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Analyzing the Effectiveness of Treatment Models, with a Focus on Social and Emotional Competency, on the Criminally Insane Forensic Population Within a Forensic Therapeutic Center

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ABSTRACT: The present study aims to fill in gaps in research on mentally ill offenders (MIOs) by analyzing the effectiveness of psychological treatment offered in forensic populations. Research has shown that approximately 95% of schizophrenic patients still do not receive appropriate amounts of evidence-based services, which may explain the gap in rates of recovery related to this disorder. We aim to compare the social and emotional competency of patients from Pro Mente Plus before and after receiving treatment. We hypothesize that post treatment scores should show an improvement in emotional and social competencies and results indicate small to medium effect sizes in favor of our expected results. Findings show a positive change in social skills and illness awareness, suggesting the potential of forensic therapeutic centers in facilitating better outcomes for this demographic. Alongside cognitive remediation programs, social skills programs are more likely to succeed, especially when part of integrative therapeutic programs that incorporate both pharmacological and psychosocial elements.

KEYWORDS: schizophrenia, mentally ill offenders, psychological treatment, forensic psychology, recidivism, psychoeducation, social skills, emotional skills

Introduction

Schizophrenia is characterized by abnormalities in the following 5 domains: delusions, hallucinations, disorganized thinking (speech), abnormal motor behavior (including catatonia), and negative symptoms. While positive symptoms are manifested through delusions, hallucinations, and disorganized behavior and speech, the most prominent negative symptoms of schizophrenia are avolition, which is an inability to engage and persist in goal-oriented activities, and diminished emotional expression, which can be exemplified through the scarcity of emotion expressed in the face, through eye contact, tone of voice, and body language that would normally add emotional emphasis to speech. Aside from that, negative symptoms can also include alogia (poverty of speech), anhedonia (loss of ability to find pleasure in normal activities and relationships), and asociality (5th ed.; DSM–5; American Psychiatric Association 2013). This disorder is typically characterized by a loss of touch with reality, with deficits to cognition and emotions. Schizophrenia is a very complex and chronic disorder of the brain, thus making it hard for psychologists to narrow down one single feature of what it is, but rather a multifactorial disease that affects many different aspects of life (Rahmnan and Lauriello 2016).

This disorder is so complex and difficult to deal with, that there is not a great prognosis for recovery. How many actually reach recovery? According to previous studies, on average, only about 15% of patients afflicted with this disorder actually meet clinical and social criteria for "recovery" (Jääskeläinen et al. 2013; Lim et al. 2017). Because of its complex nature, it also requires a multifaceted and complex treatment approach. Several evidence-based therapies have been shown to be effective within this population, including CBT paired with skills training, CBT paired with family psychoeducation, supported employment (SE) and skills training, SE and cognitive remediation, and SE and CBT (Lecomte et al. 2014).

While Austria is certainly not the only country to offer such evidence-based, therapeutic programs for schizophrenia, it does have a therapeutic forensic center which is unique due to

its target population being mentally ill offenders (MIOs), a large amount of this population diagnosed with schizophrenia. That makes this forensic detention center unique, with very few similar ones around the world. The program at Pro Mente Plus GmbH aims to help MIOs by serving as a sort of halfway point, between the prison system and the outside world. This governmentally funded organization offers a variety of different services which focus on rehabilitation over punishment, reflecting a rather unconventional and progressive technique in approaching those that are criminally insane and unfit to stand trial. By engaging in this therapeutic detention program, the goal is to improve remission, reduce recidivism, and allow them to enter the world again as functional adults. The means of doing so is by focusing on rehabilitation, psychoeducation, social reintegration activities, medical treatment, economic and legal help, and much more to allow the individuals to have the best opportunities for reintegration back into society. This program lasts a total of 5 years, during which the clients are given time for rehabilitation, showing the necessity of the right amount of time and environment to foster improvement. By using an integrative and holistic approach to dealing with mental illness and misconduct, Pro Mente Plus aims to help their clients gain the necessary education about their illness, how to deal with it, and how to gain new skills to aid them in life outside of confinement. It was with their collaboration and data that this study came to fruition. This study was done as a Master's dissertation at Sigmund Freud University Vienna under the supervision of research mentors Nicolas Gyane, Armin Klaps, and Birgit Stetina.

Schizophrenia and history of treatment

A study conducted in Sweden analyzed data accumulated over the course of 7 years with a cohort of over 29,000 patients suffering from Schizophrenia found that clozapine and other long-acting antipsychotic injections were the treatments with the highest rates of prevention of relapse. This is in comparison with a variety of other drugs used, even when compared with other equivalent oral formulations of the drugs (Tiihonen et al. 2017). This method of pharmaceutical treatment of schizophrenia has been around for years, originating in the 1940's with the use of drugs such as insulin introduced right here in Vienna by Manfred Sakel, as well as other options such as prefrontal lobotomies and electroconvulsive therapy. In an article written by Sakel in 1938, he compares mental disorders to physical disorders, explaining that we should take mental disorders and their symptoms as a manifestation of the dysfunction of the organism as a whole. This encouraged professionals to dive deeper into looking at what the symptoms are telling us of the disorder, rather than taking them at face value (Sakel 1938).

This led to the experimentation and discovery of more than just pharmacological treatment options, psychoeducation and psychological treatment programs have been shown to be effective with this population as well. Since the introduction of psychoeducation into therapeutic programs, we have seen an improvement in treatment outcome for schizophrenic patients. Patients who had been previously hospitalized between 2-5 times showed the most improvement from receiving psychoeducation as part of their treatment, within a follow up period of two years. The rehospitalization rates were 34% for the treatment (with psychoeducation) group compared to 65% in the control group (Bauml et al. 2006). Roder and colleagues (2011) found that Integrated Psychological Therapy (IPT) shows efficacy as a rehabilitation approach for schizophrenic patients, with improvement evident in areas of neurocognition, social cognition, psychosocial functioning, and negative symptoms. IPT is a comprehensive model that includes neurocognitive and social cognitive approaches with a focus on social skills and problem-solving techniques. This comprehensive model includes psychoeducation of the disorder, Cognitive Behavioral Therapy, cognitive remediation, and social skills training, usually alongside pharmacological treatment as well. Roder and colleague's meta-analysis of 36 studies not only found IPT to be successful in overall improvement in the aforementioned categories, but they discovered that this approach was successful across a wide range of characteristics and treatment conditions as well.

Similar integrated care programs are implemented in countries like Germany and Switzerland. In 2010, the Integrated Care Initiative Schizophrenia was implemented to include a variety of health care systems and workers offering integrated care, including psychoeducation, sociotherapy, and family visits. By the time the initiative ended in 2012, the insurance fund decided to continue funding the program and adopt it into regular care settings (Mayer-Amberg et al. 2016). Integrated approaches that combine both pharmacotherapy, along with psychoeducation, social skills, cognitive remediation, and psychosocial therapy have been shown to have good rates of efficacy in treating schizophrenia, with many other programs and studies demonstrating this (Mueller et al. 2013; Müller et al. 2007; Morin and Franck 2017, Vita and Barlati 2018). Studies such as these indicate that cognitive function may be the key to improving response to behavioral treatments, seeing as there is an observed link between neurocognition and integrated programs that utilize psychosocial rehabilitation methods (Kurtz 2011).

Recidivism and Recovery Rates

Despite all of this progress, studies have shown that approximately 95% of schizophrenic patients still do not receive appropriate amounts of evidence-based services, which may explain the gap in rates of recovery related to this disorder. This can imply that it may not be the disorder that is in and of itself impossible to recover from, but perhaps the approach to treatment that is inadequate and ineffective (Drake and Essock 2009; Brand and Menear 2014). Even more so, "treatment outcome research on mentally ill offenders specifically is almost nonexistent", and research in this area is just as meagre now as it was even 30 years ago (Rice and Harris 1997 as cited in Morgan et al. 2012, pg. 2). Over time, recidivism rates for MIOs seem to decrease depending on the type of treatment offered. Recidivism is the tendency of a convicted criminal to reoffend. The total number of mentally ill offenders admitted into Austria prisons as of the year 2021 were 1,411, with 1,261 one of them being male and only 150 being female (Bundesministerium für Justiz 2022). In a study done in Austria, a significant decline in recidivism rates was observed in the population of MIOs, going down from 17.9% in 2001/2002 to 6.7% in 2011/2012 (Stempkowski 2020). She explains how the recidivism rates for former detainees of custodial sanctions are actually lower than former prisoners, suggesting that a different structure to incarceration and treatment options for inmates makes a difference (Stempkowski 2019). This also indicates the ability of MIOs to recover, and that given certain guidelines are followed along with the correct support and environmental factors, these individuals would have no need to be incarcerated. Collaborative efforts involving courts, correctional facilities, probation officers, and social workers had contributed to these structural changes, reducing reoffence rates. According to another study, the rates of individuals in Austria going from prison to an interruption of custody before being released had increased from the years 2000/2001 to 2010/2011 by 93%. Recidivism rates dropped from 29.6% for offenders released in 2000, to 14.9% in 2011 (Stempkowski 2019). This also indicates a connection between the effectiveness of interrupted custody for this population in regards to recidivism rates for MIOs. However, a meta-analysis of psychological interventions applied to a general prison population did not find a significant decrease in recidivism, when excluding smaller studies. This signifies that therapeutic programs in forensic settings still need improvement to reduce reoffending rates in the general population, rather than just focusing on MIOs (Beaudry et al. 2021).

Emotional and social skills training

Perhaps even changing the way we view and approach criminality and offenses would help in treatment. For many years, the approach to dealing with dangerous behavior and criminality has been based on a trait model of personality (PCL-R, Hare, R. D. 2003; VRAG, Rossegger et al. 2009; LSI-R, Andrews and Bonta 1995). This views dangerous behavior as being related to a trait that people possess, and to which degree their level of "dangerousness" is. However, this trait approach

has led to little success in predicting the probability of an individual exhibiting dangerous or aggressive behavior in the future, it is simply assessing the degree to which they are aggressive in the present (Rice and Quincy 1980). That is why more dynamic factors are being considered with newer risk assessment tools, and not just static factors. Dynamic factors are those that indicate that a person can change over time and depending on the context, whereas static factors look at an individual only at one point in time or based on their history, which doesn't tell us much about their future risk or behavior. Tools like the Violence Risk Scale – Sexual Offender Version have shown this idea to be true, and still that, research in this area is relatively underdeveloped (Wong, Olver, and Nicholaichuk 2013).

The social competence model, on the other hand, assumes that the majority of behavior is also situational and that alternative positive behavior patterns can be acquired through modeling and practice, and furthermore that undesirable behaviors can even decrease by increasing the frequency of positive, appropriate social behaviors According to this view, an individual may "behave ineffectively or antisocially in problematic situations because (a) the behavioral skills required to act ineffectively are not within the person's behavioral repertoire, or (b) the necessary skills are present but the individual does not use them" (Rice and Quincy 1980, 373). It seems that a lot of the root causes for aggression and dangerous behaviors stem from not being able to appropriately express their emotions, specifically negative ones. Therefore, social and emotional skills training and modeling and practice are fundamental for equipping these individuals with the tools necessary to succeed in a social environment in a more positive way. Not only that but this also brings into the conversation the dignity with which we treat other human beings, seeing our clients not simply as delinquents within a forensic center, but as individuals who can be helped with care and compassion (Rotaru 2016, 29-43).

Current Study

This study seeks to contribute to the burgeoning research on forensic therapeutic centers, with the hope of learning more about the variables and patterns associated with lower recidivism rates. Secondly, by examining the effects of integrated psychosocial treatment on schizophrenic individuals thereby advancing our understanding and potentially improving the outcomes for this complex disorder. We aim to compare the social and emotional competency of schizophrenic patients from Pro Mente Plus before and after receiving treatment, expecting to observe notable shifts in the scales of these assessments. Specifically, it is expected that post-treatment scores on the BDI will reflect decreased depressive symptoms, indicative of improved mood states. The ISK scale should reveal increases in emotional awareness and social capabilities, respectively, demonstrating the program's effectiveness in fostering better emotional regulation and interpersonal skills. The FAF scale should show increased ability to control aggression tendencies, and the FKK scale should demonstrate the program's positive effects on an individual's ability to control their inward and outward environment, which therefore inadvertently affects their behavior as well.

A survey was handed out to participants before and after completing this therapeutic treatment program. The population was mostly characterized by a diagnosis of schizophrenia, but there were also some cases of personality disorder and mental retardation. The participants were chosen based on their completion of a modified version of the SkiL treatment program (otherwise known as Sozial Kompetent im Leben in German), which is geared towards schizophrenic populations with shortened sessions, easier language, and easier tasks to thus be able to match their abilities. Participants were given forms to sign in order to obtain their informed consent. In this informed consent they were briefed upon the measures taken to ensure confidentiality and safekeeping of the data collected, as well as the voluntary nature of their involvement in this study. They were also briefed upon the potential psychological impact of participating in this study.

Measures

Beck Depression Inventory (BDI-II)
The Beck Depression Inventory (BDI-II) is a self-report scale designed to measure the severity of depression symptomology, comprised of a total of 21 questions that are answered on a 4-point Likert-type scale ranging from (0) to (3) (Beck et al 1996). Each question addresses different issues that are indicative of depression symptoms, on topics such as sadness, feelings of guilt, hopelessness, and suicidal thoughts as some examples. The higher the final score, the greater the severity of symptoms indicating depression. The test-retest reliability ranges from .73 to .92 and the internal consistency has an alpha level of 91.

Stressverarbeitungsfragebogen (SVF)
The original, standard form of the Stress Processing Questionnaire includes 120 items with 20 subtests that test for different stress processing methods (Janke and Erdmann 2002). The test covers subjects such as trivialization, defense of guilt, situation control, aggression, and positive self-instruction, among others. The questions are answered on a 5-point Likert-type scale ranging from not at all (0) to very likely (4). The desired scores fall anywhere within two standard deviations within the mean, namely between the standardized scores of 40-60 on this scale. You don't want an extreme on either end, as we want individuals to be able to have adequate self-control, good control over their aggression, positive self-instruction, and trivialization to be of healthy amount. Scores that are too high could indicate an individual who trivializes everything, who has no sense of guilt, lacks self-control, is aggressive, and is unable to engage in positive self-instruction. The opposite would be true for a person with too low of a score, which is why ideally, we would look for someone to fall within the middle range. The Cronbach's Alpha of the subtests is between .66 and .92. The internal consistency of the subtests ranges from .62 and .96.

Inventar Sozialer Kompetenzen (ISK)
The Inventory of Social Skills questionnaire is a multidimensional self-assessment tool that is meant to assess and reflect social skills (Kanning 2009). Comprised of 108 items, it consists of 17 primary scales which can be grouped into four secondary scales; social orientation, offensiveness, self-control, and flexibility. The desired scores for this scale fall between one standard deviation from the mean, with standardized scores ranging from 90-110. If a person has scores that fall too low on this scale, this could result in a person being inflexible, intolerant of other people, lacking empathy, and inability to compromise, among other things, and vice versa if the scores are too high. Therefore, an individual is ideally within the range of one standard deviation from the mean to be balanced. The reliability of this instrument ranges from .69 to .90, and the test-retest coefficients range from .80 to .87.

Fragebogen zur Erfassung von Aggressivitatsfaktoren (FAF)
The Questionnaire to Record Aggressiveness Factors is a tool that analyzes aggressive behaviors and factors in the following areas related to aggression; spontaneous aggressiveness, reactive aggressiveness, excitability, self-aggression, and inhibitions of aggression (Hampel and Selg 1975). The desired scores fall between two standard deviations from the mean, and between the standardized scores of 3-7. Having too high of a value indicates an extreme level of aggression, and too low of a value indicates no ability to assert oneself or indifference. The values of the first three scales can be combined to form an overall aggressiveness value. Internal consistency is between $r = .61$ and $r = .79$.

Fragebogen zu Kompetenz und Kontrolluberzeugungen (FKK)
The questionnaire on competence and control beliefs assesses a generalized concept of one's own abilities, internality in generalized control beliefs, socially conditioned externality, and fatalistic externality. The desired scores fall between two standard deviations from the mean, with

standardized scores between 40-60. Too high scores could indicate a person who is overly confident in himself, arrogant, self-centered, has high emotional dependence on other people, and sees life as out of his control, with low values indicating the exact opposite. Here once again the desired scores fall somewhere in the middle to indicate a healthy individual. There was no validity or reliability scoring listed for this instrument.

All these instruments were compiled into one questionnaire which was handed out to participants in paper format. These instruments were given out as pre- and post-tests to patients before starting treatment and after concluding it.

Procedure

This study was conducted as a pre- and post-test design to investigate the effectiveness of the therapeutic interventions carried out by Pro Mente Plus GmbH. The participants completed these questionnaires before and after participating in the treatment program, which consisted of 20 sessions which lasted 60 minutes each, and which focused on specific needs of the clients. These needs are comprehensive, integrated things such as social and emotional competencies, psychoeducation, therapy, anger and stress management, and substance abuse. Those scores were compared using a dependent sample t-test. Through the examination of the mean scores on identical pre- and post-therapy questionnaires within our sample, this study aimed to identify the effect of the therapeutic interventions. We specifically looked at scores indicating improvement in the areas of social skills and psychoeducation regarding their diagnoses. Based on previous literature, we hypothesized that due to participation in an integrated psychological treatment program, participants would show increased levels of emotional and social skills.

Results

The participants of this study were asked to complete these questionnaires prior to and after completing treatment at Pro Mente Plus. There was a total of 35 male participants from which this data was collected, with a mean age of 33 years old, and an age range of 19-57. 100% of our participants were males, with the majority of them (74.3%) being originally from Austria, the next large majority from Serbia, with the rest being from various countries around the world. For relationship status, 54.3% of participants were single, whereas 28.6% were in a relationship, with the rest ranging from divorced or widowed. Relating to educational background, 45.7% completed some sort of technical school or apprenticeship, 25.7% completed some sort of compulsory education, and only 5.7% actually had a graduate degree. Lastly, 54.3% of participants reported having a history of family history of addiction, with 42.9% claiming no family history. As we had hypothesized, there were tests which showed an improvement in emotional and social skills after treatment.

BDI-II

A paired samples t-test showed a significant decrease in depression levels as measured by the Beck Depression Inventory II, $t(34) = 2.66$, $p < .01$, suggesting a small to medium effect size (Cohen's D = 0.45), with a 95% confidence interval [.098 to .794]. The mean pre-treatment score was 13.49 (SD = 8.42), which decreased to a post-test mean of 10.91 (SD = 8.39), indicating an overall reduction in depressive symptoms. Inferential statistics revealed significant improvements post-treatment. Even though the mean scores actually decreased, this actually indicates a positive result which means the depressive symptoms decreased in participants after receiving treatment.

SVF

The relaxation subscale of the SVF was significant, $t(34) = -3.18$, $p < .01$, indicating a medium negative effect size (Cohen's D = 0.54), with a 95% confidence interval of [-.889, -.179]. The pretest mean score was 13.91 (SD = 5.16), increasing to a post-test mean of 16.97 (SD = 4.57). These results convey an improvement in the way people tend to make conscious attempts to react and deal with stress, and their ability to do so well and in a relaxed manner.

The positive strategies 02 subscale of the SVF was significant, t(34) = -2.94, p < .01, with a Cohen's D = 0.49 reflecting a small to medium negative effect size, with a 95% confidence interval [-.846, -.143]. The pretest mean was 12.70 (SD = 3.58), which increased to 14.40 (SD = 3.82) in the post-test. An increase in this subscale demonstrates an improvement in the ability to participate in adaptive distraction behaviors when dealing with stressful events. Overall, this subsection reflects processing methods that handle finding compensating mechanisms in dealing with stress.

ISK

The prosociality subscale of the ISK was significant, t(34) = -2.66, P < .01, with a small to medium negative effect size (Cohen's D = 0.46), and a 95% confidence interval [-.806, -.099]. The pretest mean was 16.94 (SD = 3.35) and the post-test mean increased to 18.50 (SD = 3.19), indicating an improvement in prosocial behavior. The prosociality subscale looks at to what extent a person actively engages with other people by helping them, or behaving in solidarity and fairness towards them. The self-control subscale of the ISK was significant, t(34) = -2.62, p < .01, with a small to medium negative effect size (Cohen's D = 0.44), and a 95% confidence interval [-.787, -.092]. The mean score of the pretest was 77.29 (SD = 8.56) and the post-test mean was 81.66 (SD = 8.80), exemplifying an increase in the participant's ability to rationally control their behavior even in stressful situations.

FAF

The self-aggression or depression subscale of the FAF was significant, t(34) = 3.30, p < .01, with a medium effect size (Cohen's D = 0.56), and a 95% confidence interval [.198, .911]. The pretest mean was 4.86 (SD = 2.64), and the post-test mean being 3.74 (SD = 2.77), indicating a decrease in depressive traits, dissatisfaction with life and a negative attitude. Lower values suggest a balanced mood, and possibly even unconscious self-satisfaction. These values tend to be quite high for patients and offenders.

FKK

The internality subscale of the FKK showed significant change, t(34) = -3.03, p < .01, with Cohen's D = 0.51, reflecting a medium negative effect size, and a 95% confidence interval [-.861, -.156]. The mean score of the pre-test was 32.54 (SD = 6.37), with the post-test mean increasing to 35.91 (SD = 4.69). These results demonstrate a significant positive change in the participants' perceived control of their health and life circumstances after treatment. The generalized self-efficacy subscale of the FKK was significant, t(34) = -2.68, p < .01, with a Cohen's D = 0.45, reflecting a small to medium negative effect size, with a 95% confidence interval [-.799, -.102]. The mean pretest score was 66.11 (SD = 11.04), with the post-test mean increasing to 70.37 (SD = 10.30). This result indicates an improvement in dealing with one's self concept of their own abilities, showing an increase in self-confidence and their ability to react in vague situations.

To address potential Type I error due to multiple comparisons, we chose a more conservative alpha level of .01. The statistical analyses accounted for the assumptions of normality and homogeneity of variance, which were verified through Shapiro-Wilk and Levene's tests, respectively.

Discussion

Based on the results found, we saw decreases in both the BDI and the self-aggression or depression subscale, indicating that depressive symptoms and negative attitudes towards life decreased post treatment. The self-aggression and depression subscale of the FAF had the largest effect, meaning that this variable in particular was the one with the largest difference between the pretreatment and post treatment. Because for this scale higher values are not ideal, a decrease is actually desired. This signifies that out of all the scales, the one with the biggest results was seen in the decrease in dissatisfaction with life and negative attitudes, depressive symptoms and traits, and indicate a more balanced mood.

The means of the following scales all increased: the internality scale, the generalized self-efficacy scale, the relaxation scale, the positive strategies 02 scale, the prosociality scale, the self-control scale. What increases on these scales mean are that individuals reported being able to have greater control over their own life, and the ability to successfully regulate their own social interactions and experiences; they showed increased levels of self-confidence, behavioral flexibility, and the ability to act in ambiguous situations post treatment as compared to before; they were able to consciously relax under pressure; when in stressful situations individuals were able to engage in actions as distraction from that or look for alternative activities; individuals reported engaging more positively with other people, and behaving in a prosocial manner with them; and this also indicated increased ability in participants to rationally control their behavior under stress. While the effect sizes of these were merely small to medium, they are still pointing in the right direction based on what we hypothesized, as well as what we were hoping the treatment would achieve. If we look at what these scales measure, and what they signify an improvement on, that is largely centered around social and emotional skills.

The internality subscale looks at the individual's ability to subjectively perceive control over their own life and other events within their environment, thus an increase in scores post treatment showed individuals displaying their perception of success as dependent on one's own effort and commitment, representing their own interests as successful and as often achieving what they desire or had planned. This also manifested itself in their ability to better regulate their social interactions, and being able to experience their own actions and behavior as effective and good.

The generalized self-efficacy subscale increases in post treatment scores revealed an individual who has more self-confidence, who is confident in their ability to plan and implement actions, who has the ability to be imaginative and deal with ambiguous situations, and overall has behavioral flexibility. This can indicate that a person has enough social and emotional skills to deal with both their own perception of themselves which influences how they then act in social environments with others, but also the flexibility for dealing with ambiguous social situations. Therefore, an increase in this also means an increase in social awareness and skills.

The relaxation subscale showed improvements in the individual's ability to relax even under stress, and their ability to consciously attempt to relax while under those situations. While this one may not be a direct emotional or social skill, it is nevertheless connected to those skills. If you are in a stressful or new situation where you don't know what to do or how to react, if you cannot control your stress levels, you will not be able to think clearly and react appropriately to the situation at hand. For that reason, being able to consciously relax and control yourself in stressful situations is a good first step, rather than reacting perhaps aggressively or indifferently to whatever stressor is at hand. This then is linked with being able to be resilient and versatile.

The positive strategies 02 subscale indicated growth in the area of compensation-oriented processing methods. Overall, they displayed action tendencies of being able to distract themselves from stressful events by turning to alternative situations or activities which would help them relax or have a more positive outlook. These behaviors are known to be stress antagonistic, which is their ability to go against stress and counter it with positive substitutes or methods. This would be a social skill that well-functioning individuals would be able to engage in easily, and something that individuals who struggle with schizophrenia or other mental disorders struggle with a bit more than others. Thus, being able to learn this social skill which we might otherwise take for granted, allows them to better monitor and deal with their negative emotions when encountering a stressful situation, and not engaging in negative behaviors such as lashing out aggressively or shutting down.

The prosociality subscale displayed an improvement in the extent to which the participant actively engaged with other people in a positive manner, by helping them, behaving in solidarity or fairness towards them. This indicates a sense of empathy and desire to help others, practicing

justice towards others and fighting for their good and not just the participant's own well-being. For many offenders and mentally ill individuals this is typically lower, so being able to see an increase in this is a positive thing to see. The self-control subscale indicated increased ability to rationally control their own behavior even in stressful situations, to act thoughtfully, and control their emotions. Therefore, this was both a social and emotional skill they learned, as the ability to control their emotions was also linked to their ability to act thoughtfully and control their behavior even in adverse situations.

To sum up, individuals were able to have greater control over their own life, and the ability to successfully regulate their own social interactions and experiences. They showed increased levels of self-confidence, behavioral flexibility, and the ability to act in ambiguous situations post treatment as compared to before. They were able to consciously relax under pressure and when in stressful situations, individuals were able to engage in actions as a distraction from that or look for alternative activities. Individuals reported engaging more positively with other people, and behaving in a prosocial manner with them.

Out of the total 61 tests ran, only the aforementioned 8 scales turned out to be significant, with small to medium effect sizes. Treatment seemed to have positive effects on improving patients' mood, self-control, self-confidence, relaxation, and prosociality. As we had predicted, treatment did seem to have a positive effect on emotional and social skills. Further research should be done to see if there could be a stronger effect size, or to understand why these specific scales were significant when the others were not. This is a good starting point, however, for analyzing how treatment could be changed and improved to be more effective overall if this treatment did improve certain social and emotional skills in patients. Unlike regular offenders, schizophrenic patients usually commit their crimes at the height of a psychotic break, or due to lack of medication and/or appropriate treatment options available to them. If given the right tools to use, redemption could be possible. This is something to consider when analyzing the recovery and reintegration opportunities for schizophrenic patients. As recidivism rates decrease, we see that providing these patients with the necessary resources to behave in socially appropriate ways, and deal with their illness in ways that do not harm themselves or others could mean that prison is not the only option. There are other environments that could be more conducive to their recovery, such as forensic therapeutic centers or psychiatric care wards.

Nevertheless, this manner of treating mentally ill offenders especially with a diagnosis of schizophrenia, is difficult and rare. Because of its innovative nature, these types of forensic therapeutic centers and treatment for schizophrenic offenders are still lacking. As previous studies found, integrative therapeutic approaches combining multiple evidence-based practices seem to have better overall effects, as this disease is complex and multilayered. Thus, effective treatment must incorporate different approaches that focus on the different aspects of the disease. However, more data and research are still needed to understand what techniques work best for this population and better results.

Limitations

One of the biggest limitations of this study was the specific instruments used and how they were scored, which required us to run multiple dependent samples t-tests. This, of course, increased Type 1 error, making it difficult to ascertain how many of the significant results we found to be truly significant or not due to Type 1 error. We are aware of this limitation and attempted our best to correct for this when running the tests by adopting a more conservative alpha level of .01. Finding better instruments to be utilized in such studies in the future could decrease the Type 1 error, and show more concrete results.

Another limitation was the small sample size. Given the fact that the entire forensic population of mentally ill offenders in all of Austria is around 1,411 individuals (Bundesministerium für Justiz 2022), any research on this topic is of use and contributes in a helpful way to a very specific and small population. Another one of the limitations of this study

is that 100% of our participants were men, as we did not have any women clients which participated in this study. While future studies should include women as well, seeing as women only make up 15% of the total number of MIOs, it's difficult to have a more representative sample which includes women as well (Bundesministerium für Justiz 2022). Thus, our current sample size is acceptable seeing as it does seem to be representative of the larger population and the gender differences and distribution.

Another limitation is the lack of follow-up procedures set in place, which makes it difficult for us to analyze the effectiveness of treatment long term. This is why longitudinal studies are necessary, as they inform us about how long the effects of treatment remain valid and provide insights into the changes needed for more lasting effects. Also, due to the lack of a control group in this study it makes it hard for us to attribute positive improvements solely to the treatment alone. Including control groups in future such studies would be of great benefit to compare findings and results. Similarly in future studies, qualitative measures could also be implemented and not solely quantitative ones so as to provide with more in depth information about the participants experience with this program.

Other limitations could include potential biases in self-reported data as this quantitative data is all based on results from self-reported measures. The generalizability of findings would be limited to similar prison populations. Furthermore, the impact of external factors is plentiful as the everyday environment is different for each individual. The response of participants to treatment is also very dependent on their medication intake, medication side effects and adherence to their schedule, as well as relapse occurrences. Other such external factors could include different therapists administering the therapy, as well as each individual's disposition and inclination towards therapy, their participation, and other such factors.

Significance of research

The significance of this research fills a gap in research as mentioned in Lecomte and colleagues' study (2014) done on the mixed treatment methods for schizophrenia and their greater effectiveness when combined than when administered separately, as Pro Mente Plus also combines CBT, psychoeducation, social skills, cognitive training, with the continued use of medication. Furthermore, the forensic environment with mentally ill patients is not very studied in Austria to understand the percentage of MIOs, and what that means in terms of the necessity for incarceration compared to treatment in custodial sanctions or institutions with integrated care services. Not only is there a small population of MIOs in Austria, but there are also not many forensic therapeutic centers from which those individuals can receive treatment. Therefore, centers like Pro Mente Plus and clients like the sample population in this study are distinctive, meaning that this study is addressing that gap in research. Hopefully, with these results, we can get an idea of how effective programs like this are with such populations, which can help guide institutions and governments on how to approach the criminally insane. Lastly, the results could help overcome the stigma surrounding mental illness and criminality in Austria, and what it means for the rehabilitation of such populations.

Conclusion

Our hope is that with increased emotional and social skills, individuals will be better prepared to re-enter society in a more functional way, and that this may inadvertently impact recidivism rates. Alongside cognitive remediation programs, social skills programs are more likely to succeed, especially when part of integrative therapeutic programs that incorporate both pharmacological and psychosocial elements. Future research could focus on more randomized controlled studies which manipulate both pharmacological and psychosocial elements to see whether or not one aspect contributes more than the other to treatment effectiveness. Finding better tools to measure the effectiveness of such treatment programs is also something future research could look into. Our focus should be more on how to correctly interpret symptoms of psychosis and schizophrenia and

on prevention relapse rather than aggression or reoffending rates. With this population, the aggression and reoffending rates are directly tied with relapse and psychosis, rather than out of desire and criminal intent. Therefore, controlling for those symptoms, enabling preventative measures for relapse and psychotic symptoms could directly change the aggressive behavior and reoffending rates. Nevertheless, the more research done on this topic can only help us find new and better solutions for how to increase chances of recovery and integration back into society not only for those suffering from this disease, but who also became legal offenders because of this disease.

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Appendix

Table 1. BDI-II

	Pre-Test			Post-Test		
	N	M	SD	N	M	SD
BDI-II	35	13.49	8.42	35	10.91	8.39

T-Test						
	Confidence Intervals		t	Df	Cohen's D	Sig. (2 tailed)
	Lower	Upper				
BDI-II	.098	.794	2.66	34	0.45	<.01

Table 2. FKK – Internality subscale

	Pre-Test			Post-Test		
	N	M	SD	N	M	SD
Internality	35	32.54	6.36	35	35.91	4.68

T-Test

	Confidence Intervals		t	Df	Cohen's D	Sig. (2 tailed)
	Lower	Upper				
Internality	-.861	-.156	-3.03	34	-0.51	<.01

Table 3. FKK - Generalized Self-Efficacy subscale

	Pre-Test			Post-Test		
	N	M	SD	N	M	SD
Generalized self-efficacy	35	66.11	11.04	35	70.37	10.30

T-Test

	Confidence Intervals		t	Df	Cohen's D	Sig. (2 tailed)
	Lower	Upper				
Generalized self-efficacy	-.799	-.102	-2.68	34	-0.45	<.01

Table 4. SVF - Relaxation subscale

	Pre-Test			Post-Test		
	N	M	SD	N	M	SD
Relaxation	35	13.91	5.15	35	16.97	4.57

T-Test

	Confidence Intervals		t	Df	Cohen's D	Sig. (2 tailed)
	Lower	Upper				
Relaxation	-.889	.179	-3.18	34	-0.54	<.01

Table 5. SVF - Positive Strategies 02 subscale

	Pre-Test			Post-Test		
	N	M	SD	N	M	SD
Pos. Strats. 02	35	12.70	3.58	35	14.40	3.81

T-Test

	Confidence Intervals		t	Df	Cohen's D	Sig. (2 tailed)
	Lower	Upper				
Pos. Strats. 02	-.846	-.143	-2.94	34	-0.49	<.01

Table 6. ISK - Prosociality subscale

	Pre-Test			Post-Test		
	N	M	SD	N	M	SD
Prosociality	35	16.94	3.34	35	18.50	3.19

T-Test

	Confidence Intervals		t	Df	Cohen's D	Sig. (2 tailed)
	Lower	Upper				
Prosociality	-.806	-.099	-2.66	34	-0.46	<.01

Table 7. ISK – Self-Control subscale

	Pre-Test			Post-Test		
	N	M	SD	N	M	SD
Self-control	35	77.28	8.56	35	81.65	8.80

T-Test

	Confidence Intervals		t	Df	Cohen's D	Sig. (2 tailed)
	Lower	Upper				
Self-control	-.787	-.092	-2.62	34	0.44	<.01

Table 8. FAF – Self-Aggression or Depression subscale

	Pre-Test			Post-Test		
	N	M	SD	N	M	SD
Self-aggression/depression	35	4.85	2.63	35	3.74	2.76

T-Test

	Confidence Intervals		t	Df	Cohen's D	Sig. (2 tailed)
	Lower	Upper				
Self-aggression/depression	.198	.911	3.302	34	.558	<.01

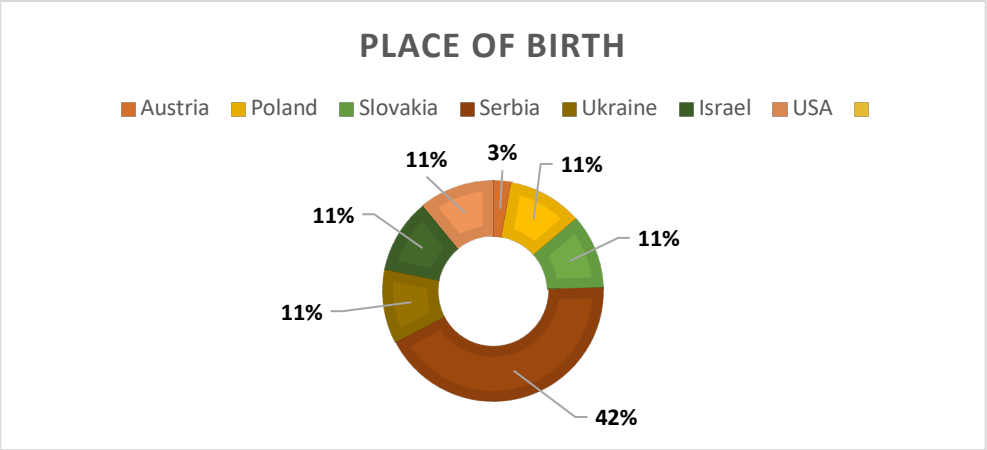

Figure 1. Pie chart demonstrating percentage breakdown of participants' nationality and place of birth

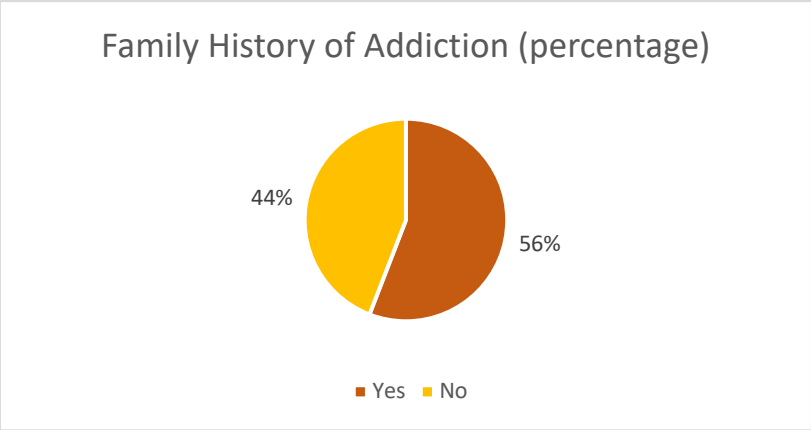

Figure 2. Pie chart demonstrating percentage of participants that have or do not have a history of addiction in the family

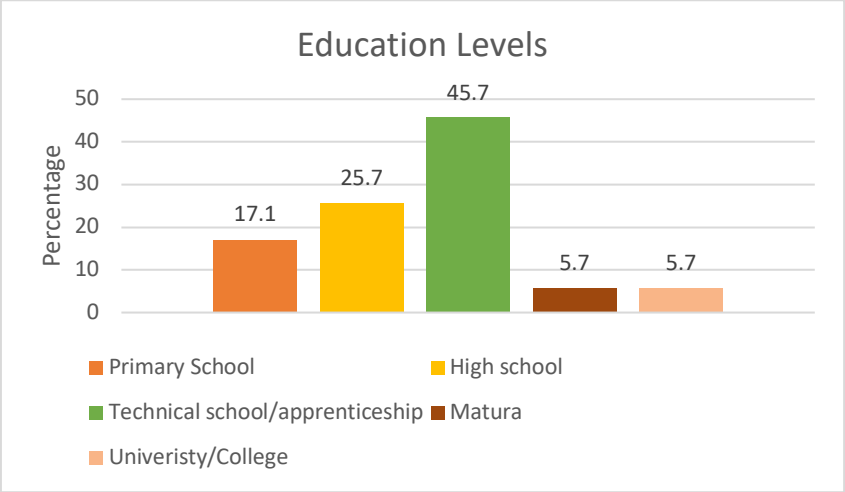

Figure 3. Bar graph demonstrating the percentage breakdown of participants' education levels

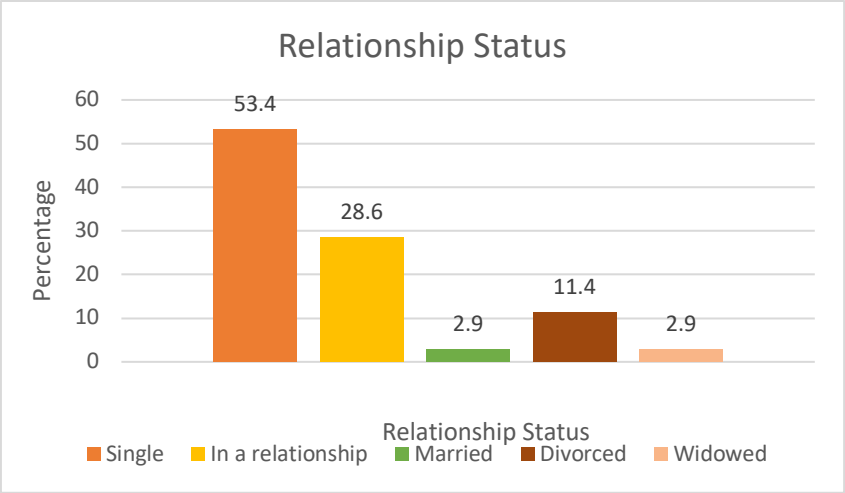

Figure 4. Bar graph demonstrating the percentage breakdown of participants in different relationship types

Figure 5. Frequency table of subjects' age in years