

Improving Aggression Regulation in Highly Gifted Underachievers: An Evaluation Study Based on a Mixed Methods Design

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Received 2016 December 18; Accepted 2016 December 22.

Abstract

Background: Gifted adolescents suffering from severe intellectual inhibition may generally not be helped by pedagogical means alone. This special blockade results from a deep disturbance of the affective and pulsional functioning and can be treated by music psychotherapy in individual sessions, combined with psycho-pedagogical applications of music therapy in group sessions.

Methods: The integrated treatment programme was evaluated by means of a prospective longitudinal study, using a mixed research methodology that combined a psychometric scale, a projective test, and an observational frame for the music therapeutic sessions. Two clinical subgroups of students treated by the above described psychotherapeutic approach (N = 20 + 23) were compared with a control group (N = 43) of students who received only traditional pedagogical measures.

Results: The changes induced in the two clinical subgroups on emotional and conduct variables point to a better integration and elaboration of aggressive drives leading to an increase in creativity and intrinsic motivation. There were also positive changes in school results. On variables linked to aggressivity, the control group partially evolved in an opposite direction.

Discussion: The observed changes are discussed at the light of structural psychopathology. As to the chosen research methodology, a person-centred approach, combined with a quasi-experimental design, is liable to meet Wampold's conclusions on psychotherapy research.

Conclusions: The outcome of the study stresses the opportunity to offer music psychotherapy to highly gifted underachievers as a means of tertiary prevention.

Keywords: High Ability, Inhibition, Music Psychotherapy, Quasi Experimental Design, Underachievement

1. Introduction

According to research results (1-4), one third of students with an I.Q. of 130 and more are at risk of school failure in the secondary school. They may suffer from a deep blockade of their cognitive, volitional, and emotional functioning (5-10), or else from a tendency to acting out their unresolved inner conflicts (11, 12). Clinical experiences have shown that they need a specific kind of integrated psychotherapy to overcome problems with aggression regulation (13, 14). We will present a prospective longitudinal study aiming at exploring the psychotherapeutic outcome and process.

2. Theoretical Background

Psychological indicators for high giftedness are, among others, the quickness of thought and understanding and the great sensitivity since the first years of life (15-19). These children may react impatiently to other persons who need longer explanations and may be rejected by

others. Whilst most of them develop quite positively (20-22) and show their intellectual creativity in many realms, some of them are confronted with various psychological problems (23-28). If a highly gifted adolescent fails at school, a thorough psychological assessment is necessary to uncover the origin of his difficulties. A retrospective evaluation of ten years, performed in the psychology service of a secondary school, shows that with a total group of 185 highly gifted underachievers, there has been a diagnosis of borderline functioning for 20% of them, depressive reactions to recent events (for instance emigration, death of a beloved person, or a serious somatic disease) for 35%, and minor problems attributed to the neurotic level or linked to the current identity quest for the rest 45% (5).

The inhibition we encounter among these students meets the criteria of Marcelli & Braconnier (29) that distinguish three realms covered by the inhibition:

- The intellectual inhibition
- The inhibition of fantasy
- The relational inhibition or timidity

It is important to stress that the intellectual inhibition impedes exclusively the school results but not the results

in the intelligence test. The students in our experimental group had an I.Q. of minimum 128, and yet their intelligence was judged mediocre by their teachers, their parents and often by themselves as well. We should emphasize that, according to the European standards, an I.Q. of 128 is the conventionally accepted inferior limit for the definition of highly gifted pupils.

3. Methods

3.1. Methodology of Treatment

Highly gifted underachievers were treated by a combination of music psychotherapy in individual sessions and sound communication combined with pedagogical measures in group sessions. We developed weekly one-hour sessions of individual music psychotherapy followed the restructuring method for borderline adolescents (30-32), by combining free musical improvisation with the writing of stories under musical induction. It was followed by verbal elaboration in the cognitive psychodynamic tradition, which was focused on mentalization (33).

The basic attitude is that of Kohut's psychology of self (34) stressing the importance of mature narcissism and postulating a separate development line for the narcissistic and objectal needs. The main aim is the resumption of the blocked process of subjectivation (35). The method consists in reacting to the client's propositions by musical responses and reassuring him, or consequently confronting him, before moving to verbalisation. In this process, we are attentive to the manifestations of the unconscious and defensive reactions, but we leave it up to the client to discover the sense of his behaviour, proposing an interpretation in exceptional cases only. Fragments of the past eventually emerge and are elaborated upon by means of imagination, artistic production, and symbolization. The therapeutic process becomes a quest of meaning of one's personal history.

The adolescents participated also in weekly two-hour group sessions, based on free sound communication (36), combined with a classical concentration and memorization training and therapeutic interventions based on actual group dynamics. The goal consisted in reinforcing the learning skills, motivation, self-esteem, and assertiveness of the participants. The effects of individual and group sessions are complementary.

3.2. Methodology of Evaluation

3.2.1. Research Question

The general hypothesis of the research was that highly gifted underachievers could be effectively treated through

the above described kind of integrated psychotherapy, because of its possibility of imaginative and symbolic elaboration of archaic phantasms, overcoming the inhibition which may spoil the likelihood of further personal evolution, eventual reinforcement of motivation and self-esteem and improvement of learning strategies.

3.2.2. Participants

Our study consisted of 43 adolescents aged twelve to fourteen years. They were selected according to the criterion: general performance \geq 9th percentile on the LPS (corresponding to an IQ \geq 128). The LPS (Leistungsprüfungssystem, (37)) is a widely used test in clinical and orientation practice of adolescents. It is based on Thurston's primary mental abilities that combines measures of convergent and divergent thinking. Its norms, differentiated according to age and gender, are based on N = 10 000 subjects.

The pupils in our clinical group were treated by the above described methodology during a period lasting from six to eight months, i.e. from the midst of the fall semester to the end of the summer semester. The control group comprehended adolescents who underwent pedagogical measures but did not ask for psychotherapeutic intervention. They were matched to the clinical group by age, gender, I.Q., and school results (N = 43) (Table 1).

3.2.3. Procedures

The effectiveness of music psychotherapy was evaluated utilizing a methodology, both quantitative and qualitative, on the basis of a quasi-experimental design using a control group. As we worked with a small sample size and handled data of a mixed level of measurement, we largely used non-parametric statistics (38).

The clinical assessment was based on a mixed quantitative and qualitative methodology, combining a psychometric test, i.e. the FAF (Fragebogen zur Erfassung von Aggressivitätsfaktoren, (39)), an expressive test, i.e. the stories written under musical induction (32, 40), and an observational frame for the music therapeutic sessions.

The FAF is a self-report questionnaire composed of the following general dimensions: spontaneous aggression, reactive aggression, irritability, interiorized aggression, and inhibition of aggression. It allowed evaluating the self-perception of aggressive drives and conducts.

For the stories written under musical induction, for which we have shown that they function like a projective test and are complementary to both the Rorschach and the TAT (41), we constructed a rating scale in the phenomenological and structural tradition (42), comprised the following general dimensions: personal implication, quality of

Table 1. General Descriptive Parameters of the Clinical Group and the Control Group

Variable	Clinical Group (N = 43)	Control Group (N = 43)
Age	md = 13,1	md = 12,9
School results (fall semester)	md = 25,8/60	md = 45,4/60
LPS (C value)	md = 9,5	md = 9,3
Gender	Boys: N = 26, girls: N = 17	Boys: N = 26, girls: N = 17

imaginary elaboration, type of aggression, formal qualities, level of elaboration, nature of conflict, and archetypal themes. The observational frame for active music therapy is made of the following general sections: nonverbal expression, verbal communication, and musical creation.

These scales allowed using the musical and literary productions as a tool of research by filling the gap between qualitative analysis and the use of inferential and multidimensional non-parametric statistics suited to data obtained from the nominal and ordinal level of measurement (43).

We made separate evaluations for the two clinical subgroups of highly gifted underachievers. The first type was characterized by a false self and over adaptation (sub group I; N = 20), and the second one by impulsivity and emotional instability (sub group II, N = 23). The attribution to the subgroups was made through a semi-structured interview, conducted by experienced clinical psychologists. It was based on a thorough anamnesis with the parents and clients as well as on the behavioural criteria of categorical psychopathology.

We are presenting the significant changes in the pretest-posttest comparison of the stories and the FAF.

4. Results

4.1. Pretest- Posttest Comparison of the Stories Written Under Musical Induction

In the clinical subgroup I (N = 20), characterized by over-adaptation, we observed a significant increase in elaborated aggression, qualitative creativity, sensitivity to the expression of emotions, quantitative productivity, and emotional and bodily implication, and a significant reduction in depressive feelings.

In the clinical subgroup II (N = 23), characterized by impulsivity, we observed also a significant reduction in primary aggression, qualitative creativity, bodily and emotional implication, and sensitivity to the expression of emotions, as well as a significant reduction in anxiety.

The findings in the two clinical subgroups are very close. The fact that music therapy leads to a similar evolu-

tion, independently of the diversity of prior surface symptoms, speaks in favour of the structural conception of psychopathology (44).

In the control group (N = 43), the only significant change concerned sensitivity to the expression of emotions ($Z = -2.343$; $P = 0.05$), while the other variables remained stable during the treatment period of the clinical group.

4.2. Pretest- Posttest Comparison of the FAF

In the clinical subgroup I, we indicated a significant reduction in irritability and interiorized aggression, whereas in the subgroup II, we demonstrated a tendency towards an increase in controlled aggression but a reduction in global exteriorized aggression. Thus, on the symptomatic level, measured by the self-report questionnaire FAF, both subgroups showed a compensatory evolution considering their self-image.

In the control group, global exteriorized aggression and reactional aggression increased in the same amount of time. Thus, the control group partially evolved in an opposite direction to that of the clinical group. This case constitutes a probate figure according to the criteria of Raulin & Graziano (45) for quasi experimental research designs (see discussion part).

4.3. External Validation Criteria

In the clinical group, there were significant positive changes in school results. In the fall semester, the median of school results in the clinical group was 25, 8, whereas it was 38, 6 at the end of the summer semester, with marks ranging from 1 to 60.

There was also a positive evolution in the realm of creative leisure activities.

5. Discussion

Our experimental approach was person-centred (using a great number of variables per person instead of a great number of persons per variable (46)) in a quasi-experimental design.

Table 2. Pretest-Posttest Comparison of the Stories: Clinical Subgroup I (Wilcoxon's Sign Rank Test)

Variable	Z	Bilateral Significance	Direction of Difference
Elaborated aggression	-3.130	P < 0.01	Pre < post
Creativity	-2.646	P < 0.01	Pre < post
Depressive feelings	-2.394	P < 0.05	Pre > post
Quantitative productivity	-2.070	P < 0.05	Pre < post
Emotional and bodily implication	-2.070	P < 0.05	Pre < post
Sensitivity to the expression of emotions	-2.011	P < 0.05	Pre < post

Table 3. Pretest-Posttest Comparison of the Stories: Clinical Subgroup II (Wilcoxon's Sign Rank Test)

Variable	Z	Bilateral Significance	Direction of Difference
Primary aggression	-3.122	P < .01	Pre > post
Creativity	-2.646	P < .01	Pre < post
Anxiety	-2.303	P < .05	Pre > post
Bodily and emotional implication	-2.280	P < .05	Pre < post
Sensitivity to the expression of emotion	-1.972	P < .05	Pre < post

Table 4. Pretest-Posttest Comparison of the FAF: Clinical Subgroup I (Wilcoxon's Sign Rank Test)

Variable	Z	Bilateral Significance	Direction of Difference
FAF 3	-2.646	P < .05	Pre > post
FAF 4	-2.029	P < .05	Pre > post

Table 5. Pretest-Posttest Comparison of the FAF: Clinical Subgroup II (Wilcoxon's Sign Rank Test)

Variable	Z	Bilateral Significance	Direction of Difference
FAF 5	-1.844	P < 0.10	Pre < post
FAF Sigm	-1.660	P < 0.10	Pre > post

Table 6. Pretest-Posttest Comparison of the FAF: Control Group (Wilcoxon's Sign Rank Test)

Variable	Z	Bilateral Significance	Direction of Difference
FAF Sigm	-2.394	P < 0.05	Pre < post
FAF 2	-1.844	P < 0.10	Pre < post

Table 7. External validation criteria: total clinical group (Wilcoxon's Sign Rank Test)

Variable	Z	Bilateral Significance	Direction of Difference
School results	-2.217	P < 0.01	Pre < post
Creative leisure activities	-2.078	P < 0.05	Pre < post

In a quasi-experimental or non-equivalent control-group design (45), the role of the control group consists in

checking that the results of the experimental group are not merely due to spontaneous maturation (normal changes

in participants in the course of time) or to contingent events of personal history (changes in participants during the study due to other events than the independent variable, i.e. the treatment). The results may be interpreted in a causal sense if the experimental or clinical group changes markedly in the predicted direction, whereas the control group remains at the same level.

The pretest-posttest comparisons documented the interest of a mixed methodology, combining psychometric tests with projective, consecutive expressive tests. This combination allows us considering the structural functioning of personality as well as surface symptoms and making a more adequate interpretation of changes.

The individual sessions produced a mutual enrichment of the musical and literary production, the themes of the stories being used as a stimulus for musical improvisation, which led to a freer floating of images and feelings and a deeper implication in the stories written afterwards.

During the music therapy sessions, the blockade of conscious fantasy is slowly released, imagination becomes more fertile, and clients produce more authentic stories corresponding to their intimate needs. During the verbal elaboration, the free association with the literary production allows correcting negative attitudes about one self and dysfunctional cognitive schema (47).

The observed changes are plausible in the light of structural psychopathology (44), which stresses that the same underlying personality organization (i.e. of the psychotic, borderline or neurotic type) may give expression to various fluctuating symptoms at the observational level. Evaluation studies with borderline adolescents (31) have led to the conclusion that, with long term music psychotherapy, there may be a restructuring of personality. Our results with highly gifted underachievers, as examined through the projective test, suggest a personal maturation and a reduction in the cognitive, volitional, and emotional blockade in the two clinical subgroups, the first group showing an increase in elaborated aggression and the second one a reduction in primary aggression, a result that may also be interpreted in structural terms. On the descriptive level of the self-report questionnaire, the interiorized aggression has diminished in adolescents suffering from over-adaptation whereas, in those suffering from impulsivity, the aggressive reactions seem to be better integrated and controlled. These positive effects allow us understanding the long-term improvement in school results and the implication in more creative leisure activities. There is more energy available when the frightful fantasies and negative feelings are elaborated on an imaginary and symbolic level instead of being acted out or directed towards one's own body.

We should stress that findings coming out of action re-

search with small groups do not aim at statistical generalization but they can indicate tracks for future research. According to Wampold's findings (48), we cannot mix up data coming from different psychotherapists, even if they use the same technique, as personal traits of client and therapist and quality of relationship between them can explain a greater part of the variance than technical issues. In evaluation studies of psychotherapy, we have to respect these restrictions and rely rather on person-centred research (46).

6. Conclusion

According to our clinical experience and considering our research results, deficits in aggression regulation in highly gifted underachievers may be overcome if we offer them an appropriate psychotherapeutic treatment, as pedagogical measures alone are inefficient. Psychotherapy based on artistic mediations is well adapted to their special sensitivity to intrusion. It is important to stress that aggression dysregulation does not belong to the psychological features of high ability itself, but it is due to relational problems and psychopathological complications (12, 27, 29, 49, 50). Highly gifted children may eventually develop a special sensitivity which could favour relational problems (3, 9, 51).

Without a treatment, the students in our clinical group were at risk of having a diminished life, never realizing their real potential (52), and becoming more openly depressive individuals later on, because they may be unconsciously aware of the discrepancy between their actual functioning and their potential. Psychic health is linked to the possibility of realisation of one self about the innate and acquired abilities (34, 53).

Thus, it is important to propose them an appropriate type of psychotherapy, as a means of self actualisation and tertiary prevention, i.e. treating people as soon as they show the first symptoms of possible psychopathological complications.

Footnotes

Conflicts of Interest: None to declare.

Ethical Statement: The study has been performed in accordance with the ethical standards laid down in the 1964 declaration of Helsinki and its later amendments.

Funding/Support: None.

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