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Computerized text and voice analysis - a single case study of seven chronically schizophrenic patients in art therapy

Submission date
09/01/2022

Recruitment status
No longer recruiting

Registration date
12/01/2022

Overall study status
Completed

Last Edited
13/02/2024

Condition category
Mental and Behavioural Disorders

[_] Prospectively registered
[_] Protocol
[_] Statistical analysis plan
[X] Results
[_] Individual participant data

Plain English summary of protocol

Background and study aims
Schizophrenia is a severe long-term mental health condition. It causes a range of different psychological symptoms. The person may not always be able to distinguish their own thoughts and ideas from reality.
The present exploratory study of patients suffering from a chronic course of schizophrenia aims to clarify whether group art therapy followed by therapist-guided discussion of their paintings can influence patients' communication behavior and individual emotional spectrum (definition of primary endpoints).
Potential indicators or surrogates for communication behavior and individual spectrum of predominant emotions should be found in features of voice and speech. For this purpose, two validated scientific automated analysis procedures are used, which are expected to provide an objective quantitative assessment of such characteristics. Seven patients with chronic schizophrenia in a non-clinical inpatient institution for the mentally ill with permanent indigence are recruited.

Who can participate?
Patients aged 18 years or above suffering from Paranoid schizophrenia for at least ten years, who show a preference for art therapy

What does the study involve?
The sample engaged in pictorial activity as part of their weekly group art therapy. In a one-on-one interview after three or four days, study participants were invited to talk with the author about the paintings they had created.

What are the possible benefits and risks of participating?
The selection process for this six-month group art therapy and the digital recording of the interviews for subsequent scientific analysis are the only features that could be perceived as invasive or alienating from the patients' perspective. Thus, for patients with paranoid experiences, the digital recording of the interviews with a table microphone may indeed be considered a psychological burden.

Where is the study run from?
AWO Social Psychiatric Institution Marienheim Peiting (Germany)

When is the study starting and how long is it expected to run for?
December 2015 to October 2016

Who is funding the study?
Investigator initiated and funded

Who is the main contact?
Mrs Yvonne Sprotte, sprotteyvonne@gmail.com

Contact information

Type(s)
Principal investigator

Contact name
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Additional identifiers

Study information

Scientific Title
Computerized automated text and voice analysis to detect therapeutic change in art therapy - a single case analysis on seven patients with chronic schizophrenia

Acronym
livopict-study

Study objectives
The therapist-guided, standardized interview about their own pictures creates the protected setting in which it is possible for these patients to express themselves not only about their pictures but also about themselves. During 25 weekly art therapies and subsequent interviews, changes in communication behavior are thus expected, which are reflected in the paraverbal signals of speech and voice.

Ethics approval required
Old ethics approval format

Ethics approval(s)
Due to the lack of invasiveness of the study approach, the study supervisory team did not initially consider an ethics vote to be necessary.
Thus, a subsequent vote in the sense of ethical clearance was granted on 11/05/2017 by the chairman of the ethics committee of the University of Augsburg (Prof. Dr. Ulrich M. Gassner, Mag. rer. publ. M. Jur. (Oxon.) Faculty of Law, P.O. Box 86135 Augsburg, Germany; + 49 (0) 821 598 4600; ulrich.gassner@jura.uni-augsburg.de

Primary study design
Interventional

Study design
Interventional non-randomized

Study type(s)
Treatment

Health condition(s) or problem(s) studied
Paranoid schizophrenia (F 20.0), Schizophrenic residual (F20.5)

Interventions
This is an explorative monocentric art therapy study in the form of a quantitative single-case study (n-of-one-trial without baseline) in seven patients with chronic schizophrenia. The interventions consist of therapist-guided interviews with patients about their images, which are digitally recorded and analyzed using both text and voice analysis software.
This dual study approach of digitized interviews allows correlations between the two portions of the recorded voice samples and forms the internal control in the study approach.

The sample of seven patients with chronic schizophrenia (n=7), defined under inclusion and exclusion criteria, engaged in pictorial activity as part of their weekly group art therapy (non-invasive portion of the studies intervention: image creation, IC). In a one-on-one interview after three or four days, study participants were invited to talk with the author about the paintings they had created. An interview developed especially for the study served as a guide and, above all, as a standardized stimulus for the patients' statements (therapist-guided picture discussion, TGPD).

Intervention Type
Behavioural

Primary outcome(s)
The verbal (linguistic) and paraverbal (affective) portions of the communication behavior will be preserved in the digital audio documents of the interviews on a weekly basis and at up to 19 measurement time points over the study period of 25 weeks. They are extracted and analyzed using the text analysis software LIWC2015 (Linguistic Inquiry and Word Count 2015) and the voice analysis software VocEmoApI (Vocal Emotion Recognition by Appraisal Inference).

Key secondary outcome(s)
There are no secondary outcome measures

Completion date
29/10/2016

Eligibility

Key inclusion criteria
1. Minimum age of 18 years
2. Paranoid schizophrenia (F20.0) with chronic course of at least ten years or/and
3. Schizophrenic residual (F20.5)
4. Stable medication of psychotic symptoms for at least three months
5. A preference for artistic therapies (art therapy)
6. The presence of written informed consent

Participant type(s)
Patient

Healthy volunteers allowed
No

Age group
Adult

Lower age limit
18 Years

Sex
All

Total final enrolment
15

Key exclusion criteria
1. Primary addictive disorder
2. Acute accessory symptoms
3. Suicidality
4. Intelligence impairment
5. Brain organic disorder
6. Autistic disorder
7. Personality disorder
8. Visual impairment
9. Language barrier
10. Hemiparesis including speech disorder
11. Moving out soon
12. Participation in another creative therapy (in group or/and individual therapy)

Date of first enrolment
12/02/2016

Date of final enrolment

08/04/2016

Locations

Countries of recruitment
Germany

Study participating centre
Marienheim - house for mentally ill people
Bahnhofstrasse 15
Peiting
Germany
D-86971

Sponsor information

Organisation
University of Augsburg

ROR
https://ror.org/03p14d497

Organisation
Marienheim

Funder(s)

Funder type
Other

Funder Name
Investigator initiated and funded

Results and Publications

Individual participant data (IPD) sharing plan

The data sets generated and analyzed as part of the current study are available upon request from Yvonne Sprotte, sprotteyvonne@gmail.com.
Documentation in zenodo.org is in progress.

IPD sharing plan summary

Stored in publicly available repository, Available on request

Study outputs

Output type	Details	Date created	Date added	Peer reviewed?	Patient-facing?
Results article		01/03/2022	02/03/2022	Yes	No
Results article		25/09/2023	13/02/2024	Yes	No
Participant information sheet			12/01/2022	No	Yes