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Department of Psychology, Blåsenhus, von Kraemers allé 1

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Internet-delivered transdiagnostic psychological treatments for individuals with either primary depression, primary anxiety, or both: A systematic review and meta-analysis of randomized controlled trials

Karoline Kolaas, Anne Berman, Erik Hedman-Lagerlöf, Elin Lindsäter, Jonna Hybelius, Erland Axelsson

Common mental disorders (CMDs) are frequently seen and treated in primary care, where access to psychological interventions is limited. One method of making psychological interventions more widely available is to deliver these as transdiagnostic protocols, i.e., suited for many CMDs. We are conducting a systematic review and meta-analysis of randomized trials of transdiagnostic online psychological interventions for participants suffering from clinical levels of anxiety or depression (PROSPERO: CRD42021243172). A literature search was done 24 May 2021, and was updated on 6 February 2023. All publications were then assessed by two independent assessors in two phases; Title and abstracts in phase 1 and full texts in phase 2. Standardized effects are pooled in random effects meta-analysis. Preliminary results are presented.

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Self-guided digital intervention to increase post-detoxification treatment-seeking among individuals with substance use disorders: Research protocol with preliminary findings

Danilo Romero, Anne H Berman, Per Carlbring, Johan Franck, Philip Lindner

Introduction

Inpatient detoxification provides a safe environment for withdrawal from alcohol and/or other drugs, as a possibly vital step towards behavior change. However, many patients relapse soon after discharge from detoxification treatment and readmission is common. Estimates from the US indicate that only every sixth patient seeks and accesses post-detoxification treatment of substance use disorders (SUD). In this two-phase project, we aim to (1) investigate the post-detoxification treatment gap and related patient-reported factors, and (2) develop and evaluate a self-guided digital intervention delivered after discharge, with the aim of increasing post-detoxification treatment.

Methods

We have collected data for a registry-based mapping of patient flow from inpatient detoxification to outpatient treatment ($N = 9,771$) and conducted qualitative interviews ($n = 23$) on patients' perceptions of barriers to treatment. These preparatory studies inform the ongoing development of a digital intervention, to be evaluated using a quasi-experimental interrupted time series design. We have conducted a simulation-based power analysis to estimate the minimum detectable effect size.

Preliminary results

In addition to general person-related (e.g. stigma) and treatment-related (e.g. low accessibility) barriers to SUD treatment, interviewees reported context-specific barriers, most notably psychological vulnerability following discharge, which for some triggered a reluctance to experience in-person contact. Digital support may thus respond to their needs. In the simulation-based power analysis, we ran 10,000 simulations for each of a total of 128 scenarios, varying intervention length, effect size and change curve. Results suggested that the study, given a 1-year intervention period, an alpha level of .05 and power level of .8, will be powered to detect an absolute increase of at least 2% or 3%.

Discussion

To our knowledge, this is the first project to evaluate a digital intervention for promoting post-detoxification treatment seeking. By offering a cost-effective, scalable intervention with minimal exclusion criteria, the study will, in case of successful outcomes, provide a novel and sustainable approach to increase post-detoxification treatment-seeking in real-world settings.

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The development of game-based digital mental health interventions: An integrative framework bridging the paradigms of healthcare and entertainment

Lauri Lukka, J. Matias Palva

Game-based approaches are increasingly used to improve user engagement of digital mental health interventions (DMHI) while specific game mechanics may yield therapeutic effects per se and thereby contribute to DMHI efficacy. Yet, game-based interventions have seen only limited commercial usage. We suggest that the challenges reflect the tension between the two underlying paradigms—healthcare and entertainment—that have disparate goals, and consequently, different approaches to intervention development. We describe three approaches currently used to negotiate the paradigms: gamification of healthcare software, designing serious games, and purpose-shifting existing entertainment games. We advance an integrative TEME framework to support the research and development of these game-based digital mental health interventions (gDMHI). The framework focuses on the interdependencies between the Target audience, user Engagement, the Mechanisms of action, and health-related Effectiveness. On each theme, we exhibit how the two paradigms complement each other. We elaborate the framework by considering its implications through the development from concept to production.

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Outcome of iCBT for ADHD symptoms: A randomized controlled study

Ellinor Engström, Erik Olsson, Martin Oscarsson, David Forsström

Attention deficit hyperactivity disorder is a disorder characterized by, hyperactivity, impulsivity, lack of attention. The condition results in several impairments that can impair everyday functioning and lead to underperformance. At present, there are not many large scale studies that have investigated the effect of Internet-based Cognitive Behavioral Therapy (iCBT) for ADHD symptoms. This study presents the outcome of a clinical trial of internet-based cognitive behavioral therapy (iCBT), using a randomized controlled study design, with the primary aim to increase quality of life, as well as to reduce symptoms of ADHD, anxiety, depression, and stress. Approximately a hundred participants with symptoms of ADHD will be included in the first wave (recruitment for the second wave comprised of an additional 100 participants is ongoing) and randomized to two conditions (treatment and wait-list control). The treatment period is comprised of ten weeks, with two mandatory modules and ten modules from which the participants can choose freely. The study utilizes an intention to treat design, with ANOVAs and Reliable Change Index to evaluate treatment effects both on an individual and group level. Implications for iCBT for ADHD symptoms will be discussed.

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ICBT for SAD: The concept of local evidence and replication

Gerhard Andersson

ICBT for social anxiety disorder began in Sweden in 2003 when we did the first controlled trial. Now the initial promising results have been replicated by numerous research groups, long-term effects established and also implementation project. In the present talk I will give a rapid overview of the evidence but also highlight future challenges and the concept of "local evidence". In other words should we strive to replicate and culturally adapt ICBT protocols for use in different countries and languages? In psychotherapy research few have focused on how well treatments can be transferred to other settings. ICBT research on SAD is an exception. However, very few studies exist in non-Western languages and settings.

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New CBT-model for stress-induced exhaustion delivered via Internet

Jakob Clason van de Leur, Sanna Forslund, Monica Burhman, Lance McCracken

Since 2009 long term sick-leave rates due to mental disorders have been increasing in Sweden and are today the leading cause of long-term sick leave. Stress-induced exhaustion disorder (SED) accounts for most of this increase. Unfortunately, despite several published treatment studies, no evidence-based treatments exist for SED, and little is still known about the focus of treatment.

Currently, there are no established theoretical models for the development and maintenance of SED. Many of the published clinical SED trials consist of long (6 months or more) Multimodal interventions (MMI) containing various medical, psychological, and physiotherapeutic methods with a low degree of understanding of what components are critical for treatment success. Even if ENTS patients participating in MMI report symptom improvements and work resumption, MMI is generally personnel intensive and challenging to administer. These factors increase the risk of extended healthcare lead times and obstruct treatment dissemination.

Considering the increasing sick-leave rates due to ENTS, there is an apparent need for more accessible treatments based on pronounced theoretical models focusing on specific change processes. In an ongoing pilot study with 25-30 participants, we are currently evaluating a hybrid MMI built around an internet-delivered cognitive behavioral therapy based on a new biopsychosocial treatment model of SED. We are collecting outcome measures before and after treatment and at three and six-month follow-ups. We are also collecting weekly measurements of putative processes of change. We aim to evaluate whether this more restricted and theoretically coherent hybrid MMI shows promising results before we test the treatment solely as an internet CBT in a randomized controlled trial.

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From research to practice: Implementation of ICBT in the Swedish health care system

Kristofer Vernmark

With covid-19 as an accelerating factor, digital mental health is on the rise all over the world as it offers the possibility of increased access to effective care for psychological, psychiatric and even somatic problems. Sweden has been one of the pioneering countries in this field and has a long research tradition within internet-based CBT (CBT), as well as being one of the worlds leading countries in providing digital interventions for mental health through publicly funded care givers, either in public or private settings. Even so, many challenges exist regarding implementation and dissemination of ICBT-programs in regular care. This presentation gives an overview and historic perspective of the field of internet-based interventions in Sweden, from a research and regular care perspective, and also address the current state from an implementation framework perspective.

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Pilot study of clinical utility and acceptability of the unified protocol applied in blended format in the Spanish public mental health system

Jorge Osma, Laura Martínez-García, Vanesa Ferreres-Galán, Alba Quílez-Orden, Alberto González-Pérez y Alba Fadrique-Jiménez

Introduction: Emotional disorders (EDs) are the most prevalent psychological disorders in the general population, which has increased the economic and health care burden associated with their treatment. For this reason, finding cost-effective solutions for their management is one of the key objectives of clinical psychology nowadays. Blended treatments are presented as a possible solution, considering that it is known that the preferred intervention format by patients with EDs in the Spanish Public Health System (SPHS) is the individual, face-to-face format. In turn, as it is a manualized treatment, which makes it easier to deliver in blended format, and that can be applied simultaneously to a variety of EDs, the Unified Protocol for the Transdiagnostic Treatment of EDs (UP) might serve this purpose. To date, the efficacy of the UP has been supported by numerous studies, including three systematic reviews and meta-

analyses. The present study is a pilot trial that will analyze the preliminary clinical utility and acceptability of UP in a blended format (individual face-to-face UP + UP-Smartphone app) in a sample of patients with a diagnosis of an ED in public settings in Spain.

Method: This study is actually recruiting participants then the expected sample of this presentation will consist of 10 patients recruited in public mental health centers in Spain, diagnosed with an ED. All of them will receive the UP in a blended format, that is individual UP face-to-face sessions together with a smartphone app that includes all the contents of the UP modules as well as exercises and weekly emotional and motivational assessments. The UP-app is expected to be used between psychological appointments.

Results: During the congress, the preliminary results obtained in this study on variables of depressive and anxiety symptomatology and related variables associated with EDs will be presented and described in depth. In addition, data about usability, satisfaction, and opinion of the app and its content will be also presented.

Conclusion: We expect the application of the UP in a blended format to be clinically useful and acceptable for addressing EDs in the SPHS. The pilot study can also provide valuable information about changes to be included in the app for its future utilization in a RCT.

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Transdiagnostic Internet interventions: A breakthrough in psychological disorders?

Per Carlbring, Kristina Lindqvist, Jakob Mechler, George Vlaescu, Björn Philips, Gerhard Andersson

Traditional evidence-based treatments for psychological disorders are often specific to one diagnosis. Some criticize this approach for not accounting for individual variation in symptoms. Transdiagnostic treatments aim to address this issue by being applicable to a wider range of patients. This study, called TRAbec, compares two transdiagnostic modalities: Unified Protocol (=Cognitive Behavior Therapy) and Affect Phobia Therapy (= Psychodynamic Psychotherapy). The study design is a randomized controlled trial with $n=2400$ participants who are divided into 12 subgroups based on treatment modality (CBT vs. PDT vs. waitlist), duration (8 or 16 weeks of treatment), and discussion forum access (yes/no). Participants were randomly assigned and measured weekly during treatment and then at 6, 12 and 24 months. Inclusion criteria: 18 years or older, ability to read/write Swedish, access to smartphone/computer, GAD-7 score ≥ 5 , and/or PHQ-9 score ≥ 10 . Exclusion criteria: current psychological treatment, recent medication change, severe depression/suicidality. Outcome measures include GAD7, PHQ9, PID-5, RFQ-8, NEQ, and quality of life. Follow-up data is still being collected, but preliminary results including 12 month follow-up will be available at the SWERii conference.

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Online support groups for mental health promotion of Brazilian graduate students within the COVID-19 pandemic context

Elisabeth Kohls, Sabrina Baldofski, Christine Rummel-Kluge, Joanneliese de Lucas Freitas

The outbreak of the COVID-19 pandemic in 2020 aggravated already existing difficulties and added new challenges for students to face. Online group interventions are a helpful strategy for students' mental health promotion. In Brazil, e-mental health is a very recent practice. The study aimed to investigate the acceptability and feasibility of a four-week online support group program for mental health promotion tailored to graduate students at a Brazilian university during the COVID-19 pandemic (May-June 2022). Participants took part in online support groups based on a pilot group facilitated by a trained clinical psychologist. Self-administered measures were assessed online at baseline (T0, pre-intervention), post-intervention (T2), and at follow-up (T3, after 4-6 weeks). We measured sociodemographic variables, intervention credibility/expectancy (Credibility/Expectancy Questionnaire), satisfaction (Client Satisfaction Questionnaire-8), negative effects of the program (Negative Effects Questionnaire), depressive symptoms (Patient Health Questionnaire-9), and participant's quality of life (World Health Organization Quality of Life assessment). A nine-answer options questionnaire and open-ended questions assessed the perceived positive and negative outcomes. The total sample comprises $N = 32$ participants, mostly doctoral students ($n = 23, 71.9\%$).

Credibility/expectancy scores were high. Participants' satisfaction with the program was high at T2 (T2: $M = 28.66$, $SD = 3.02$) and T3 (T3: $M = 27.91$, $SD = 3.02$). Most of the participants reported they could learn from other participants' experiences (T2: $n = 29$, 90.6%; T3: $n = 27$, 84.4%) and felt encouraged to take better care of themselves (T2: $n = 22$, 68.8%; T3: $n = 24$, 75.0%). None of the participants reported they had no benefit from the program. The physical, psychological, and environmental domains of quality of life showed a significant improvement at T2 (T0: $M = 57.03$ – 59.18 ; T2: $M = 64.32$ – 68.75). The social domain was not affected by the intervention, which could be related to social distancing measures. Online support groups for mental health promotion of graduate students are feasible, satisfactory, and may positively influence participants' quality of life.

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Implementing ICBT in routine care: Lessons learned

Johan Edbacken, Hanna Tarkian Tillgren

This presentation will discuss the implementation of Internet-based Cognitive Behavioral Therapy (ICBT) in routine care, based on our experiences as a successful Swedish region and as a distributor of treatment programs. The efficacy and effectiveness of ICBT for various mental health problems is well established. However, implementation in routine care can present challenges and result in varying uptake and adherence. We will share our lessons learned from implementing ICBT in routine care.

First, we'll discuss the importance of organising and supporting implementation. This covers governance, management, engagement with care units, and ensuring stability and further development over time. We aim to answer why some clinics/regions are more successful in allocating patients to ICBT.

Second, we'll address factors impacting ICBT therapists and difficulties that may arise during implementation and beyond, such as resistance, motivation, and continuous training. We'll discuss how to provide the necessary tools for successful and sustained satisfaction with ICBT.

Finally, we'll discuss key features of the programs for widespread, sustained use. This will include discussing the programs' development, management, and continuous improvement, in collaboration with regions and end users.

Overall, this presentation will provide practical insights for mental health professionals and organisations looking to implement ICBT into routine care. By sharing our lessons learned, we hope to support others in overcoming the challenges and realising the benefits of ICBT as a valuable treatment option. The main takeaway is that, while ICBT implementation in routine care can present challenges, these can be overcome with the right approach and support, improving access to evidence-based mental health treatment for patients.

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A self-guided intervention for health anxiety

Susanna Österman, Erik Forsell, Martin Kraepelien

Introduction:

Guided internet interventions for severe health anxiety are often efficacious but the therapist-guidance consumes clinician time and administration, which can hinder implementation. Self-guided interventions could increase availability, but need to be carefully constructed in order to enable high compliance to core components of the intervention.

Methods:

The construction of a digital tool for severe health anxiety, based on exposure and response prevention will be presented. The tool will use an optimized digital user interface, less amount of text, and no therapist-guidance compared to the full intervention which it was based on.

Results:

Preliminary compliance data, quality and safety will be presented from a feasibility with 25 participants.

Discussion:

If compliance to core techniques, and clinical outcomes, are shown to be similar to those in guided internet interventions, this new self-guided intervention can be an easily administered first step for health care services in the treatment severe health anxiety.

May 23

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Treatment related helping and hindering factors for iCBT for ADHD symptoms: A qualitative study

Alexa Kjellberg, Laura Holmberg, Martin Oscarsson, David Forsström

Attention deficit hyperactivity disorder (ADHD) is a condition with symptoms such as hyperactivity, impulsivity, lack of attention. ADHD can affect every day for an individual in a comprehensive way leading to poor performance and negative consequences. However, little is known about what influences treatment success and what patients experience as helping and hindering in this context. The aim of this current study is to evaluate helping and hindering factors for undergoing iCBT for ADHD. An additional focus on helping and hindering factors outside the treatment setting also included. Participants are recruited from a randomized controlled trial and those who completed the treatment is asked to participate in the study. The goal of the treatment is to increase everyday functioning and decrease ADHD symptoms. Participants are interviewed via telephone using a semi-structured interview guide and transcribed verbatim. The interviews are analyzed using thematic analysis. The results regarding helping and hindering factors are discussed in relation to treatment adherence and outcome of treatment. The study will inform how future treatments can be implemented in a better way.

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Teaching digital mental health treatment in theory and practice: A proof-of-concept pilot and feasibility study

Anne H Berman, Martin Kraepelien, Christopher Sundström, Olof Molander, Claes Andersson, Gerhard Andersson, Marcus Bendtsen, Petra Lindfors, Erik Olsson, Catharina Strid, Naira Topooco

Objective: The labor market for mental health professionals increasingly requires competency in digital mental health treatment (DMHT). This presentation targets DMHT practitioners as course developers and teachers, describing proof-of-concept findings based on a) development of a remotely delivered DMHT course; and b) results from a qualitative evaluation of students' experiences from the first course round.

Methods: The course syllabus was developed through two structured workshops, attended by 11 stakeholders with DMHT experience. For the qualitative evaluation, interviews with seven women participants in the first course round were analyzed according to an inductive, phenomenographic approach.

Results: The course development process established a 12-week syllabus covering historical development and evidence for DMHT and an 8-week DMHT clinical practicum treating students with common mental health problems. Examination was formulated as individual case reports encompassing reflections on a) the therapist and client roles; b) ethical aspects of DMHT; and c) future innovations for DMHT. The course is offered via a standard learning management system, with the practicum completed on a separate DMHT platform. The qualitative analysis of the first pilot course round, where students role-played therapists and clients, yielded six themes: overall course experience, treatment program and platform, therapist role, client role, supervision and the alliance.

Conclusions: This proof-of-concept procedure led to course establishment in two formats: as an ordinary elective course for advanced clinical psychology students, and as a stand-alone national course for health professionals with basic psychotherapy training. Following local adaptation, the course could be replicated at additional universities globally.

Presenters: Anne H. Berman Professor in Clinical psychology; Naira Topooco, researcher, Uppsala University

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Long term effects of stepped-care treatment for children and adolescents with obsessive-compulsive disorder: A two-year follow-up

Klara Olofsson Lauri, Erik Andersson, Lisa Norlin, Karin Melin, David Mataix-Cols, Eva Serlachius, Kristina Aspvall

Background: A recent trial showed that internet-delivered cognitive behavioral therapy (CBT) in a stepped-care model was non-inferior, and cost-effective compared to in-person CBT alone in children and adolescents with obsessive-compulsive disorder (OCD). The aim of the current study was to evaluate the long-term effects of the stepped-care approach.

Methods: 152 children and adolescents with OCD (age range 8-17 years) from two specialist clinics in Sweden were randomized to either stepped-care treatment or in-person CBT alone. The primary end point of the original trial was six months after the end of treatment. Two naturalistic follow-up assessments were conducted one and two years after the end of treatment. Primary outcome was the Children's Yale-Brown Obsessive-Compulsive Scale (CY-BOCS).

Results: No significant between-group differences were observed on neither the primary or secondary outcome measures at either the one- or two-year follow-up. The estimated mean difference on the CY-BOCS was 0.20 points at the 2-year follow-up (95% CI, -2.86 to 3.26; P=0.90). At the 2-year follow-up, 66% in the stepped-care group were classified as being in remission compared to 71% in the in-person CBT group.

Conclusions: The effects of internet-delivered CBT in a stepped-care model were comparable to the effects of in-person CBT alone up to two years after the end of treatment. The results provide additional evidence that internet-delivered CBT delivered in a stepped-care fashion is a safe, effective and durable treatment model for young people with OCD

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Using online groups to prevent emotional disorders and symptoms in a sample of university students: Acceptability and preliminary clinical utility at 3-month follow-up

Óscar Peris-Baquero, Jordi Socías-Soler, Laura Martínez-García, Erick Cabrera-Guaman, Jorge Osma

Introduction: According to the literature, around 34.2% of university students present moderate and severe scores in anxiety and depression symptoms. For this reason, it is necessary to develop and implement prevention programs to shorten the duration of possible episodes of depression and anxiety, avoid long-term functional impairment and prevent more serious disorders. The Unified Protocol for transdiagnostic treatment of emotional disorders (UP) is a treatment specially designed to address emotional symptomatology and its versatility allows its application in a flexible number of sessions and in group format. Our objective with this study is to analyze the preliminary efficacy of the application of the UP in a preventive, group and online format in university students.

Method: Five groups formed by university students who received a preventive UP adaptation of five online group sessions were conducted. The sample consisted of 17 students of the University of Zaragoza (Spain), most of them women (88.23%) with a mean age of 22.41 years (SD = 2.60, range 18-27). Some of the variables analyzed are: neuroticism, extraversion and avoidance (MEDI), emotional regulation (DERS), and quality of life (EuroQol-5D). In addition, we assessed the participants opinions about the content of the program and also about the group and online intervention format.

Results: The results showed statistically significant changes after the preventive program in the avoidance variable ($t = 2.51, p = .023$) and in the emotional inattention variable ($t = 4.71, p < .001$). All participants shown a high satisfaction with the application format (online and group) ($M = 9.35, SD = 0.79$, range 8-10), showing great acceptability and almost none discomfort caused. Data up to 3-month follow-up will be presented at the conference.

Conclusion: The results obtained in this study can serve as a basis for future research on transdiagnostic prevention models to improve the effectiveness of this type of prevention programs and in this type of group and online format, which allows greater flexibility and cost-effectiveness, and therefore facilitates their implementation.

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Internet-administered, low-intensity cognitive behavioral therapy for parents of children treated for cancer: A feasibility trial (ENGAGE)

Joanne Woodford, Ella Thiblin, Christina Reuther, Johan Lundgren, Nina Lutvica, Louise von Essen

Background and Aims

Parents of children treated for cancer may report mental health difficulties, such as anxiety and depression. However, the psychological needs of parents are unmet. Alongside fathers and mothers of children previously treated for cancer we developed EJDeR (internetbaserad självhjälp för föräldrar till barn som avslutat en behandling mot cancer), an internet-administered, low-intensity cognitive behavioral therapy intervention. Following development, we conducted the single-arm feasibility study ENGAGE. Primary objectives examined methodological, procedural, and clinical uncertainties to prepare for the design and conduct of a future pilot randomized controlled trial (RCT) and subsequent superiority RCT.

Methods

A single-arm feasibility trial of EJDeR, with data collected at baseline, post-treatment (12 weeks), and follow-up (6 months) and mixed-methods process evaluation. Primary objectives examined: 1) estimates of recruitment and retention rates; 2) feasibility and acceptability of data collection instruments and procedures; and 3) intervention feasibility and acceptability.

Results

In summary: 1) 75 participants were enrolled, exceeding sample size expectations; 2) 11.0% of invited parents were enrolled, exceeding progression criteria of $\geq 9\%$; 3) 24.0% dropped out of the study, and 23.6% dropped out of the intervention, bettering progression criteria of $\leq 30\%$; 4) missing items per questionnaire ranged remained under $\leq 10\%$ for all measures; 5) no substantial negative consequences related to participation were reported; and 6) intervention adherence was 47.9%, marginally under progression criteria of $\geq 50\%$.

Conclusions

Findings suggest a guided, low-intensity cognitive behavioural therapy, eHealth intervention may represent a feasible and acceptable solution for parents of children treated for cancer. With minor modifications to study procedures and intervention design and content, progression to an RCT and subsequent superiority RCT is warranted.

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Implementing an internet-based treatment protocol for GAD in psychiatric care: A pilot-feasibility trial

Vilgot Huhn, Erik Forsell, Tove Wahlund, Erik Andersson

Background: Generalized Anxiety Disorder (GAD) is a common and debilitating anxiety disorder with a chronic course and a low rate of spontaneous remission. GAD is distinguished by a high degree of excessive worry about multiple subjects, as well as an experience that this worry is difficult to control. An influential model of how this excessive worry works in GAD is the Intolerance of uncertainty model. Multiple studies have shown that ICBT for GAD is effective, but in Sweden implementation remains limited.

Aim: In this pilot-feasibility-trial we will implement a treatment protocol based on the intolerance of uncertainty model of worry at the internet psychiatry clinic in Huddinge.

Method: The treatment is 10 weeks long and consists of 8 modules. Each patient will have regular text-based contact with a psychologist. Recruitment is ongoing as of December 2022 and the last patient is expected to complete treatment in April 2023. We aim to treat between 20 to 30 patients.

Results will be available by the time of the SwesRII 2023 conference. We hope to show that the treatment is tentatively effective and acceptable, in order to then use it in our larger study comparing two treatments that will start in 2023.

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Assessment and internet interventions for mental health problems among university students: Swedish partnership in the WHO World Mental Health international college student study

Anne H Berman, Naira Topooco, Olof Molander, Claes Andersson, Marcus Bendtsen, Petra Lindfors

One in three university students present with mental health symptoms. Help-seeking behavior is low due to emotional and practical barriers. The objectives of this session are to introduce and report on initial findings of the Swedish part of the WHO World Mental Health International College Student (WMH-ICS) project, which aims at mapping students' mental health problems and proactively deliver internet interventions to those identified at risk.

1) Project introduction

The project conducts annual epidemiological surveys with 15 universities and colleges in Sweden. Students presenting with mental health problems in surveys are offered participation in a three-arm RCT, evaluating guided or unguided transdiagnostic ICBT against waiting list. In an embedded trial-within-trial, participants in treatment showing no improvement are randomized to personally adapted treatment (1:1) at mid-treatment.

2) Students' experiences of a campus-wide mental health survey

Between 2020–2022, over 2000 college students completing the WMH-ICS survey commented on their experience with it. We report results from an analysis of the open-ended responses using Consensual Qualitative Research-Modified methodology.

3) Feasibility pilot results

In a single-group pilot study (n=28), students screening positive for depression (PHQ-9) and/or anxiety (GAD-7) received therapist-guided transdiagnostic ICBT over 8 weeks. We report on feasibility outcomes such as recruitment, uptake, measures of acceptability, and adaptive treatment procedures.

4) Implementing digital psychology in academic curriculums

The project led to a proof-of-concept course establishment for advanced clinical psychology students and health professionals: "Digital Psychology in Theory and Practice". We report on the course syllabus and experiences of pilot course participants.

Presenters: Anne H. Berman Professor in Clinical psychology; Naira Topooco, researcher, Uppsala University

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Sleep restriction versus sleep compression on insomnia severity and adverse events: A randomized control trial

Ann Rosén and Susanna Jernelöv, Erik Forsell, Kerstin Blom, Ekatarina Ivanova, Torbjörn Åkerstedt, Markus Jansson-Fröjmark and Viktor Kaldo

Background:

Cognitive behavioral therapy is recommended as first line treatment for insomnia disorder. One of the central components is sleep restriction therapy, an intervention also known to be effective as a stand-alone treatment.

Although effective, sleep restriction therapy is also associated with negative side effects. An alternative to sleep restriction therapy is sleep compression therapy, a similar but still different intervention with a more stepwise approach which is believed to be more gentle and yield comparable results. However, there are no direct comparisons of the two treatments on insomnia severity, and no investigation of adverse effects in sleep compression has been published.

The aim in the present study is to compare sleep compression and sleep restriction with the hypothesis that insomnia severity will improve faster in sleep restriction group, shown as a larger improvement at week five. At week ten however, no differences will be seen between the treatments. An additional hypothesis is that sleep compression is better tolerated by the patients.

Method:

A total of 234 adults with insomnia were randomized to either sleep restriction therapy (n=1117) or sleep compression therapy (n=117). Patients underwent therapist supported online treatment for insomnia during five weeks, followed by five weeks of continued work but without therapist support. Insomnia severity was assessed at baseline, at each week during the first five weeks and at post week ten. Adverse events were assessed at week two, four and five. Results were analyzed using linear mixed effect models, and to establish non-inferiority a predefined cut-off of 3 points on the Insomnia Severity Index was used.

Preliminary results:

From baseline to week five, there was no statistically significant difference between the two treatments on Insomnia Severity Index. Sleep compression was also shown to be non-inferior to sleep restriction at week ten. Moreover, there were no difference between the treatment on number of adverse events experienced during treatment.

Conclusions:

The preliminary findings indicate that sleep compression therapy could potentially be a valid alternative to sleep restriction therapy, with similar effects on insomnia severity.

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Investigation of a novel online self-guided cognitive intervention for unwanted intrusive thoughts about harming infants in new parents

Klara Olofsdotter Lauri, Kristina Aspvall, David Mataix-Cols, Eva Serlachius, Christian Rück, Erik Andersson

Introduction: Most new parents occasionally experience unwanted intrusive thoughts (UITs) about intentionally harming their child. For about one fifth of parents, these thoughts become distressing and interfere with parental function and personal relationships. Many do not seek help due to shame associated with the intrusive thoughts.

Objective: To evaluate initial efficacy, feasibility and acceptability of a novel online self-guided cognitive intervention for new parents with distressing and impairing UITs. A secondary aim was to investigate if the effect was mediated by reduced negative appraisals of UITs (the hypothesized mechanism of change).

Methods: Self-recruited parents (N=43) of children 0-3 years reporting daily distressing and impairing UITs were randomized to the self-guided online cognitive intervention or to waiting-list. The primary outcome was the Parental Thoughts and Behaviour Checklist (PTBC) at posttreatment (week 8). The PTBC and negative appraisals (hypothesized mediator) were assessed weekly (weeks 0-7), week 8 and week 12. Secondary outcomes included depressive symptoms, sleep impairment, daily functioning and parental function.

Results: The intervention led to significantly larger reductions in distress and impairment associated with UITs at week 8 (d=.99), which were maintained at week 12 (d=.90). The differences on all secondary outcome measures favored the intervention group at 8 and 12 weeks. The intervention was deemed to be feasible and acceptable by the participants. The effects were mediated through reductions in negative appraisals.

Conclusions: A brief, online self-guided cognitive intervention can significantly reduce distress and impairment associated with UITs in new parents.

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Apprehension and disappointment: Negative effects of an effective trauma-focused self-management app

Ida Hensler, Josefin Sveen, Martin Cernvall, Filip K. Arnberg

Psychological side effects, i.e. negative effects, of apps that aim to improve mental health are scarcely investigated. Interventions can be effective, yet elicit negative reactions. The Swedish version of PTSD Coach, a trauma-focused self-management app, reduces posttraumatic stress and depressive symptoms (Hensler, I., Sveen, J., Cernvall, M., & Arnberg, F. K. (2022). Efficacy, Benefits, and Harms of a Self-management App in a Swedish Trauma-Exposed Community Sample (PTSD Coach): Randomized Controlled Trial. *Journal of Medical Internet Research*, 24(3), e31419. <https://doi.org/10.2196/31419>). We assessed negative effects among users of PTSD Coach during a randomized controlled trial and follow-up (Hensler, I., Sveen, J., Cernvall, M., & Arnberg, F. K. (in review). Longitudinal follow-up of the randomized controlled trial of access to the trauma-focused self-management app PTSD Coach). The Negative Effects Questionnaire (20-item version) was adapted to assess reactions from using an unguided app. We collected self-rated negative effects from 130 trauma-exposed adults with instant ($n = 69$) or delayed access to PTSD Coach ($n = 61$) after 3 months of app access. Users reported feeling greater stress, anxiety, unpleasant feelings and that unpleasant memories resurfaced related to using PTSD Coach. No one reported increased suicidal thoughts because of PTSD Coach. Common negative effects also reflected reactions to the design, content and capabilities of the app, e.g. low confidence in the app, unfulfilled expectations of its ability to motivate, produce results and convey the content in an understandable manner. Most people experienced few negative effects of PTSD Coach, yet negative effects are a concern for dissemination of mental health apps as stand-alone interventions. In this presentation, we discuss the findings and challenges of interpreting levels and intensity of negative effects incited by app and internet interventions in the absence of comparable data.

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Clinically sufficient classification accuracy and key predictors of treatment failure in a randomized controlled trial of Internet-delivered cognitive behavior therapy for insomnia

Erik Forsell, Susanna Jernelöv, Kerstin Blom, Viktor Kaldo

Background

In Adaptive Treatment Strategies, each patient's outcome is predicted early in treatment, and treatment is adapted for those at risk of failure. It is unclear what minimum accuracy is needed for a classifier to be clinically useful. This study aimed to establish an empirically supported benchmark accuracy for an Adaptive Treatment Strategy and explore the relative value of input predictors.

Method

Predictions from 200 patients receiving Internet-delivered cognitive-behavioral therapy in an RCT was analyzed. Correlation and logistic regression was used to explore all included predictors and the predictive capacity of different models.

Results

The classifier had a Balanced accuracy of 67 %. Eleven out of the 21 predictors correlated significantly with Failure. A model using all predictors explained 56 % of the outcome variance, and simpler models between 16 and 47 %. Important predictors were patient rated stress, treatment credibility, depression change, and insomnia symptoms at week 3 as well as clinician rated attitudes towards homework and sleep medication.

Conclusions

The accuracy (67 %) found in this study sets a minimum benchmark for when prediction accuracy could be clinically useful. Key predictive factors were mainly related to insomnia, depression or treatment involvement. Simpler predictive models showed some promise and should be developed further, possibly using machine learning methods.

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Co-designing a psychosocial self-management mobile app for teenagers in grief

Rebecca Rhodin, Rakel Eklund, Anneli Silvén Hagström, Atle Dyregrov, Josefin Sveen

Background: More than 4000 Swedish children lose a family member to fatal causes each year. Losing a family member is a traumatic event that increases the risk of mental health difficulties. Evaluated support interventions targeting bereaved teenagers are few, and there are significant disparities among existing services across Sweden. Mobile health (mHealth) offers a suitable platform for delivering mental health interventions to teenagers, yet there are currently no previous studies on mHealth interventions for bereaved teenagers.

Aim: The aim is to develop a psychosocial self-management mobile app for teenagers in grief through a co-design process.

Method: The mobile app is developed using a co-design process with a non-profit organisation for children in grief, a reference group of 7 bereaved teenagers 13-19 years old, and an advisory group. Involved stakeholders contribute to the process with a wide variety of perspectives on teenage bereavement. Perspectives range from having first-hand experience of bereavement, working professionally with providing treatment or support to teenagers in grief, to being knowledgeable in user experience (UX) design. The different stakeholders take part in a collective, creative design process where they jointly articulate needs and explore solutions, and where stakeholders' roles are tailored to their areas of expertise. The first version of the developed app will be tested by teenagers in the reference group and their user experience will be documented using semi-structured interviews.

Results: Preliminary results indicate that the involvement of different stakeholders in the co-design process has entailed substantial contributions to the app and that involving different perspectives and expertise in various ways and for different parts of the process may be beneficial.

Conclusion: Utilizing a co-design process in the development of internet-based interventions has the potential to benefit and enrich the intervention through the inclusion of a multitude of perspectives and stakeholders. The intervention and its effect on mental health and well-being will be evaluated in a pilot study and a sequent randomised controlled trial.

Ψ

DIARY Intervention: Study protocol for an RCT

Leo Kowalski, Aleksandra Sjöström-Bujacz, Andreas Stenling, Anna Finnes

Background & motivation: Work-related stress is a well-known risk factor for mental disorders, including burnout syndrome and depression. Effective stress recovery, which is crucially important for reducing the negative effects of work-related stressors, could be greatly improved through digital interventions. mHealth solutions are among the most promising options for providing standardized, scalable, and cost-effective interventions in an organizational context.

DIARY (Daily Intervention for Active Recovery) is a daily, month-long mHealth intervention promoting effective recovery strategies for mitigating the negative consequences of work-related stress. The app has been iteratively developed and refined through feasibility and user testing. Results from these studies indicate that the project is possible to implement and is very well-received by participants. The effectiveness of DIARY will now be tested in a randomized controlled trial.

Methods: The trial is a randomized, participant blinded, superiority trial with two parallel groups. The DIARY intervention is compared with an active control group which receives an intervention promoting physical activity. The study employs a longitudinal PPF (pre, post, follow-up) structure in which outcomes - recovery and burnout symptoms - are measured immediately before, immediately after, and one month after the end of the intervention. Analysis will be conducted using linear mixed models with repeated measures. According to intention-to-treat principles, all available data are used and participants are included as part of their allocated group regardless of protocol adherence.

Implications: An effective intervention would contribute to a standardized, scalable, and cost-effective tool to reduce stress symptoms for workers and thus decrease the risk of long-term health problems. Additionally, the study will provide a deeper insight into how daily digital interventions can be used to motivate health behavior change.

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Increasing accessibility to iCBT for depression: A randomised controlled trial of condensed versus standard length treatment

Magnus Karlsson-Good, Viktor Kaldö, Linnea Lundberg, Martin Kraepelien, Susanne A Anthony, Fredrik Holländare

Background: Research shows that internet-based CBT (iCBT) is an effective treatment for depression. However, little is known about how length of treatment text material affects outcomes. Accessibility to treatment would improve if treatment could be presented with less text, especially for patients with ADHD symptoms and lower reading speed.

Objective: The aim of this study was to test the hypothesis that a Condensed treatment would be non-inferior to a Full-length treatment. We further hypothesized that a Condensed treatment would be extra helpful for participants with a low reading speed and more ADHD symptoms.

Method: A single-blind randomised controlled trial was conducted (N = 267) comparing two versions of guided iCBT for depression; Full-length (60 000 words) and Condensed (30 000 words). Estimated between-group effect sizes and their confidence intervals were compared to a pre-determined non-inferiority margin (Cohen's d = 0.4). Moderation analyses of reading speed and ADHD symptoms were conducted, as well as comparisons of treatment engagement and knowledge acquisition.

Results: The Condensed version of iCBT was non-inferior at endpoint for depressive symptoms, anxiety symptoms, and quality of life compared to the Full-length version. There was a significant interaction effect between reading speed and treatment version. No significant differences between the treatment versions were found on measures of treatment engagement or knowledge acquisition.

Conclusion: A condensed version of iCBT for depression can be used with non-inferior results. A condensed treatment might be extra helpful for patients with lower reading speed. Given a high degree of missing data, these results need to be replicated.

Posters

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A transdiagnostic ecological momentary intervention for esports players

Angelica B. Ortiz de Gortari

Esports—organised competitive video game playing—is attracting large audiences with million dollar prizes. An esports career usually begins very early, around age 16, and often ends before age 25. Risk factors in esports include gaming/gambling addiction, sedentary behaviours, unconventional schedules (e.g. up to 12 hours of training per day), enhancement drugs, social pressure, pressure to perform, and harassment. Indeed, mental health is determined by a variety of factors, but as young people are exposed to more risks, they are more likely to develop mental disorders. Gaming disorder has recently been recognised as a mental disorder in the ICD-11. Mental health problems in esports include depression, anxiety, burnout, and sleep disorders. The most common stressors are related to competition and have been associated with depression, anxiety, and somatisation. In this context, the aim of this study is to develop a transdiagnostic ecological momentary intervention delivered via an app that will monitor the mental health of esports players, enable them to manage risks and stressors, and prevent the onset of mental health problems. The participants will be assigned to experimental or control conditions. Data collection will include: i) self-report assessments, ii) behavioural/physiological measures (e.g. sleep, daily steps, and heart rate), and iii) game

telemetry. The intervention targets include: i) cognitive/sensory intrusion and impulses with game content (i.e. Game Transfer Phenomena) and cognitive biases on gaming, ii) emotion regulation and stress, iii) dysfunctional patterns of behaviours, iv) lack of self-awareness and interoception, and v) conflict management and social skills. The intervention modules will be developed for and tested using an already existing app for esports. The proposed intervention is a response to the emerging need to understand and manage the risk factors associated with esports and to provide players with a tailored solution to monitor and improve their mental health.

Ψ

New ways of improving sexuality: A systematic review to analyze virtual reality interventions for sexual-related problems

Ariana Vila, Maria Sansoni, Giuseppe Riva

It is estimated that 40-45% of adults worldwide have had or will have a sexual problem. Psychological treatments are considered effective and yet untreated rates are high. Virtual reality (VR) might be a solution, as it could facilitate access to treatment for those who do not feel comfortable with traditional therapy. This systematic review aims to explore the current interventions for treating and targeting impaired sexuality through VR, and their efficacy. Specific iteration research strings that provide a comprehensive and broad overview of the literature were used. Data sources were collected independently in PubMed, PsycINFO, and Web of Science. From 8589 non-duplicate articles retrieved, only 6 were finally included in the review. They were all published within the previous 24 years and consisted of a psychological intervention conducted with adults (mean ages 18-75). Samples size differed significantly, going from 7 to 110, and they took place in 3 different countries (Canada, USA & Italy). 5 were characterized by a within-subjects design and 1 was described as RTC. They do not share a common thread, as they target different disorders or sexual variables: e.g., premature ejaculation, sexual anxiety, impotence. They do share the psychological orientation they follow to deliver the treatment, this being CBT and psychoanalytic. Every intervention showed effectiveness, which shows that VR may be an optimal delivering modality for psychological interventions. However, no information is given on the statistical analysis of the results obtained, strange variables, complicating factors, or barriers to care. Much research remains to be done in the field of VR interventions and sexuality: investigations with larger samples and control groups; that consider therapy factors which may be moderating the therapeutic success; that compare different kind of interventions (e.g., educational vs CBT) or different treatment delivery modalities (e.g., VR vs app-based interventions).

Ψ

Implementation of e-mental health interventions for informal caregivers: A systematic review of what we know and where to go next

Chelsea Coumoundouros, Erika Mårtensson, Giulia Ferraris, Justine Margaux Zuidberg, Louise von Essen, Robert Sanderman, Joanne Woodford

Introduction: E-mental health interventions have the potential to provide accessible mental health support to informal caregivers who commonly experience mental health problems. However, e-mental health interventions for informal caregivers are frequently not implemented.

Methods: A mixed-methods systematic review was undertaken to explore what factors impact the implementation of e-mental health interventions for informal caregivers. Within the review, a thematic synthesis utilizing primarily deductive coding based on the Consolidated Framework for Implementation Research was used to identify implementation barriers and facilitators.

Results: The thematic synthesis included 44 reports resulting in identification of 152 barriers and facilitators. Barriers and facilitators were commonly related to the intervention and individual characteristic domains of the framework, including barriers such as lack of diversity in informal care scenarios included in the intervention and lack of support, and facilitators such as user-friendly design and providing benefits to informal caregivers (e.g. improved wellbeing). Barriers and facilitators related to the outer and inner setting, and the implementation process were less commonly explored but included lack of resources as a barrier, and alignment between the intervention and organizational goals as a facilitator.

Conclusions: Implementation barriers and facilitators identified in this review can be used to inform future intervention development and implementation strategy development and planning. Future research should focus on exploring the perspectives of professionals who may be involved in implementation of e-mental health interventions for informal caregivers to improve our understanding of factors that influence e-mental health implementation within implementing organisations.

Ψ

Online psychological intervention for diabetes distress in patients with type-1 diabetes

Christina Maar Andersen, Johan Rasmussen, Julie Drotner Mouritsen, Kim Mathiasen, Frans Pouwer, Mette Juel Rothmann

Aim: Purpose of the current study is to develop and test an online psychological intervention for patients (>30 years of age) with type-1 diabetes and diabetes distress in a feasibility study.

Design: The project consists of four phases inspired by Participatory Design:

1. Examination of patients' needs and challenges through interviews with diabetes psychologists and a scoping review of online interventions for diabetes distress.
2. Development of modules for the online psychological intervention with input from patients, healthcare professionals and researchers in a number of workshops.
3. A feasibility study set up as a mini RCT with 20 patients in the intervention arm and 20 patients in a standard treatment (individual therapy) arm.
4. A Model of Assessment of Telemedicine evaluation.

After the four phases a full-scale RCT will be carried out.

Planned Analysis: In phase 1 and 2 interviews with psychologists and patients will be analysed using thematic analysis. In the feasibility study data will be collected via individual interviews from patients and healthcare professionals involved in the study about their experiences with the intervention and patients' reasons for dropout. These will be analysed via thematic analysis. Data about screening procedures and recruitment strategies will be obtained through observation and feedback from patients and healthcare professionals. Relevance of primary and secondary outcomes, individual improvements will be analysed using paired t-test paired with qualitative data from the patients. Metadata of platform use during the intervention will be analysed and presented as descriptive analyses.

Expected outcomes: We expect to gain knowledge of how best to recruit and screen patients for the intervention, how patients and healthcare professionals experience the intervention, why some patients drop out, relevant outcome measures, and platform use (i.e. metadata).

Ψ

Improving emotional prediction in online interventions: A machine learning prospective

Elena Sajno, Alessio Rossi, Luca Pappalardo, Giuseppe Riva

Online and technology-mediated interventions are becoming increasingly common in healthcare, but they lack objective physical feedback from the patients. It can be challenging to know their emotional state, which can affect the effectiveness of the intervention. To address this challenge, we propose a Machine Learning (ML) approach that incorporates physiological data, specifically Electrocardiogram (ECG), to better understand emotional states.

Current models for affective computing, which use ML for elaborating physiological data, often have poor performance when applied to new subjects due to wide intrasubject differences in heart rate patterns and responses to emotionally-labeled tasks. To overcome this difficulty, we propose a prospective model that adds a baseline clusterization, before performing the standard classification. This framework of data analytics permits splitting people in accordance with their ECG baseline status by similarity, and fitting classification models into different data clusters to improve the emotional prediction ability.

First, data from open-source databases will be used to perform the cluster analysis and to train the multiple classification algorithms. After that, a new data collection will be performed, and each recording will be divided by

the designed cluster, and its data submitted to the specific classification algorithm. This will help to overcome the effect of different heart rate patterns and the influence of the order of trials.

We hypothesize that this method will improve the performance prediction of emotive states, creating a more accurate and trustworthy model which can add valuable information to online and remote interventions. The use of ECG as a medium for collecting physiological data is also non-invasive and comfortable for the patient. By incorporating this approach, online and technology-mediated interventions can be tailored to better meet the patient's needs, improving their overall effectiveness and satisfaction.

Ψ

Virtual reality and savoring to promote the well-being of patients with long COVID

Alessia Fumagalli, Sveva Maggiolini, Clementina Misuraca, Luca Bernardelli, Daniela Villani

Introduction: Long COVID (also known as post-COVID syndrome) is affecting at least 17 million people worldwide. It can have several physical symptoms (including dyspnea, cough, fatigue, chest pain, etc.) and psychological and cognitive symptoms (e.g., anxiety, stress, brain fog, concentration problems, memory difficulties, etc.). The number and severity of long COVID symptoms therefore make it necessary to implement interventions to promote well-being in the population affected by this pathology. Working on the promotion of relaxation and positive emotions represents an important opportunity, and several studies have shown the effectiveness of virtual reality (VR) in promoting them. In this regard, a protocol that includes virtual reality enhanced with savoring, that is the ability to elicit and amplify positive emotions, can be a viable strategy for fostering well-being in patients with long COVID.

Methods: The proposed protocol has been approved by the Ethics Committee of the IRCCS INRCA Casatenovo. Specifically, it lasts for two weeks and consists of four 20-minute sessions. Participants watch a relaxing virtual scenario with a narrative voice that lasts for 10 minutes during each session. After the virtual scenarios, participants are instructed to savor the present moment and positive memories to consolidate and amplify the positive emotions evoked by VR. Thus, savoring may enhance the benefits of VR and help people make a link to their positive experiences.

Results: The protocol and a series of single cases will be presented at the conference.

Conclusions: Given the high number of people with long COVID worldwide and the negative impact that persistent symptoms can have on their daily lives, testing innovative protocols aimed at sustaining well-being represents a critical goal to achieve.

Ψ

Early access to blended psychological treatment for paediatric functional abdominal pain: Preliminary results of a mixed methods study

Emma Ramsay Milford, Sandra Buratti, Ewa-Lena Bratt, Natoshia Cunningham, Åsa Nilnes, & Sandra Weineland

Paediatric functional abdominal pain disorder (FAPD) is common in school-aged children impacting at least 10% of all youth globally (King et al, 2011). FAPD is associated with psychological comorbidities such as anxiety and depression, poor school attendance, parental work absence, and poor quality of life (Saps et al., 2009). High rates of clinically significant co-morbid anxiety is common amongst those afflicted as well as a risk of adverse pain related outcomes both concurrently and over time (Cunningham et al, 2014; 2016). Psychological interventions such as cognitive behaviour therapy (CBT) can be effective in increasing ability to participate in daily activities and alleviate symptoms of pain and anxiety (Cunningham et al; 2020, Lalouni et al 2019).

Previous research has indicated both effective treatment results and cost effectiveness in using internet-delivered psychological approaches (Bonnert et al 2017; Bonnert et al 2019; Lalouni et al., 2017; Lalouni et al., 2019). The Aim to Decrease Anxiety and Pain Treatment (ADAPT) is a cognitive behavioural treatment programme tailored to children with FAPD and anxiety (Cunningham et al 2018; 2020). It is a brief programme consisting of two clinic-based sessions and four self-paced web-sessions (blended), developed from evidence-based CBT protocols for the

management of paediatric pain (Kashikar-Zuck et al, 2012) and childhood anxiety disorders (Lyneham et al, 2003). Youth with FAPD typically present to primary care, however most treatments are accessed via specialist, tertiary, services. A Swedish version of ADAPT has been developed with the aim to provide psychological treatment within a paediatric community-based setting, enabling access to treatment, following initial assessment and early diagnosis.

This study aims to explore treatment feasibility in terms of patient eligibility, programme adherence and programme accessibility, preliminary treatment effect on pain and anxiety related outcomes, attitudes and experiences amongst participating children, such as perceived usefulness and perceived outcomes.

Methods: A convergent Mixed Methods Design is utilised in order to obtain complementary data with quantitative pre and post measures of pain, functional disability and anxiety and qualitative data assessed through semi-structured child interviews analysed utilising a thematic approach.

Results: The study is ongoing with planned completion in June 2023. Preliminary results from the qualitative analysis will be presented.

The authors have no conflicts of interest to declare

Ψ

Design and development of an immersive Virtual Reality application to promote empathic communication between cancer survivors and their partners

Maria Sansoni, Henar Guillen-Sanz, Ariana Vila Gonzalez, Federica Strocchia, Giuseppe Riva

Getting into someone else's shoes can be a very difficult task, especially when dealing with a complicated personal situation. Although the percentage of cancer survivors is increasing, the psychological process they undergo remains quite stressful. Cancer patients often feel misunderstood and seek support from their partner throughout the medical process. However, complications following oncological treatment may have a negative impact on a couple's relationship. The aim of this study is to design and develop an immersive Virtual Reality (iVR) application that enable users to put themselves in the shoes of a cancer patient. iVR has a great effect on the user's emotions and empathy as it allows the user to live the situation in the first person. For these reasons, an iVR application has been created which superficially reflects the process of a cancer patient. The user experiences several scenarios in first person: a call from the doctor with bad news, the endless waiting in the hospital corridors to confirm the diagnosis of cancer, the first consultation with the doctor where the chemo and its adverse effects are discussed, the feeling of anguish during and after surgery, and the secondary effects of the process. During this process, the user listens to the patient's thoughts so that the feeling of empathy is greater. This application can help the partners of oncological patients to better understand their feelings and improve communication between them, since the application is customisable to suit each patient's personal situation. In the near future, a first validation is planned to understand the effect of this experience on user moods and empathy. Furthermore, this application will be part of a therapy to improve communication between cancer patients or survivors and their partners.

Ψ

Mind-Body: A RCT protocol for anorexia nervosa exploiting virtual reality mindfulness

Giulia Brizzi, Maria Sansoni, Giuseppe Riva

Introduction. Mindfulness is increasingly introduced in the mental care field. It includes techniques such as guided meditation, mindful movements, and body scanning, aiming at helping subjects to accept themselves and reconnect with their bodies. The use of mindfulness in psychotherapy seems to enhance therapeutical outcomes in pathologies such as depression and anxiety. The technological advance (i.e., Virtual Reality; VR) made these practices easier and more engaging. Mindfulness has received little attention in Anorexia Nervosa (AN); AN is associated with depressive symptoms, and patients reliably exhibit alienation from their bodies, difficulties in detecting the body's activation and emotions, or responding properly to body needs (e.g., hunger). We contend that mindfulness techniques may be beneficial in AN treatment. Thus, we propose a randomized controlled trial to see whether the introduction of VR-based mindfulness sessions enhances standard therapies' effectiveness in AN.

Methods. According to the power analysis, we will include 278 AN patients, in collaboration with hospitals and psychotherapists. They will be randomly divided into a control group (CG) and an intervention group (EG). The EG will be proposed with VR mindfulness sessions after standard therapeutical sessions for three months by using Trip, a free mindfulness VR app. We will assess clinical symptoms through the Eating Disorder Inventory – III (EDI-III) before and after the intervention (pre and post-comparison) within and between groups thanks to a Mixed Anova.

Results. We hypothesize no differences at the baseline between groups, with a greater reduction in the symptomatology in the EG in the post-assessment. We expect a significant difference in EDI-III scores within EG between the pre and post-assessments, and no significant differences in the CG.

Conclusions. We suggest mindfulness practice will be beneficial for AN patients to promote a reconnection with their bodies in terms of acceptance and sensitivity to body sensations, as well as to reduce depressive symptoms. This might positively impact the recovery journey. The enhancement of therapeutical approaches is needed in pathologies particularly difficult to treat such as AN to reach clinically relevant improvements. We argue that technology opportunities might be extremely useful in this context.

Ψ

REGULEM: A user-centered smartphone app based on the therapeutic principles of the unified protocol for the treatment of emotional disorders

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Introduction: The use of technology in the application of psychological treatments allows for overcoming some limitations of face-to-face treatments, such as facilitating access to evidence-based treatments to people who have limitations to travel, places where there is no access to psychological treatments or reducing waiting lists. The Unified Protocol (UP) is a transdiagnostic treatment specially developed to address emotional disorders, which are currently the most prevalent. Its versatility allows its adaptation to different application formats such as group or online. The aim of this study is to describe the characteristics of REGULEM, a smartphone app based on the therapeutic principles of UP and a web platform linked to this app.

Method: The design and development of REGULEM was an iterative process based on user-centered design and carried out in collaboration with patients and professionals familiar with UP, UP experts and software developers.

Results: The following features and components of REGULEM app will be presented and described in depth during the congress: 8 module content based on UP principles, multimedia-based content, conversation-like exercises, true/false questions for knowledge self-assessment, customizable weekly emotional assessment, guided in-vivo/imagination exposure, gamification, in-app help (videos, written guides and solved examples of exercises by other patients), exercises to continue practicing after treatment, emergency call through a panic button. The REGULEM web platform will also be described, through which clinicians can access information about each patient (e.g. app usage data, weekly emotional evaluation, exercises performed and information recorded in each of them).

Conclusion: We expect that REGULEM's user-centered design will help make it an effective tool for addressing emotional disorders as well as will be accepted by patients and professionals.

Ψ

Effects of patient-driven iCBT for anxiety in routine primary care and the relation between increased experience of empowerment and outcome: A randomized controlled trial

Linnea Nissling, Martin Kraepelien, Viktor Kaldö, Dominique Hange, Anna Larsson, Marie Persson, Sara Weinfeld

Background: The World Health Organization has declared that primary care should be organized to empower individuals, families, and communities to optimize health. Internet cognitive behavioral therapy (iCBT) tailored by

psychologists' initial assessments to meet patients' specific needs have shown promising effects. However, few studies have evaluated patient involvement in decisions during iCBT.

Aim: This study aimed to explore the effect of patient-driven iCBT compared to standard iCBT on perceived control over treatment, adherence, and level of anxiety symptoms. A secondary aim was to assess the relationship between changes in empowerment and changes in anxiety symptoms.

Method: Participants were patients recruited from primary care and assessed as meeting the criterion for an anxiety disorder. Participants were randomized to patient-driven iCBT ($n = 27$) or standard iCBT ($n = 28$). Patient-driven iCBT was adapted to participants' preferences regarding for example focus of treatment program and order of modules. Participants randomized to the control condition received the standard iCBT program for anxiety disorders at the participating unit. The outcome measures were patients' perceived control over treatment, adherence to treatment, symptoms of anxiety, depression and general disability as well as the experience of empowerment.

Results: Participants in patient-driven iCBT had statistically higher perceived control over treatment ($t(43) = 2.13$, $p = .04$). Symptoms were significantly reduced in both arms with regards to anxiety, depression, and general disability. A significant time per condition interaction effect for anxiety symptoms was observed ($df = 45.0$; $F = 3.055$; $p = .038$), where the patient-driven condition had a significantly larger reduction in anxiety. For both groups a significant correlation of $r = -0.47$ was found between changes in empowerment and changes in anxiety.

Conclusion: Results indicate that iCBT that is patient-driven, may have a greater effect on anxiety, than standard iCBT. The effect on perceived control over treatment might also be larger in patient-driven treatments than in standard iCBT. Internet-based therapies inherently promote as active agents of their own care and might be well suited for promoting perceived control and empowerment. Findings need to be replicated given the small sample size and the explorative nature of the study.

Ψ

The influence of male selfies on female participants' body image: The role of beauty filters

Maria Sansoni, Marta Radosevic, Magdalena Chorzępa, Chinazaeckpere Maureen Sam-Okomgboeso, Pearl Young, Simona Cioceanu, Ksenija Edelinski, Giuseppe Riva

Introduction: Beauty filters can have a detrimental impact on well-being by creating unrealistic beauty standards that are difficult to achieve and maintain, leading to feelings of inadequacy and low self-esteem. Previous findings of our team have confirmed the impact of beauty filters on women's body image when the filters were applied to female photos. Nonetheless, there is limited knowledge regarding the effect of this phenomenon when male photos are the subjects of such filters.

Methods: 14 women participated in this second pilot study. The study used a within-subject design to investigate the impact of exposure to men's photos with and without Instagram beauty filters. Psychological well-being was assessed at baseline, after the beauty filter condition, and after the non-beauty filter condition using self-reported questionnaires to measure body image, identity, self-discrepancy, self-comparison to other women, and willingness for cosmetic surgery. Mixed Effect model analysis was performed to analyze participants' psychological well-being over the experimental conditions.

Results: Contrary to our previous work involving female photos, the current results show no differences in terms of willingness to receive surgery, self-comparison, social and personal identity, body satisfaction, and self-discrepancy in the filter condition compared to the baseline and the non-filter condition.

Conclusions: The data collection for this study is still ongoing: it is our goal not only to increase the sample size of this pilot study, but also, in the near future, to replicate the same experimental design using participants' own selfies. The results obtained from this comparison of female, male, and participants' own photos have the potential to provide a valuable foundation for further exploring the impact of edited photos on individuals' well-being. This research could also contribute to the creation of an online intervention aimed at mitigating the negative effects of Instagram filters on users' well-being.

Ψ

Tailored Internet-delivered cognitive behavioral therapy for individuals experiencing psychological distress associated with climate change: A randomized controlled trial

Nike Lindhe, Bengtsson, A., Byggeth, E., Engström, J., Lundin, M., Matilda Berg, Victoria Aminoff, Mikael Ludvigsson, Gerhard Andersson

Introduction: A growing body of research has investigated how climate change can have a negative impact on individuals who are not directly exposed to its consequences. Although results from several large surveys conducted globally indicate that psychological distress associated with climate change is widespread, there is a lack of empirical research concerning the development and evaluation of effective interventions. Since internet-delivered cognitive behavioral therapy (ICBT) has been found to be effective in treating a variety of psychological problems, ICBT could possibly also be used to reduce psychological symptoms associated with climate change. The aim of this pilot study was to develop and test the effects of ICBT for psychological problems associated with climate change.

Methods: Following advertisement we included 60 participants who experienced psychological symptoms associated with climate change. They were randomly allocated to either an experimental group ($n = 30$) or a control group ($n = 30$). The experimental group received eight weeks of therapist-guided ICBT, while participants in the control group were put on a waiting list. Self-report measures were administered pre- and post-treatment/waiting list, including measures of depressive symptoms, anxiety, stress, pro-environmental behavior, alcohol use, insomnia, quality of life and climate change-related distress.

Results: Moderate to large between-group effects ($d = 0.76-0.87$) were found in favor of the treatment group on depressive symptoms, stress, quality of life and climate change-related distress. No effects were observed on measures of pro-environmental behavior.

Conclusions: The results from this pilot study are promising, and they indicate that tailored ICBT can be an effective way to reduce psychological symptoms associated with climate change.

Ψ

Just-in-time adaptive interventions: Acceptance and efficacy of the chatbot SISU for increasing psychological well-being

Patricia Garatva, Eileen Bendig, Florian Onur Kuhlmeier, Dominik Meissner, Benjamin Erb, Harald Baumeister

Background: By using chatbots, patients could receive customized treatment support just-in-time, based on their individual needs. This study evaluates the acceptability and efficacy of a chat-based intervention compared to a waitlist control-group (WLG).

Method: In a randomised-controlled trial, $N=120$ adults with low psychological well-being ($WHO-5 \leq 52$) are recruited. The chat-based, three-days-brief intervention consists of three modules and combines therapeutic writing techniques with Acceptance- and Commitment-Therapy strategies. Measurement times are before (t_1), during (t_2), and after (t_3) interaction with the chatbot, and four weeks after randomisation (t_4). Primary outcome is psychological well-being at t_3 ($WHO-5$). Secondary outcomes include emotional well-being, psychological flexibility, quality of life, satisfaction with the intervention and side effects. Missing values are replaced by predictive-mean-matching. Data analysis comprises linear mixed models and follows intention-to-treat principles.

Results: Randomised are $n=60$ participants per group (IG, WLG). Satisfaction with the intervention is $M=21$ (CSQ-8; scale range from 8 to 32; $M=21.03$, $SD=3.60$), adherence is 71%, a total of $N=18$ participants drop out due to technical problems. There is no significant effect of time-group interaction on psychological well-being ($WHO-5$) ($\beta=1.53$, 95%CI[-2.37,5.44], $p=0.44$). Effects on secondary outcomes were not significant (emotional well-being: $\beta=1.58$, 95%CI[-0.26,3.42], $p=0.09$; others all $p>0.05$).

Discussion: Participants accept the chat-based application SISU as a mode of delivery to increase psychological well-being. Efficacy in the present form cannot be assumed. Improvements in the underlying technology, algorithmic accuracy, as well as privacy and data security are needed to create highly just-in-time adaptive interventions. Moreover, the challenge remains to create appropriate infrastructure to implement these digital interventions in clinical practice (i.e., Blended Care).

Ψ

Evaluating the value of Explainability in an AI-based CDSS

Pontus Bjurner

Introduction

In the area of Clinical Decision Support Systems (CDSS) for psychological treatments based on artificial intelligence (AI) and machine learning (ML), these CDSS are showing promise as an accurate strategy for predicting outcomes (Chekroud et al., 2021; Kaldo et al., 2021). We have seen that ML-based predictions can provide both an accurate point score as well as categorical information. In a training data set, composed of more than 6000 historical patients at the Internet Psychiatry Clinic receiving ICBT for major depression, panic disorder or social anxiety disorder, was used to build a wide range of prediction models from eight different machine learning methods (e.g. k-Nearest Neighbor, random forest, and multilayer perceptrons) (Kaldo et al., 2021). These models were used to predict treatment success, defined as either a 50% reduction (responder) or under clinical cut-off (remitter) for each primary symptom outcome. The Balanced Accuracy for these models, from treatment week four and onward, were significantly better than chance and reached above a preliminary benchmark for clinical useful balanced accuracy (67%) when used within an ATS, estimated from a proof-of-concept study of ICBT (Forsell et al, 2019).

However, even though accuracy levels might be good enough, Ozaydin et al. describe (Ozaydin, Hardin, & Chhieng) that a number of studies have shown that CDSS based on ML might be more accurate than the average clinician in diagnosing, and still physicians are hesitant to use these CDSS because the analysis behind them is not clear. One area of research that is trying to address this issue is so called explainable artificial intelligence (XAI) or interpretable Machine Learning, (Kennedy, Reimer, & Dehghani, 2021). Yang and colleagues (Yang, 2022) present a method that can be used to create XAI by employing a set of questions between the user and the system. Another method which aims to make ML predictions more transparent are so called SHapley Additive exPlanations (SHAP) values, which indicate how much a certain predictive factor (feature) contributed to the prediction, thus showing how a ML model makes a decision for a specific patient (Lundberg & Lee, 2017). The usefulness of implementing XAI methods in CDSS or ATS, or how the clinicians interpret and use the more transparent predictions and feedback, have not been tested in clinical settings, so there is a need for further implementation and investigation.

Methods

This study is currently in the planning phase. The preliminary plan is to evaluate how complementing the current CDSS's prediction of a patient's final outcome with individual SHAP-values affects the therapist's experience of the CDSS and the clinical decisions they make, and possibly also how it affects patients' therapy-related behaviors and outcomes. SHapley Additive exPlanations (SHAP) values are a method to make machine learning (ML) predictions more transparent, by indicating how much a certain predictive factor (feature) contributed to the prediction, thus showing how a ML model makes a decision for a specific patient.

Primarily we want to explore if the therapists want to, and can, transform the extra information the SHAP-values provide into more specific, well balanced and useful personalized clinical decisions for a patient. The contribution of this project is the investigation of the potential benefits (for example perceiving the CDSS as more informative and useful and making more specific and actionable clinical decisions) and risks (for example following the CDSS too uncritical or interpreting SHAP-values in causal terms) of making the machine learning predictions more transparent.

Results

Data collection and analyses have not been planned in detail. Main focus will be on how the added SHAP-values seems to affect the therapist's perceptions, interpretations, and decisions. Due to limited time and resources, the most likely design will be a mixed methods study where patients having finished their treatments in the ongoing RCT will be used as cases, presented to new therapists. These patient's situation at some time point during their ICBT-treatment will be presented together with their CDSS-status from the same time point, either with or without SHAP-values. The therapists will then describe (qualitatively through open questions and quantitatively through standardized questions) how they perceive and explain the patient's situation and need for adjustments, how they interpret the CDSS-information and how much they believe the predictions, and what their immediate actions for

that patient will be. A balanced randomized design will be used to show a group of patients either with or without SHAP-values to therapists, to be able to explore how those affect therapist's perception, interpretations and actions. The therapists' suggested actions will also be compared to the RCT-therapists' actual clinical actions at the time-point in question.

Conclusions

A paper comprising the main results will be written after the completion of the study during late 2023 or early 2024.

Ψ

A machine learning to improve the emotion regulation: A potential tool for online clinical and educational applications

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Emotional regulation is the process of monitoring, evaluating, and modifying one's emotional reactions to achieve goals, both extrinsically and intrinsically. Building upon this definition, several authors have proposed a set of nine emotional regulation skills, including emotion recognition.

Several trainings are available to improve emotional regulation skills (e.g., mindfulness-based stress interventions). While these methods are effective in enhancing emotional regulation, they also have limitations, such as a lack of personalization which would account for individual's characteristics and needs.

To overcome these limitations, our aim is to use machine learning (ML) to improve emotion recognition. The goal is to create an ML algorithm that can classify five basic emotions based on three physiological parameters (i.e., ECG, SCR, and breathing) collected during an emotional elicitation task. This data will be used to train the ML algorithm and develop a tool that can identify a specific emotion from physiological parameters in real time, as well as a Python instrument to display the identified emotion as a label on a computer screen.

The ML algorithm and emotional label will be used in a study where participants will interact with a psychologist for 30 minutes while collecting physiological parameters. Every five minutes, the psychologist will ask the participant to identify their current emotion, and the corresponding emotional label will be displayed on the psychologist's computer screen. After the participant's answer, the psychologist will show the emotional label on their display to allow them to check the answer.

The study will last three weeks, with two sessions per week. Emotional regulation skills will be assessed using scales or questionnaires at baseline and at the end of the emotional recognition training, to evaluate the ability to recognize emotions and the potential of this personalized approach to improving emotional regulation. If the intervention will prove its effectiveness, the next step will be to employ this intervention to increase emotional recognition while using videoconferencing tools (e.g., Zoom, Skype) for clinical (e.g., online psychotherapy) and educational (e.g., increasing emotional ability in healthcare professionals) purposes.

Ψ

PostCoronaCope: A randomized controlled trial

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Introduction: After approximately two years, the COVID-19 pandemic was in Sweden decided to not be considered as public dangerous anymore. Psychological impact during the pandemic has been reported but these imprints does not necessarily disappear only because the former described decision was made. Since the COVID-19 pandemic with greatest possibility will not be the last pandemic, it is essential to examine the psychological symptoms related to the pandemic and whether they can be addressed somehow. During a pandemic, internet-based cognitive behavioral therapy (ICBT) is advantageous not least because of the no need for a physical meeting between the patient and the (eventual) therapist. Two studies were implemented during the COVID-19 pandemic with the aim to investigate the effect of ICBT on psychological symptoms related to the pandemic. Effects on symptoms of depression, anxiety and

stress was shown. Within this study, ICBT are examined during another phase of the pandemic, when the associated illness is not considered as public dangerous.

Method: In the spring 2023, we recruit participants who experience persisting or arising psychological symptoms related to the COVID-19 pandemic even when it is not considered as public dangerous anymore. After inclusion and exclusion, participants are randomized to either treatment group or control group, which is a wait-list control condition. The treatment group gets eight weeks of ICBT, involving eight individually tailored selected modules with weekly guidance by a therapist through messages. Evaluation of the treatment will be based on participants estimates on the primary measures aimed to measure symptoms of depression and anxiety. Also, secondary measures will be used, such as measures of stress symptoms and loneliness.

Results and Conclusion: PostCoronaCope is a continuation on the CoronaCope-project, consisting of the two studies described above together with a qualitative study about how it is experienced to undergo ICBT for psychological symptoms related to the pandemic. Initial results from this randomized controlled trial will be presented.