia", "Internet-based treatment", "Web-based treatment", "Internet intervention", "Online", "Internet therapy", "Mobile phone", "App" and "Mobile application". For the selection of the studies, two independent researchers will screen titles and abstracts to identify potentially relevant articles and the decision about inclusion/exclusion will be based on the review of full texts following the eligibility criteria and PICO terms. This systematic review will be registered at the International Prospective Register of Systematic Reviews (PROSPERO).

**Conclusions:** Due to the prevalence of these disorders and the growing interest in the use of Internet and apps in the treatment of psychological problems, this work will contribute helping to summarize the findings up until now.

## Using mental health mHealth interventions: What predicts compliance?

Stefanie Schroeder, University of Bamberg, Germany | #109

**Background:** The number of mental health interventions delivered via smartphone applications (mental health apps) is increasing, but their effectiveness remains controversial due to user compliance. Intention to use seems to play a major role, but further factors influencing compliance have rarely been studied systematically by now. According to the Unified Theory of Acceptance and Use of Technology, expectations towards an app's performance and social expectations towards using a mental health app may influence the intention to use. Furthermore, according to the Theory of Planned Behavior, individual attitudes towards mental health apps may also influence the intention to use. However, this has never been studied empirically by now.

**Methods:** 42 individuals reporting emotional eating (64 % female, mean age:  $28 \pm 10$  years) used a smartphone app delivering a three-week psychological intervention to reduce emotional eating. In advance, participants were informed about the aims and structure of the app and they reported on their intention to use the app, performance expectancy, effort expectancy, social influence on using the app, and attitudes towards using mental health apps in general. After finishing the intervention, they reported on how often they had used the app (compliance). Mediation analyses were conducted to examine whether the intention to use the app predicted compliance and whether expectations and attitudes were moderating factors.



**Results:** 54.3 % of the participants used the app often or very often. Intention to use the app was high ( $30.9 \pm 5.2$ ; possible range 6-42) and was significantly associated with compliance ( $R^2 = .154$ ;  $\beta = .393$ ;  $p = .024$ ). The attitude "The use of mHealth interventions is pleasant to me." significantly moderated this association ( $R^2 = .285$ ;  $\beta = .369$ ;  $p = .046$ ). None of the assessed expectations proved to significantly moderate this associations.

**Discussion:** The results indicate that rather individual attitudes towards mHealth interventions in general and not expectations towards the app's performance and social expectations may be important for an individual's compliance to use a mental health app focussing on emotional eating. When delivering mental health interventions via smartphone apps, individual attitudes towards mHealth interventions should be considered carefully and should be influenced positively to increase compliance and effectiveness.

### An evaluation of psychotherapeutic interventions delivered online and in person for chronic pain: a systematic review and network meta-analysis

Stephanie Haugh, Centre for Pain Research, NUI Galway, Ireland | #37

**Introduction:** Chronic pain is a highly prevalent condition that can significantly influence sufferers' quality of life. There is significant research supporting the effectiveness of face-to-face psychotherapies for chronic pain sufferers but a lack of research exploring the most effective psychotherapy. In addition, economic and social barriers exist which can prevent pain sufferers accessing such therapies. The implementation of internet-delivered psychological interventions are one way of circumventing these obstacles. The objective of the current review and network meta-analysis is to evaluate face-to-face and internet-delivered psychotherapeutic interventions for chronic pain.

**Methods:** Four databases: MEDLINE, EMBASE, CENTRAL and PsycINFO were searched. The review included randomised control trials where the psychotherapeutic intervention is delivered either in person or online. Exclusion categories are as follows, 1) not an RCT, 2) cancer or headache related pain, 3) not a psychotherapeutic intervention, 4) did not measure a suitable outcome. Initially, papers were sorted based on title and abstract with 10% sorted in duplicate. Two reviewers then independently assessed the remaining papers. Data were extracted in duplicate and risk of bias was assessed. Exploratory meta-analyses were undertaken and a network meta-analysis was conducted to generate indirect comparisons between all treatment nodes.

**Tentative results:** The full search yielded 15,096 papers with 168 papers included in the systematic review and 142 papers included in the network meta-analysis. The network includes twenty treatment nodes; CBT, CBT online, CBT + biofeedback, CBT + hypnosis, CBT + movement, ACT, ACT online, Mindfulness, Mindfulness online, Mindfulness + movement, Psychodynamic therapy, Relaxation, OBT, Multimodal, Multimodal online, Psychotherapy via different modality, Other, Other online, Enhanced control, and Control. Initial analyses suggest that in person delivered CBT is the most effective intervention to reduce pain interference for a chronic pain population. Full results will be presented at the esrii Conference.

**Conclusions:** Findings from this study will inform patients, researchers and clinicians about the treatment efficacy of psychotherapies and delivery methods.

### IMPACHS - IMProving Availability & Cost-effectiveness of mental Healthcare for Schizophrenia through mHealth" - The quantitative and qualitative evaluation of a mobile application for psychosis

Stephen F Austin, Psychiatric Research Unit, Region Zealand Psychiatry, Denmark | #89

**Introduction:** Advancement and better access to technology such as the internet and mobile applications has led to the examination of how these technologies may supplement and potentially improve the effectiveness of treatment for psychosis.

**Aim:** The feasibility study captured service-users' perspectives on the integration of a mobile application designed to supplement cognitive behavioural treatment approaches to first episode psychosis.

**Design:** All participants with a schizophrenia spectrum disorder ( $n=24$ ) and were recruited from two clinical sites in Denmark and Germany. Participants accessed the App as part of standard treatment for a maximum period of 6 months. Quantitative data on symptoms, functioning and personal recovery measures was collected pre and post intervention and a subset of service users participated in qualitative interviews to capture perspectives on the integration of m-health solutions into therapeutic interventions for psychosis. Content from the interviews was analyzed to identify common themes.

**Intervention:** The App based on cognitive behavioural principles for psychosis consisted of self-monitoring/feedback functions along with modules covering a variety of interventions for psychosis such as delusions, hallucinations, self-esteem, behavioural activation and emotional regulation. Modules were selected in collaboration with the therapist and involved psychoeducation, interactive exercises, and strategies to deal with a range of psychological problems.

**Results:** Preliminary analysis from the interviews indicated that service users were positive towards the integration of the App into treatment. Key themes from interviews included access to information and strategies outside of the clinical setting and using self-monitoring data to inform clinical interventions. Accessing self-monitoring functions and modules greatly varied as a function of illness stage and focus in treatment. Challenges and facilitators in implementation of the App in clinical practice from a user and personnel perspective will be discussed.

**Conclusion:** The integration of an m-health solution to supplement cognitive behavioural interventions for psychosis appeared feasible. Further studies are required to evaluate the effectiveness of various elements of the App and their usefulness to reduce symptoms, distress and promote recovery.

### Digitalized cognitive-behavioral intervention for anxiety among school aged children. A randomized controlled study

Tarja Korpilahti-Leino, University of Turku, Finland | #180

**Background:** Anxiety is one of the most common childhood psychiatric problems, affecting well-being and academic and social functioning in many negative ways until adulthood. However, children with anxiety often remain untreated, as their symptoms easily are unidentified, even by the parents. Additionally, the availability of the first-line treatment, cognitive-behavioral therapy (CBT), is limited. Internet-based CBT (ICBT) has been shown effective in studies using clinical populations, but no studies have assessed its effect for anxiety among children screened from the general population.

**Aims:** To evaluate the effect of an ICBT ("HUOLET HALLINTAAN") for anxiety among school-aged children screened from the general population, and the child's personal, familial and treatment-related factors that may affect the impact of the treatment.

**Methods:** The screening is conducted by using a 5-item anxiety scale as a part of the routine school health care check-up among 10-13-year-old children. Children with high levels of anxiety and their parents are offered participation in an RCT, in which the intervention group receives ICBT with weekly telephone coaching, and the control group treatment as usual supplemented with digital psychoeducational material. In the RCT phase, families will be followed up until 6 months after the randomization, after which an open follow-up will be conducted. Demographics, anxiety symptoms and diagnoses, comorbid symptoms, quality of life, peer relations, school perceptions, parental well-being, service use, therapeutic alliance, the use of and the satisfaction with the program are measured and analyzed as the outcomes and / or possible moderators of the treatment outcome.

**Results:** The screening phase is still ongoing. So far, altogether 224 families have been randomized either to intervention or control group. The school nurses have reported increased knowledge and the usability of the screening instrument in assessing childhood anxiety. The program has been well accepted by both children and their parents.

**Conclusion:** In the long term, the objective is to implement a digitalized, low-threshold, effective treatment for childhood anxiety to the Finnish basic health care system. Studying the factors that affect the treatment outcome is crucial, as it helps to address the treatment to those who benefit the most, thus allowing the specialized services to concentrate on the children who need more intensive or different kind of treatment.

### The Momentum Trial: The efficacy of using a smartphone application to promote patient activation and support shared decision making in people with schizophrenia.

Tobias Vitger, Mental Health Services of the Capital Region & Competence Centre for Rehabilitation and Recovery, Denmark | #25

**Introduction:** Shared decision making (SDM) is often defined as an interactive process that ensures that patient and practitioner are actively involved in treatment and that they share all relevant information to arrive at a decision. SDM appears to occur less frequently in mental health care than in primary care. Electronic aids developed to support SDM might be a promising mean to engage patients in their mental healthcare and support recovery.

**Objectives:** The aim of the trial is to investigate the effects of using a smartphone app (Momentum) to promote patient activation and support SDM for people with schizophrenia-spectrum disorders.

**Methods:** The participants in the study are 1:1 randomised to an intervention group (Momentum app and TAU) or a control group (TAU alone). 260 people with a diagnosis of schizophrenia, schizotypal or delusional disorder are recruited from outpatient treatment settings in Denmark. The intervention last 6 months with data collection at three time-points. Primary outcome is patient activation. Secondary outcomes are perceived efficacy in patient-provider interaction, working alliance, symptoms, level of functioning; self-efficacy; treatment satisfaction and hope. Patients' satisfaction and experience regarding the usefulness of the app are explored.

**Discussion:** The study investigates the efficacy of using a smartphone application in terms of supporting SDM interactions between people with schizophrenia and their healthcare providers. Based on the results, available in 2021, the study contributes with more knowledge about to which degree the use of digital healthcare solutions may support SDM, patient activation and a recovery-oriented treatment approach in mental health care.

### Exploring the potential of augmented reality as a novel tool for animal phobia treatment

Tom van Daele, Thomas More University of Applied Sciences, Belgium | #115

Virtual reality has been a useful addition to clinical practice for several years now. More recently, AR also started to emerge in this domain, mostly in the context of the treatment of specific phobias. Augmented reality (AR) merges virtual elements into the physical world and has become increasingly mainstream. This study aims to explore the potential of a first smartphone app for animal phobia treatment. Our aim was to evaluate whether the iOS application Phobos AR could elicit

feelings of anxiety and influence heart rate in a non-clinical population, when performing behavioural approach tasks (BATs). A second goal was to explore whether screen size (iPhone versus iPad) had an impact on self-reported anxiety severity.

One hundred eleven first-year students were exposed to one animal of their choosing (rat, pigeon, snake, cockroach, spider, frog or dog) for which they reported some level of discomfort (which was, however, assessed as non-phobic, using the Severity Measure for Specific Phobia - Adult questionnaire). A subsample of participants ( $N = 44$ ) was also fitted with an ECG-device (Byteflies). Students were randomly allocated to either the smartphone ( $N=55$ ) or tablet ( $N=56$ ) condition, after which they ran through three 3--step BATs of increasing intensity. Since all participants were non-phobic, we measured reported anxiety during each of the different steps instead of the standard BAT-outcome, which is the total amount of steps taken before ceasing exposure. For the ECG-subsample, the registered heart rate prior to and during the highest intensity task was considered.

Results showed a gradual increase of self-reported anxiety within each of the three BATs,  $135.77 < F_s(2, 220) < 185.37$ ,  $p < .001$ , and a significant increase of self-reported anxiety between the first ( $M=.98$ ,  $SD=1.28$ ) and the last rating ( $M=4.56$ ,  $SD=2.88$ ),  $t(1,110) = 16.15$ ,  $p < .001$ . No significant change in heart rate was found. There was also no significant difference in self-reported anxiety between both screen size conditions.

In conclusion, this study demonstrates that an AR app is able to induce self-reported anxiety in a non-clinical population. Further research needs to compare this technique to other approaches like VR and imaginary exposure, should include additional psychophysiology (preferably skin conductance), and could also explore its potential in clinical populations. AR does, however, seem to hold promise as a meaningful treatment tool.

### Feasibility and user experiences of BIP Worry - an online intervention for adolescents with excessive worry

Tove Wahlund, Karolinska Institutet, Sweden | #82

Excessive worry is a common feature in several psychiatric disorders and one in twenty adolescents experience excessive worry. Since worry may lead to subsequent mental health problems, early and accessible treatment is needed but treatment options for this patient group are scarce and often not easily accessible.

Our research group has developed an online cognitive behavioral therapy program (BIP Worry) for adolescents with excessive worry. BIP Worry also includes support for the adolescents' parents or legal guardians. The treatment focuses on increasing adolescents' tolerance for uncertainty through exposure to uncertain situations without the use of unhelpful worry behaviors. This is in turn suggested to decrease the perceived need for worrying over time. The intervention consists of 10 separate treatment modules for adolescents and their parents, and both have contact with a therapist throughout the treatment phase.

To evaluate the feasibility of BIP Worry, we conducted a small pilot study with 13 adolescents (age 13-17) and their parents. The preliminary efficacy of the intervention was assessed using self-, parent- and clinician ratings of worry, anxiety and general functioning. Participants were assessed before, during and after treatment and at one and three months after treatment. The participants' experiences of BIP Worry were analyzed in a qualitative study using interviews conducted by an independent researcher.

The results showed that BIP Worry was feasible, with a low drop-out rate, most participants completing all treatment modules, high treatment satisfaction, limited therapist time needed to treat adolescents and support parents, and no severe adverse events occurring during treatment. There was an effect of time on all outcome measures, most importantly adolescent-rated worry ( $d = 1.38$ ), anxiety ( $d = .96$ ), and general functioning ( $d = .69$ ). User experiences of BIP Worry are currently being analyzed qualitatively and will be described in the presentation.

In summary, BIP Worry appears to be feasible and acceptable for adolescents with excessive worry and their families, and further study of the treatment efficacy in a larger, controlled trial is warranted. At this presentation, the audience will see parts of the intervention and get a patient perspective on BIP Worry based on the experiences of patients and their parents.

### Development and implementation of an app for supporting anxiety treatment in at outpatient setting - a qualitative investigation

Trine T. Holmberg, Centre for Telepsychiatry, Denmark | #122

**Context:** Anxiety disorders are characterized by physiological and psychological symptoms as a response towards perceived threatening stimuli. These disorders cause high amounts of suffering and high expenditure. Current prevalence of anxiety disorders in European cultures is estimated at 10.4% (7.0–15.5%), with a relatively high lifetime prevalence of between 14.5-33.7%. In 2004 it was estimated that anxiety disorders cost the European Union 41 billion euros. A cost which is likely higher today, as global estimates of anxiety has risen with 14.9 % since 2005.

New technology may improve current treatment, increase access to treatment, and potentially decrease expenditure and suffering. The present study aims to explore the development and implementation of an app designed to help support treatment of anxiety in an outpatient secondary care setting, as to inform future development and implementation efforts.

**Methods:** Data on experiences with the app was obtained with semi-structured interviews and the Systems Usability Scale (SUS) survey. Seven patients and four clinicians using the app in treatment were interviewed. The interviews were analysed using a thematic analysis approach. Three raters coded the data separately and then compared emergent themes and

subthemes. The clinicians were interviewed about: 1) System usability, feasibility and acceptability of the app in a psychiatric setting, 2) Working procedure and, 3) Implementation.

The patients were interviewed about: 1) System usefulness, acceptability and feasibility, 2) Insight in own disorder and relation to the therapist and, 3) compliance.

**Results:** The SUS score demonstrated higher patient satisfaction with usability of the app; Mean = 60.38 (SD = 28.35), than clinician satisfaction: Mean = 46.25 (SD = 5.30).

**Interview conclusions:**

- Clinicians need tech-support in the start-up phase and follow-ups throughout stabilization
- Clinician commitment is crucial for successful implementation as well as patient compliance and clinician commitment is dependent on extra allotted time and managerial support
- User Interface should be designed for lowest common denominator and only implemented when finished
- Implementing the app enhances ability to tailor the treatment to individual needs, patients prefer app over paper and gain increased disorder recognition

## The Importance of Injunctive and Descriptive Peer Norms on Adolescents' Photo Disclosure on Social Networking Sites

Ugnė Paluckaitė, Vytautas Magnus University, Lithuania | #2

Nowadays taking digital or mobile photos and sharing them online is one of the most common activities among adolescents' on social networking sites (SNS). Researchers' state that adolescents' self-disclosure on the Internet can be both, positive (helps to maintain personal relations, explore with ones' identity) and negative – may cause a risky behavior (cyberbullying, identity theft). As peers become to be an important part of teenagers everyday lives, injunctive and descriptive norms of peers play an essential role in adolescents' behavior in online and offline settings. Thus, it is possible to predict that injunctive and descriptive peer norms influence adolescents' photo disclosure on SNS. In order to find out if and how injunctive and descriptive peer norms influence adolescents' photo disclosure on SNS, the pilot study was implemented. Adolescents' photo disclosure was measured by asking adolescents' how often (from 1 (never) to 5 (very often)) do they share different types of photos (e.g., selfie, trend photos) on SNS (Cronbach's  $\alpha$ .66); injunctive peer norms were measured by asking adolescents if their significant peers would approve their photo sharing on SNS (from 1 (would totally disapprove) to 5 (would totally approve)) (Cronbach's  $\alpha$ .80); descriptive peer norms were measured by asking participants how often (from 1 (never) to 5 (very often)), to adolescents' opinion, their peers share certain photos on SNS (Cronbach's  $\alpha$ .86). One hundred and sixty six adolescents participated in the pilot study. Participants age varied from 12 to 18 years ( $M=15.57$ ,  $SD=2.04$ ). Ninety four of them were females (56.6%) and 72 (43.4%) - males. The conducted multiple linear regression model of injunctive peer norms, descriptive peer norms, age, and gender on adolescents' online photo disclosure was statistically significant ( $F(4,153)=16.77$ ,  $p<.0001$ ). The results of the study have shown that injunctive peer norms, descriptive peer norms, age, and gender explains 28.7% of adolescents' online photo disclosure. However, only injunctive peer norms ( $\beta=.30$ ) and gender ( $\beta=.31$ ) are statistically significant predictors of adolescents' online photo disclosure: female adolescents', who think that their significant peers would approve their online photo disclosure, are more likely to engage in such kind of disclosure. Thus, interventions for safer adolescents' photo disclosure on SNS could be based on injunctive peer norms, depending on SNS users' gender.

## Participants' experiences of an online guided self-help programme for bulimic-type eating disorders - A process study from a multi-site RCT

Vanessa Yim, King's College London, United Kingdom | #121

The paper is a qualitative process study of the UK-arm of a randomised controlled trial (RCT) online self-help programme (everyBody Plus), funded under the ICare Consortium by the European Commission (Protocol of the RCT: <https://doi.org/10.1016/j.invent.2018.02.010>). The aim of the two-country RCT is to overcome treatment gaps by providing online self-help to adult females with bulimic-type eating disorders (EDs) who are seeking /on waiting list for outpatient treatment. Systematic reviews have yielded varied binge eating abstinence rate, changes in ED psychopathology, as well as engagement level regarding the use of self-help interventions for EDs (Beintner, Jacobi, & Schmidt., 2014) However, few RCTs included qualitative exploration of participants' experiences, despite the growing emphasis on understanding users' needs and preferences for designing and developing e-mental health interventions.

Overall, 227 participants participated in the UK-arm of the everyBody Plus RCT. Twelve participants from the intervention condition with varied study completion rates took part in a one-to-one telephone interview between July and October, 2018. The interviews lasted between 35 to 80 minutes. Additional qualitative data for analysis include extracted real-time feedback participants inputted on the programme platform. A thematic analysis (Braun & Clarke, 2006) is in progress. Preliminary analysis reveals rich and in-depth insights into the specific user design, content and features of the self-help programme that extend beyond quantitative efficacy findings. The results will help complement and inform the final data analysis of the RCT, as well as facilitate an understanding of participants' motivations and needs during the critical stage of help-seeking for an eating disorder.

## Guided Internet-based stress management intervention for international students: A pilot study protocol

Yagmur Amanvermez, Vrije Universiteit Amsterdam, the Netherlands | #81

A considerable amount of students have been going abroad with the purpose of pursuing undergraduate or graduate education. Moving to a foreign country brings not only opportunities but also challenges for international students. International students encounter several stressors related to the adaptation to the new culture. High level of stress has been associated with the onset of depression, anxiety, eating disorders, and sleep problems among college students. Despite the high stress level, the utilization of campus mental health services by students is remarkably low due to several treatment barriers. Internet-based interventions have the potential to overcome such barriers, thereby increasing access to treatment among international students. Therefore, we are currently co-creating stress management intervention together with the international students. This intervention will consist of several online guided sessions. After we finalize the development process of the intervention, we aim to recruit 50 international students with elevated stress level in the Netherlands to evaluate the feasibility and acceptability. Our primary outcomes will be participant's satisfaction with the intervention as assessed by the Client Satisfaction Questionnaire (Attkinson and Zwick, 1982) and usability as assessed by the System Usability Scale (Brooke, 1996). Secondary outcomes of this study will be perceived stress as assessed by the Perceived Stress Scale (PSS-10), and quality of life-based on the EuroQol-5 Dimension-5 Level Scale (EQ-5DL) (Group T.E., 1990). We will also assess adherence by time spent in the intervention, the number of logins, and the number of completed modules. We will employ a single-group pre-test (t0) and post-test (t1) design. Results of this study will enable us to gain a better understanding of whether Internet interventions will be an appropriate way of reaching and helping international students with elevated stress level.

## Mobile Health Apps for Pain – a Way to Better Healthcare? A Systematic Review of Quality and Content of Available Pain Apps in Germany

Yannik Terhorst, University Ulm, Germany | #176

Pain is the number one cause for years lived with disability worldwide and is associated with major personal and economic burden. (Cost-)effective and easily accessible treatments are highly needed. Mobile health applications (MHAs) have the potential to improve healthcare for individuals with pain. Due to the rapidly growing number of MHAs, affected individuals and their care-givers are confronted with an opaque app market whose quality and safety cannot be evaluated reliably by laypersons. The present study systematically reviews content, quality and practical relevance of MHAs for pain in Germany. The web-crawler of the mobile health app database (MHAD) was used to extract available MHAs for pain in GooglePlay and iTunes stores. Extracted MHAs were selected based on pre-defined in- and exclusion criteria. MHAs' quality was assessed independently by two trained researchers using the Mobile Application Rating Scale (MARS). MARS is a multidimensional assessment tool covering four subscales: engagement, functionality, aesthetics, and information quality. MHAs content, methods and features were further classified.

A total of 1,033 MHAs were identified. So far, only free MHAs (n=58) are rated. Overall quality was  $M=3.51$  ( $SD=0.63$ ). Functionality ( $M=3.74$ ,  $SD=0.82$ ) and aesthetics ( $M=3.73$ ,  $SD=0.78$ ) were good. Information quality ( $M=3.31$ ,  $SD=0.84$ ) and engagement ( $M=3.28$ ,  $SD=0.78$ ) were average. 95% of the rated MHAs were not tested. The results of all apps as well as further information regarding therapeutic backgrounds (e.g. CBT), methods (e.g. monitoring/tracking) and other features (e.g. data-protection) will be presented at the conference.

This systematic review sheds light into the opaque market of pain MHAs. Quality and content of MHAs are made transparent and open-source accessible for pain patients and healthcare providers via the MHAD. Given a vast majority of MHAs are lacking evidence, broad use of available MHAs for pain cannot be recommended. Results will be discussed in the context of the MHAD project (<http://mhad.science/>).



# Tech Demonstrations

## Moodbuster 2.0 - Collaborative research platform for Internet interventions

José Pedro Ornelas, INESC TEC, Portugal | #107

Moodbuster is a Web research platform to empower therapists in the development and evaluation of new Internet interventions. The platform currently encompasses 6 modules, in the scope cognitive behavioural therapy, that can be applied in self-help, blended or remotely assisted contexts. Each therapeutic module takes form through sets of therapeutic pages that are composed by text, media and exercises. New and alternative therapeutic approaches are constantly appearing, thus, creating and evolving the therapeutic modules requirements. The platform results from the combined effort of developers, researchers and therapists, across nearly a decade of collaboration. The Web platform includes two main portals: the Patient portal, that allows participants to go through a therapy and the Therapist portal allows therapist to assess the participants evolution. The task of implementing new modules is traditionally dependent on software developers, which conditions the development of new interventions by domain specialists in mental health research. In order to overcome this challenge, the Intervention Builder (iBuilder) portal was designed and created. The newly created portal focuses mainly in facilitating collaborative research projects, by allowing researchers to create new therapeutic modules with minimal technical intervention. Since most of this collaborative research is cross-country, the platform is multilingual, thus incorporating the translator's role. Using the iBuilder a researcher is able to create therapeutic content using a set of building blocks that include text, media, lists, several types of inputs, instruments and calendars. Content can be then organized in modules and further aggregated in treatments, that can be translated inside the platform prior to treatment delivery. iBuilder building blocks can be linked with each other allowing researchers to compose therapies with intra and inter module logic. The Therapist and Patient portals kept all the current functionalities but were redesigned to handle the dynamically generated treatments. Moodbuster 2.0 is a collaborative research platform that allows researchers to create and deliver new and personalized Internet Interventions.

## SO REAL: Cognitive Behavioral Therapy augmented with Virtual Reality Exposure Therapy for Social Anxiety Disorder.

Benjamin Arnfred, Mental Health Center Copenhagen, Denmark | #31

**Technical /Scientific Background:** Exposure therapy has been shown to be effective in treating Social Anxiety Disorder (SAD), especially when it is part of Cognitive Behavioral Therapy (CBT). However, exposure therapy for SAD can be costly to structure logistically, and troublesome to control and graduate. In addition, many clients with SAD are so fearful that they will avoid treatment when they must face feared situations in-vivo.

Virtual Reality Exposure Therapy (VRET) might enable us to circumvent some of these problems, by making it possible to expose patients to their feared situations in the therapy room via Virtual Reality (VR) equipment.

Key features of the technology presented: Five 360 degree VR films has been shot and edited to be used in VRET for SAD. Each film depicts a typical social anxiety inducing situation and consists of four to five scenes of approx. 2 minutes length, which allows the therapist to graduate the exposure.

The films are played on an Oculus Go connected to high quality headphones. The Oculus Go places a screen in front of the users face which almost fully takes up their field of view, while simultaneously blocking out visual sensory input from the real world. Motion detectors in the Oculus Go allows the user to look around the films as they play in 360 degrees around them.

To maximize ease of use for both the client and the therapist, an app for the Oculus Go has been developed which allows the user to choose the scenes they wish to see in an intuitive and simple interface.

The technical demonstration will give a brief overview of the equipment and its intended use and then allow attenders to try the Oculus Go and see the films themselves.

Implications for everyday clinical practice of CBT: CBT augmented with VRET for SAD might increase therapy adherence, increase user acceptance of exposure therapy, reduces risk of confidentiality breaches and reduce costs associated with transport and timing (e.g. going to the supermarket in the early or late hours as an early exposure step).

## Can exposure in virtual reality help patients with eating disorders overcome anxiety of food shopping?

Jakob Hyldig Nielsen, Telepsychiatric Centre, Denmark | #139

Background: Eating disorders have a major impact on everyday functioning, and simple activities such as shopping food may cause distress. Eating disorders and anxiety symptoms seem to be closely related, and situations with meals or being near foods can induce fear and avoidance. Shame may also play a role in the maintenance and recovery of the eating disorders. Anxiety and shame can interfere with daily activities such as grocery shopping, in which both food and the fear of social judgement is present. Exposure therapy and response prevention has shown its efficacy in the treatment of anxiety disorders. Thus, we may use the same treatment approach in patients with eating disorders in situations with food. The use of Virtual Reality (VR) in eating disorder treatment is emerging. However, research in the use of VR-exposure

therapy for eating disorders is lacking. Using VR as a tool for training food shopping may help the patients overcome fear of buying a healthy meal.

**Purpose:** The purpose of the present study is to investigate whether food shopping skills can be trained in VR, and if anxiety symptoms can be reduced in a sample with eating disorders.

**Method:** Ten adults with severe eating disorder pathology are going to be exposed to ten sessions of food shopping exposure training, using a VR 360-degree 3D video in a grocery shopping scenario. The primary outcomes are anxiety and shame. Anxiety is measured using the Anxiety Symptom Questionnaire (ASS) and shame is measured using the Other as Shamer Scale (OAS). Shame and anxiety will be measured in a grocery shop before and after VR-exposure. Furthermore, interviews will be conducted with five patients and two therapists involved in the intervention. The study is planned to be conducted in April-August 2019.

**Results:** The analysis of the results will include a comparison of baseline measures before and after the VR-intervention. We expect that patients will experience that anxiety and shame is both reduced. A qualitative analysis of the acceptability and implementation will be included based on the interviews with the patients and therapists.

**Discussion:** The discussion will include interpretations and limitations of the study and its results, and the clinical and research implications of the findings. If our results are positive, we may recommend the use of VR as a tool in eating disorder rehabilitation.

### Augmented Basics -Breathe - Short VR-intervention reducing stress

Jörg Albers, Essential Exposure, Denmark | #61

Stress has been found to be a contributing factor to a number of both physiological and psychological diseases and disorders, like depression and anxiety. Our emotional state has a great impact on our physiological system through the nervous system and immune system (Perciavalle, et al., 2017). A widely used strategy for reducing both psychological and physiological symptoms associated with stress is the voluntary modification of breathing patterns. Focus on our breathing can, amongst others, help maintain focus on internal sensations instead of external stimuli, while breathing patterns physiologically can affect the nervous system (Van Diest, et al., 2014). It is a common saying to take a deep breath, when stressed out, panicked etc. But actually, this might not be the accurate description of what the body needs to calm down. According to some research, the more important thing is to focus on exhalation, which might be affected by the fact that heart rate increases during inhalation, while it decreases during exhalation (Allen & Friedman, 2012). One of the ways to (re)gain control of the nervous system seems to be through breathing techniques. When researching these, an abundance of more or less specific techniques shows up. Some of the techniques are interwoven, a lot of which are commonly known, but not thoroughly researched. Most studies agree however that the optimal breathing rate per minute is 6, which means that the optimal 2:3 breathing technique would be implementing inhalation of 4 seconds and exhalation of 6 seconds (Chaddha, 2015). Augmented Basics -Breathe (AB-B) is a short, virtual, immersive intervention by using VR-technology. It helps rebalancing stressful breathing patterns by guiding through the 4:6 rhythm. Data of improved HRVA- scores by using AB-B will be shown at the conference. AB-B will be launched in 2020 as an open-source intervention adaptable to various psychological interventions.

### The iFightDepression® Tool: How to implement iCBT across borders

Juliane Hug, European Alliance Against Depression, Germany | #40

The iFightDepression® toolkit consists of 1) a multi-language awareness website, 2) a self-management tool for patients and 3) online-training materials which is internationally administered and disseminated via the European Alliance Against Depression (EAAD) since 2016.

This presentation will focus on 2) the iFightDepression® self-management programme for adolescents and adults with milder forms of depression that incorporates principles of cognitive-behavioural therapy (CBT), mood monitoring questionnaires and work sheets for homework and personal exercises. Trained mental health professionals, such as general practitioners or psychotherapists provide guidance and maintain personal contact over the whole course of the intervention.

To our knowledge, the iFightDepression® tool is the only available free-of-cost iCBT tool in over 10 languages and up to now actively implemented in eight countries and in different cultures and health care settings. The aim of this talk is to first present international uptake and user characteristics. We will further discuss dissemination and implementation strategies of the online programme in research and routine care contexts in line with an ongoing EU-funded project ([www.implementall.eu](http://www.implementall.eu)).

### VoiceSense - content-free speech analysis for the measurement of mental health

Nina Schulze, Neuropsychiatric Center Hamburg, Germany | #97

Human language is a fundamental ability which, in addition to social interaction, primarily serves the exchange of feelings. This establishes a relationship between pure content as an expression of cognitive performance and emotional content in the sense of affective meaning. Since the 1990s, attempts have been made to determine the emotional state of the speaker by analyzing the pure contents of the spoken word and analyzing the linguistic structure. However, the form of speech, for

example emphasis on words, speech rate and vocal variability, is also influenced by different emotional states. Based on these insights, a program has been developed whose assessment of affective well-being based on content-free speech analysis is based on mathematical algorithms. The program VoiceSense is available as a smartphone App. The significance and perception of mental illnesses both in the individual and in society have increased in recent decades. The need for and use of treatment options continues to increase. This underlines the need for diagnostic tools that should be able to recognize depressive disorders as early as possible. Ideally, these methods should be usable by the person affected in order to achieve greater acceptance and to avoid stigmatization. There is also a need for instruments which can be used quickly and flexibly and are also sensitive to changes in long-term progressions. In this oral presentation we will tell you about the VoiceSense App and show results of the evaluation study.

### **Demonstration of the “Space from ...” programmes suite**

Noemi Vigano, SilverCloud Health, Ireland | #47

This technical demonstration will showcase the SilverCloud suite of programmes. It will share the breadth of programmes that are currently available on the SilverCloud platform with the audience. It will proceed to demonstrate how the content and design of the programmes come together to create a therapeutic space and experience for users of the platform. This will be achieved by taking the audience through one of the SilverCloud programmes and demonstrating different tools, content and functionalities.

### **The mDIARY RCT trial: Mobile self-monitoring during treatment of borderline personality disorder.**

Stig Helweg-Jørgensen, Telepsychiatry Centre, Denmark & University of Southern Denmark | #77

The presentation will demonstrate a “cloud”/mobile phone based self-monitoring system developed in a cooperation between 3 parties: a) Telepsychiatric Centre, Odense, Region of Southern Denmark, and b) Monsenso® - a spin off health tech company started by the developers the MONARCA RCT trial, and c) the Borderline personality disorder treatment unit from Psychiatric ward, Svendborg, Region of Southern Denmark.

The mDIARY self-monitoring system can on a daily basis visualize episodes of suicidal ideation, emotional dysregulation, self-rated day scores of well-being, use of emotion regulation-skills and much more. This can be done on patient mobile-phones and can be accessed from a secure webpage. Patient data on self-reported outcomes goes directly into a database and can be accessed as a daily, weekly, or monthly overview in the beginning of each therapy session by therapists. Data is also accessible during the week by the patients themselves. Therapist and patients are in this way able to follow and track clinically significant changes in relevant variables.

Between sessions patients can access short podcasts teaching 30 different Emotion regulation skills and access other psychoeducative material.

The mDiary RCT trial compares self-registration by paper to self-registration by mobile phone at 4 different psychiatric treatment units specializing in borderline personality disorder and treating patients with dialectical behaviour therapy.

The trial protocol and first background data on the patients enrolled in the study will be presented.

Patient time series data are collected during therapy while the patients are in psychiatric treatment. Data is collected over a year for each patient. All data collection from the study will be concluded December 2019.

Possibilities for monitoring, classification and predictions based on machine learning looks promising. Technological demands for this kind of solution are low. Requirements for using the system are basically that patients own a smartphone and therapists has functioning internet-connection. This means that perspectives for using this kind of data-collection in large treatment facilities is very encouraging. New kinds of outcome data in standard therapeutic interventions is now possible for the benefit of both patient, clinician and researcher.

### **Trappa telehealth services: a case study of successful delivery of speech therapy to Icelandic children**

Thorbjorg Helga Vigfusdottir, Kara connect ehf, Iceland | #165

Trappa has opened doors to help student services with technology. Since 2014 Trappa, a speech therapy clinic has specialized in online services to all 4 corners of Iceland. Trappa offers professional speech therapy, teaching, language learning assistance and consultation all through Kara Connect, a secure browser based solution. The clients are situated in pre-schools or elementary schools. The population of Iceland is roughly distributed between Reykjavík and the countryside - Reykjavík including more than half of Iceland's population. Services have not been provided properly nor evenly in the country - due to the lack of specialists, different and complicated payment structures (some support session paid by different levels of government) and extreme backlog of analyses not leading to treatment. On top of all this - journeys are long and often dangerous due to bad weather in school season.

Around 10-15% are in need for help and the few speech pathologists working in the countryside were overbooked leaving a lot of children completely without sufficient service. As Trappa took off providing on-line support to a small village in the remote Westfjords late 2014 the sceptics were everywhere. Since then Trappa has made recurring contracts with over 14 municipalities and/or schools all over Iceland, 7832 session of which 90% are online. Trappa has shown (similar to results from Theodoros 2011) that over 90% of school staff are happy with the results and want to continue. Similarly, clients

(parents) are almost all very happy with the support and see results and successes with their children that range from having a small sounding problem to severe language developmental problems. With comparative data from the Directorate of Health children serviced by online therapists are younger, parents meet the professionals more often and sessions are shorter. With the data from the platform used we can also see that cancellations are lowered considerably which helps therapists manage their business. Hindrances have mostly been lack of vision in municipalities and/or state governments as well as regulatory delays for this win-win method of giving access to help. In our presentation we will show comparative results between online therapy and face to face and talk about future possibilities for research.

# Author Index

Sorted alphabetically on submitting Author first name, followed by page number of the abstract(s).

Amanda Díaz-García, 40  
Amit Baumel, 24  
Andre Sourander, 24  
Ángel C. Pinto-Bruno, 25  
Angel Enrique, 25, 40, 41  
Ania Zubala, 42  
Anna Janßen, 42  
Anna Rogala, 43  
Anna-Carlotta Zarski, 43  
Anne Etzelmueller, 25  
Anne-Claire Leterme, 40  
Annet Kleiboer, 26  
Anton Käll, 26  
Araceli Palma Gomez, 43, 44  
Barbara Nacke, 26  
Bart Witvrouwen, 27  
Benjamin Arnfred, 81  
Bianka Vollert, 44  
Bláithín O'Grady, 44  
Blake Dear, 22  
Bram van der Boom, 45  
Carmen Schaeuffele, 45  
Caroline Oehler, 27  
Caroline van der Velde, 46  
Chani Nuij, 46  
Charlotte Mühlmann, 28  
Christian Døsing Sørensen, 47  
Cintia Tur Domenech, 47  
Claudia Buntrock, 28  
Cristina Mendes Santos, 28  
Daniel Duffy, 47, 48  
Derek de Beurs, 29  
Derek Richards, 29  
Desiree Colombo, 48  
Dolores Vara, 49  
Dorothee Bentz, 49  
Eleanor Bailey, 49  
Eleanor Bailey, Orygen, 50  
Elisabeth Kohls, 50  
Emily Eisner, 51  
Erik Forsell, 30  
Esben Skov Jensen, 51  
Eva De Jaegere, 30  
Eva Rames Nissen, 52  
Eva Van Assche, 30  
Ewa Makowska-Tłomak, 52  
Ewelina Smoktunowicz, 31  
Fabiana Monteiro, 52  
Felix Bolinski, 53  
Fredrik Enoksson, 53  
George Vlaescu, 31  
Georgina Cardenas-Lopez, 54  
Gerhard Andersson, 21  
Gustav Bøg Petersen, 54  
Gwendolyn Mayer, 54  
Heleen Riper, 21  
Ieva Biliunaite, 55  
Ingrid Titzler, 32  
Isaac Moshe, 55  
Jacinta Jardine, 32  
Jakob Hyldig Nielsen, 81  
Janika Thielecke, 56  
Jeanette Wopperer, 56  
Jelena Lubenko, 56  
Jessica Navarro, 57  
Jette Louise Skovgaard Larsen, 57  
Jinane Abi Ramia, 32  
Joanna Milward, 58  
Johanna Boettcher, 58  
Johanna Freund, 58  
Johannes Verner Olsen, 33  
Jonas Eimontas, 33  
Jörg Albers, 82  
Jorge Palacios, 34  
José Pedro Ornelas, 81  
Julia Sander, 59  
Juliane Hug, 82  
Karina Saruhanjan, 59  
Kate Lawler, 60  
Katja Böhme, 60  
Katrin Schoenenberg, 60  
Kiona K. Weisel, 61  
Kristina Aspvall, 62  
Kristine Tarp, 62  
Lars Clemmensen, 62  
Lasse Sander, 63  
Laura Díaz, 63  
Laura O'Connor, 64  
Leah Bührmann, 64  
Madeleine Irish, 65  
Magdalena Lesnierowska, 65  
Magnus Johansson, 34  
Maria Andersen, 66  
Maria Karekla, 66  
Marian Martínez Sanchis, 67  
Marlene Sousa, 67  
Martin Kraepelien, 34  
Martina Nord, 35  
Matilda Berg, 35  
Matthew Franklin, 36  
Matthias Domhardt, 67  
Mette Marie Åbom, 47  
Mia Beck Lichtenstein, 68  
Mieke Schulte, 68, 69  
Mikkel Berg Bagger Jensen, 69  
Naim Fanaj, 70  
Natalie Berry, 70  
Nick Titov, 22  
Nils Isacson, 36  
Nina Schulze, 82  
Noemi Vigano, 83  
Philip Lindner, 71  
Pinelopi Konstantinou, 71  
Raphael Schuster, 37  
Rasmus Thastum, 71  
Rhys Bevan Jones, 72  
Rikke Nørgaard Elster, 37  
Ruth Crowther, 38  
Selin Akkol-Solakoglu, 72  
Severin Hennemann, 73  
Sharon Chi Tak Lee, 73  
Simon Farrell, 73



Soledad Quero, 74, 75  
Sonia Mor, 75  
Stefanie Schroeder, 75  
Stephanie Allan, 22  
Stephanie Haugh, 76  
Stephen F Austin, 76  
Stig Helweg-Jørgensen, 83  
Susanne S. Pedersen, 38  
Tarja Korpilahti-Leino, 77  
Thorbjorg Helga Vigfusdottir, 83

Tine Nordgreen, 38  
Tobias Vitger, 77  
Tom van Daele, 39, 77  
Tove Wahlund, 78  
Trine T. Holmberg, 78  
Ugnė Paluckaitė, 79  
Vanessa Yim, 79  
Viktor Kaldo, 39  
Yagmur Amanvermez, 80  
Yannik Terhorst, 80