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The effectiveness of attenuation of disadvantageous pair bonding from the past: a pilot study

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Summary

The present article is the second part of a project dealing with disadvantageous pair bonding from the past. A review of the literature on psychotherapy of sexual problems is presented. The research part is of pilot character. It concerns assessment of the effectiveness of therapeutic procedures (such as visual imaginary) aimed at attenuating the past pair bonding. Major findings indicate that due to the psychotherapy there is a statistically significant: (1) improvement in the quality of sexual life, (2) greater desire for sexual intercourse with the current partner, (3) greater satisfaction with the frequency of the intercourse, (4) the frequency of thinking about having sex with a different partner during the intercourse with the present one was declined. These findings can be understood as result of using different techniques of past pair bonding attenuation, especially visual imaginery.

Key words: attenuation of pair bonding, group psychotherapy, sexuality, visual imaginery, effectiveness, medical statistics

Introduction

The issue of pair bonding has been recognized as an important field of interdisciplinary research. All sorts of different aspects of pair bonding were described in the first part of the project, Paper I: "The process of forming a pair bond – selected sexual disadvantageous factors". A conclusion which may be drawn from that paper is that people have a limited capacity to bond. Once the capacity is exceeded, people can neither bond to their present partner nor be as intimate as they would like to. In our clinical practice, we have observed that at least some of the patients who had many sexual partners in the past have difficulties maintaining or establishing a close, intimate, long-lasting, and satisfying relationship. Therefore, unless they grieve the loss of previous relationships in terms of detaching, it is difficult for them to form a new and intimate bond.

Up till now, nobody has studied the process of pair bonding attenuation. We use the term "attenuation", because we are convinced that the disadvantageous pair bonding

from the past can only be loosened to a certain degree, or attenuated, and not completely deleted, which is due to their intense conditioning. The process of attenuation was conceptualised in the NEST[1] association and became a part of a group therapy for people with various sorts of traumatic experiences.

Literature review

The character of the present study makes impossible to review all the forms of therapy, which also include pharmacotherapy (e. g. with medoxyprogesterone's derivatives) or surgery. A detailed description of different forms of psychotherapy also exceeds the scope of our study.

Although researchers agree that there isn't any universal model of both the conceptualisation and the treatment of sexual disorders, they do concur that the following approaches are particularly useful: psychodynamic, cognitive-behavioural, and systemic [1, 2, 3, 4]. Currently, it is also generally believed that combination of the psychodynamic therapy with the cognitive-behavioural one, and in some justified cases – with pharmacotherapy or hormone treatment as well, is most effective [5].

According to the psychodynamic theory, sexual disorders are derivative of pathology of character which results, among other things, in some drives of id that are not suppressed by the superego. Some advocates of the approach tend to explain sexual disorders in terms of an anxiety-based defence mechanism aimed at influencing once-distorted relationships. From the cognitive-behavioural point of view, psychosexual issues are construed in terms of a series of shortages, or incompetence, that is, as a psychosocial deficit in functioning.

The psychodynamic aspect of the therapy is focussed on character problems that arise in the context of interpersonal relationships. Such a relational approach is not confrontative and is based on the use of a therapist-patient relationship as a means to induce a change in the character. Another psychodynamic approach, namely, the restorative-nurturant one, is based on a relationship to an object, i.e. the therapist who offers the patient an emotional-corrective experience. A maturation process is initiated when the therapist triggers transference states that are narcissistic or self-object in nature. Permanent and responsible assistance of the therapist who is an example for the patient to follow is essential then. The relationship between the analyst and the patient (transference-countertransference matrix) causes the most effective resonance in the patient's functioning.

The modern analytic bonding and attachment theory maybe also helpful in understanding the nature of sexual development and how adult relationships function [6]. According to the modern approaches at least four bonding styles maybe distinguished: avoidant (insecure), ambivalent (resistant), disorganized and assertive (secure). Patients with the experience of problems in their sexual life could be characterized by the first

[1] NEST stands for for The New Experience for Survivors of Trauma, an international society of therapists that emerged out of The International Institute of Pregnancy Loss Child Abuse Research and Recovery, a team which was led by Philip Ney in the 1990's.

three styles. People who exhibit a secure attachment style tended to be involved in relationships characterized by greater interdependence, trust, commitment and satisfaction.

The cognitive-behavioural therapy involves essential training and educational - elements which are important in treating patients of this kind. The following procedures are particularly useful: aversion therapy, self-control and self-observation techniques, controlling stress on the cognitive-physiological-behavioural ground. Also, work on restructuring the cognitive process is crucial here.

In the integrationist approach, which is recommended for sexual issues, the following notions are important, apart from those mentioned above: the cognitive-behavioural protocol, in particular, the elements of self-control, self-report measurement, and core-conflicts analysis as well as realisation of the symptoms through action. An insight into the significance, aetiology, and motives of sexual functioning is also considered important - as well as increasing of the extent to which the patient's ego controls fantasies. Additionally, accessing memory, feelings, and acts is crucial. Homework assignments are recommended as a key component of the treatment. It often leads to modifications in individual patterns of behaviour and efforts towards development of genuine communication between partners. Educational aspects, including the elements of sensitising training, psychodrama and art-therapy, are of great importance here as well. The nature of therapeutic relationship in sex therapy includes non-specific therapeutic factors such as empathic understanding, warmth and caring, trust, respect, encouragement and support, instillation of hope. It should be noted here that according to the British standards [3], for instance, sexual problems of the patient ought not to be seen in abstraction, on the contrary, sexual growing and experiences should be viewed in a broader context of the patient's lifeline and her/his family system.

It should be noted that at least two interesting approaches of dealing with the past sexual life are well described in the literature. Carnes [7] designed an intensive, integrative therapeutic program for sexual addicts. His idea of psychotherapeutic help includes behavioural, cognitive and psychodynamic dealing with the inabilities to stay monogamous, what often results in having many real or virtual sexual partners. Whismans team [8] is dealing with the disadvantageous pair bonding from the past in terms of relationship betrayals such as sexual and emotional infidelity.

In some countries (e.g. in the US) a therapeutic approach in the form of Bible-based counselling, so-called Bible Study Groups, which sometimes uses elements from the cognitive-behavioural therapy is popular [9].

Among various forms of treatment, apart from the individual and the marital ones, group psychotherapy occupies a particularly important place, especially when it comes to persons with sexual disorders which are compulsory in nature, and especially – sex offenders. In a group setting, it is possible to use the group as a self-object which reflects characteristics of persons and communities that have been crucial in the patient's life. Moreover, other patients in the group may help the patient to analyze and experience the nature of her/his rationalisations. It is frequently accompanied by gradual acquiring sense of responsibility for one's own actions and actual accepting existential responsibility relevant to the significance of those actions. It should be also kept in mind that

the patients, because of their disorder, are often alienated in the community and can be given support in the group.

The above-mentioned theoretical approaches are reflected in the group psychotherapy for victims of sexual abuse in childhood [10], mostly women [11, 12]. For sexually abused-children which are diagnosed for PTSD, there are cognitive-behavioural programs [13] – these are sometimes homogeneous groups of boys molested by their own mothers [14]. For parents whose children were sexually abused, there are support groups, too [15]. It should be noted here that all of the above-mentioned forms of psychotherapy often have a character of behaviour therapy, which is to say; they involve a set of symptoms without removing deeper causes and they do not deal with the patient's neurotic context. On the other hand most authors conclude that in sex therapy it is important to focus not only on removing the dysfunction, but also on its internal acceptance, extending adaptation abilities, and improvement of self-evaluation – it is possible to acquire this due to the psychodynamic approach.

However, the authors of the present study have not found in literature any therapeutic programme that would deal with the disadvantageous effects of past pair bonding. This aspect seems to be taken into account only within the NEST approach which combines many of the above-mentioned aspects.

New Experience for Survivors of Trauma – the therapeutic approach for people with the experience of disadvantageous pair bonding from the past

This kind of therapy is discussed in a more detailed way in the article entitled "Group therapy for people with experience of abuse, neglect and pregnancy losses" [16] and in the book titled "Ending the Cycle of Abuse" [17]. Therapy of this kind is directed to persons that experienced violence (sexual, physical, or verbal), neglect (emotional, intellectual, or physical), and pregnancy losses (miscarriage, abortions, stillbirth, neonatal death and others). Clinical observations and research that show the long-term effects of child mistreatment, the effects of pregnancy losses and the psychology of survival were all presented in the article "Abuse, neglect in childhood, and pregnancy losses – their correlations and psychological consequences" [18].

The NEST programme combines ideas and concepts from a number of different approaches: psychodynamic, attachment theory, the Eriksonian model of psycho-social development, cognitive restructuring, behavioural modification, transactional analysis, existential psychotherapy, and systemic therapy. Some designs specific for the NEST approach techniques are also included in the programme. The aim of therapy is to help a person overcome psychological conflicts and relational difficulties associated with her/his past traumatic experiences as well as provide a context where one can learn essential life skills and more adaptive ways of responding to stressful situations. In the programme, a special therapeutic role is played by:

Cognitive-behavioural assumptions: cooperation with the patient in defining long-term and stage-specific therapeutic goals, problem orientation and focus on factors which maintain the pathological situation, confrontation with events and emotions from the past and their integration, learning how to perceive and test thoughts with the use of the method of induction; learning reorientation strategies, such as assertiveness and negotiation of realistic expectations.

Psychodynamic assumptions: studying the relationship between the past and the present and identifying unconscious forces affecting behaviour; the assumption that the transference observed in relationships with the therapist and other persons in the group reflect earlier difficulties in patient's family life; the recognition that behaviour which is not appropriate in regard to an actual situation contributes to the current emotional problems; using the group context as a corrective re-enactment setting, disclosing and interpreting inner-psychic phenomena (unconscious motives, conflicts, ego's defensive mechanisms, resistance and transference), employing the analysis of dreams; allowing for re-enactment; aiming at insight and solving the problem.

Additionally some of the specific therapeutic practices in the NEST programme, facilitating the process, include: homework, role-playing, visual imaginary, letter-writing as a means to initiate reconciliation.

Groups are closed and designed for adult persons of either sex. The NEST therapy lasts for about 8 months, provided that sessions take place every week. The schedule of the therapy consists of 30 to 40 sessions (depending on the group's pace of work) and 3 follow-up sessions which take place 3, 6, and 12 months after the therapy is completed. The NEST therapy is a structured, manual-based, and time-limited group therapy. Separate phases of the programme involve:

Informed consent to therapy and commitment. Recognising defensive mechanisms. Analysing genograms. Facing traumatic experiences. Understanding past events and the connections between these and present day difficulties. Remembering the facts that were repressed and their integration with emotions. Identifying, expressing, and handling feelings of pain, fear, confusion, and anger. Recognising one's own contribution, as well as that of others, to a given trauma. Recognising and analysing triggers of given traumas. Learning adaptive responses to the traumas, such as assertiveness and flight when necessary. Addressing existential issues, e.g. survivor guilt and fostering sense of personal value. Handling the feeling of guilt. Distinguishing it from responsibility, blaming oneself, and contributing. Identification and rejection of disadvantageous mechanisms, masks. Gradual recognition of the central character of self. Experiencing grief and despair – because of what happened or what has never come to existence. Handling the effects of pregnancy loss that may have occurred in the person's life. Process of active forgiveness and reconciliation. Redefining one's relationship to the world, learning true, undistorted part of the self. Attenuating disadvantageous past pair bonding. Celebrating and releasing. The good-bye.

Procedure of pair bonding attenuation

Persons who participate in the therapy based on the NEST programme had frequently experienced neglect, and especially – deprivation of love, affirmation, support, good touch etc. and hence are particularly susceptible to various deformations of sexuality. These phenomena are discussed in detail in the article "The process of forming a pair bond – selected sexual disadvantageous factors".

Raising the issue of previous partners is difficult and embarrassing for the patients. They usually feel shame, guilt, and grief since they do not want others to know how

they used people or were used themselves. At least some of them are aware of the fact that serial monogamy is destructive for them. They recognise that if they hold in their minds too many persons from their past, there isn't much space left for a new person or, as one patient put it, "going to bed with the current partner is, in a way, like going to bed with all the others". They realise that the first sexual experience determines their perspective on sex. Clinical observations confirm that having large number of sexual partners contributes to lack of self-esteem, makes it difficult to take care of one's children, and weakens the capacity for deep intimacy and forming a bond to the current partner.

Therefore, in the NEST therapy patients have the opportunity to work on attenuating past partnership bonds. It also results from the assumption that unless the patients experience grief over the loss of previous relationships, they will have difficulties forming a new one. In creating the programme, an assumption was made that once the past bonds are loosened, patients acquire greater capacity for creating intimacy with the present partner and if they're lonely persons – then they acquire capacity for forming a long-term relationship with a new partner.

It should be stressed here strongly that techniques for bond attenuation are applied during the 9th phase which occurs around the 30th or 35th session, that is, towards the end of the annual intensive therapy. This phase is preceded with a homework assignment in which the patients' task is to look for patterns in the sequential relationships. They will often recognise that they choose a partner who has a potential to help them re-enact unresolved problems from their past. They must try to examine what are the features that attracted, or repulsed, in other persons, because these characteristics are a very accurate comment on who they are.

Subsequently, during a session the patients can use visual imaginary and the resulting therapeutic steps. Visual imaginary is based on a frame articulated by the therapist, which is then filled by the patients with their own images. The objective of this therapeutic step is to enable the patients to experience something they wouldn't experience under full control. Also, this exercise makes it possible to accelerate the internal processes of integration of emotions with the facts that were driven out. What is more, visual imaginary makes it easier for the patients to experiment with beliefs and cognitive processes in their minds. In this case, visual imaginary is a key to an imagined definitive good-bye to a particular past sexual partner. This good-bye is accompanied by an imagined returning of essential objects associated with the past partner. This experience is then recorded by the patient and discussed in the group. What is more, in order to facilitate this they usually return, give away or destroy presents, mementoes, photos, pictures, letters, etc, together with a note explaining why they do so and complete a good-bye.

Methods

The pair bonding questionnaire (PBQ)

The PBQ method is carefully described in the article 'The process of forming a pair bond – selected sexual disadvantageous factors' (hereafter: Paper I). In the current

study, only the elements which concern studying of the process of attenuating past partnership bonds are presented. In this version, the following questions are added:

To what extent did visual imaginaries prove usefulness in attenuating the disadvantageous pair bonding?

To what extent did the process of attenuation increase intimacy between the patient and her/his present partner?

How closely is the patient feeling attached to the present partner now?

Hypotheses

The procedure of attenuating of past pair bonding results in:

– improvement of the relationship with the present partner, understood as a degree of intimacy and a subjective feeling of attachment as well as a more frequent desire for sexual intercourse, greater fidelity to the partner, more frequent orgasms, greater satisfaction with a frequency of sexual intercourse, greater relaxation after the intercourse, greater sensitivity to the partner's needs and better understanding of one's own needs;

– weakening the emotions felt towards previous partners, rarer fantasies and erotic dreams regarding them.

Research procedure

The probands for the purpose of this study were recruited from the patients diagnosed with neurotic stress-related, personality or behavioural disorders and experiencing traumatic events in their past. Those patients were therefore participating in group psychotherapy [16] for people after trauma. The evaluation procedure included a standardized intake interview and psychometric measurements such as: the General Health Questionnaire, Beck's Depression Inventory, Symptoms Check List and Sense of Coherence Scale. The patients were additionally diagnosed before the therapy in order to make sure no diseases were affecting their sexuality or general somatic state of health. The patients included in the study were not given medications that could influence their libido, both before and during the psychotherapy.

The patients were asked to complete the PBQ questionnaire in two different versions at two different stages of the therapy:

the questionnaire I (PBQ I) – to be filled in before the therapy,

the questionnaire II (PBQ II) – to be filled in after completion of the therapy, including the bonds-attenuating procedure.

The reports obtained from the patients were grouped in three categories:

– I.BT – the first group of patients who completed the questionnaire I (before the therapy),

– I.AT – the first group of patients who completed the questionnaire I (after the therapy),

– II.AT – the second group of patients who completed the questionnaire I (after the therapy).

The assessment of effectiveness of the therapy was made in regard to two planes:

– A) Plane I – the assessment of therapeutic bonds attenuation based on the reports from:

– A1.1) The group of patients who completed the PBQ I before the therapy (I.BT, 18 persons)

– A1.2) This same group which completed the PBQ II after the therapy (I.AT, 18 persons)

– A2) Two groups of patients:

– A2.1) One of which completed the PBQ I before the therapy (I. BT, 155 persons),

– A2.2) Second of which completed only the questionnaire II (II. AT, 35 persons).

– B) Plane II – the assessment of specific therapeutic techniques made by the patients from the group II AT (35 persons).

Statistical background [19, 20]

To assess the effectiveness of attenuating the disadvantageous effect of past pair bonding the PBQ I questionnaire was used, as described in Paper I, and the PBQ II questionnaire extended (relative to PBQ I), with questions added assessing the therapeutic process and its quality. As in the case of the study reported in Paper I, respondents answered questions each of which concerned one characteristic, treated as a random variable (probabilistic-statistical description is presented in Paper I). The variables were divided into three groups: basic independent variables, basic dependent variables, and control variables. Depending on their nature, a set of variables was established for which there was no reason to reject the null hypothesis H_0, which says that the empirical distribution is not significantly different from the normal distribution, and another set of variables for which the null hypothesis was rejected. To assess the effectiveness of the therapy, appropriate tests were chosen, depending on the nature of the data (related or independent samples – the plane I) and the type of distribution (whether a characteristic is or is not normally distributed).

Plane I involved related samples and variables most of which were not normally distributed. To asses the effectiveness of the therapy, the nonparametric sign test and the Wilcoxon signed ranks test were used. To evaluate the strength of the relationship between the characteristics under study Spearman's rank correlation was computed.

As for the plane II, to assess the effectiveness of the therapy Wald-Wolfowitz series test or Mann-Whitney U test was used, depending on the type of distribution of the variable Qn, and Spearman's rank correlation or Pearson's correlation coefficient was computed.

Results

Due to too many significant data and outputs, only strong correlations (>0.59) were presented on both planes of the study. The same arguments convinced authors

to exclude from the presentation all statistically significant layers of the results. The significant correlations between Q 1-18 and Q 19-21 were presented. When the significant correlations between those variables were lacking, the appropriate layers were considered, with regard to control variables. For each of those the correlation coefficient was computed, in terms of Q 1-18 and Q 19-21.

Some questions in the questionnaire were treated as referring to a qualitative characteristic. The variables associated with those questions were used as control variables (e. g. form of contraception used, type of intercourse, level of education, status of the relationship, and the like) which were used to form layers for two-way cross-classifications in regard to basic variables. Depending on the nature of variables, relevant statistical measures were used. Because of a relatively small proportion of men in the case of the two planes, the results are presented for the group comprising both men and women. The analysis of the case of group of women only yields similar conclusions.

To test the hypotheses (H_0: Qn is normally distributed – and H_1: Qn is not normally distributed) the χ^2 test (when the number of observations was more than 100), the W. Shapiro-Wilk test, or the modified Kolmogorov-Smirnov test was used.

Table 1

Results of fitting normal distribution to the empirical distribution – p-value

The Question		Before the therapy p-value	After the therapy p-value
Q 1.	the age of sexual initiation	0.00	0.00
Q 2.	sexual abuse	0.00	0.00
Q 3.	pornography	0.01	0.01
Q 4.	the quality of sexual life	0.06	0.39
Q 5.	the number of sexual partners	0.00	0.00
Q 6.	the frequency of erotic fantasies about the current partner	0.03	0.03
Q 7.	the frequency of erotic dreams about the current partner	0.00	.001
Q 8.	the desire for sexual intercourse with the partner	0.01	0.01
Q 9.	thoughts of sex with someone else while having sex with the current partner	0.00	0.00
Q 10.	intimacy of sexual life	0.00	0.01
Q 12.	the frequency of orgasms	0.01	0.01
Q 13.	satisfaction with the frequency of intercourse	0.00	0.03
Q 14.	easiness of being stimulated by the partner	0.00	0.00
Q 15.	the frequency of feeling relaxed after the intercourse	0.01	0.01
Q 16.	the feeling of being cherished by the partner	0.02	0.00
Q 17.	sensitivity to the current partner	0.01	0.00
Q 18.	partner's sensitivity	0.01	0.04

The source: personal elaboration

Plane I

Table 1 reports results of fitting normal distribution to empirical data on each of the relevant characteristics Qn, results of which allow us for diversifying the nature of the variables. In the case of Q5 (number of partners) as well as Q11 (fidelity to the partner) identical (maximal in the latter case) values were obtained in both the BT and AT group. The variables were therefore excluded from further analyses.

In the analysis of the plane I, the number of cases did not exceed 50, therefore, the W. Shapiro-Wilk test was employed to test the empirical distribution for normality. The null hypothesis of normality of the empirical distribution was rejected when the p-value for a variable was less than .05. As the figures in Table 1 show, only Q4 was normally distributed. A similar effect was observed when the values of the difference (BTnn – ATnn) assumed by each variable under study were taken into consideration. The Student related-samples t test was used to assess the effectiveness of the therapy in the case of Q4 and in the remaining cases, from Q5 to Q18 and from Q19 to Q21, nonparametric Wilcoxon signed ranks test (based on variables measured on an ordinal scale) was employed. The results of the test are shown in Table 2.

Table 2

The results of the Student's t test and Wilcoxon's pair test

Differences — related samples	Mean of differences	Standard deviation	Standard error of the mean	Statistics value	p-value
BTQ4 – ATQ4	**-0.611**	**2.02**	**0.48**	**-2.57**	**0.020**
BTQ6 – ATQ6	-0.397	1.90	0.45	0.879	0.379
BTQ7 – ATQ7	0.000	0.98	0.23	0.253	0.799
BTQ8 – ATQ8	**-1.728**	**2.28**	**0.54**	**2.225**	**0.026**
BTQ9 – ATQ9	**0.834**	**2.10**	**0.49**	**2.542**	**0.011**
BTQ10 – ATQ10	0.502	1.99	0.47	1.089	0.276
BTQ12 - ATQ12	0.057	2.67	0.63	0.639	0.523
BTQ13 – ATQ13	**-0.888**	**2.77**	**0.65**	**3.462**	**0.001**
BTQ14 – ATQ14	**0.945**	**1.13**	**0.27**	**3.516**	**0.001**
BTQ15 - ATQ15	0.002	2.69	0.63	0.260	0.795
BTQ16 - ATQ16	-0.311	2.48	0.58	0.449	0.653
BTQ17 - ATQ17	-0.011	1.87	0.44	0.305	0.761
BTQ18 - ATQ18	-0.633	2.69	0.63	1.255	0.210

The source: personal elaboration. The statistically significant difference was bolded.

When p-value is less than .05, there is a statistically significant difference between the values of a characteristic under study before and after the therapy. Negative value of the difference indicates an increase in the value of the characteristic after the therapy. Positive value of the difference, in turn, reflects decline in the value assumed by the

characteristic after the therapy was completed. Therefore, it may be concluded that after the therapy there was a significant:

- increase in the quality of sexual life;
- increase in the desire for intercourse with the partner;
- decline in the frequency of thoughts about sex with another partner while having sex with the present one;
- increase in satisfaction with the frequency of vaginal intercourse;
- decline in the easiness of being stimulated to erection by the present partner.

This article focuses on the factors which are particularly important for assessing the effectiveness of the therapy, that is:

- the effect of visual imaginary on attenuating disadvantageous effects of past pair bonding (Q19);
- the extent to which the disadvantageous pair bonding are attenuated and the increase in the intimacy with the present partner (Q20);
- the current strength of attachment of the patient to the present partner (Q21).

In Table 3, basic mentioned above features of the variables are shown.

Table 3

Basic characteristics of the variables: the effectiveness of visual imaginary (Q19) and the evaluation of the therapy

	Q19	Q20	Q21
N	18	18	18
Mean	6.18	4.82	6.76
Variance	3.94	3.41	4.03
Standard deviation	1.98	1.85	2.01

The source: personal elaboration

To assess the strength of the relationship between the variables Q19 to Q21 and the bond-shaping factors which are discussed in Paper I, two types of correlation are computed (as indicated in section "Statistical background"): Pearson's correlation coefficient and Spearman's rank correlation for each pair of variables. Moreover appropriate correlation measures for the variables in regard to each layer constituted by the control variables were also computed. To illustrate, the control variable of education assumes any of the three states: primary, secondary, and higher, therefore, it constitutes three layers. The strength and the direction of the relationship between variables, e. g. Q3 and Q 19, are then computed in regard to each of the layers, that is for the group of persons with primary, secondary, and higher education, respectively.

The analysis of the effectiveness of visual imaginary and its correlation with the bond-shaping factors

This section of the article presents findings regarding the relationship between variables Q1 to Q3 and Q4 to Q18 in regard to layers constituted by the control variables.

Each of the listed relationships is followed by a number which indicates the value of the appropriate correlation measure.

The patients who finished the therapy rated **visual imaginary** (Q19) as being the more helpful in attenuating the disadvantageous effects of past pair bonding,

- the more frequently the patients were exposed to pornography (in particular, if they used natural family planning, coitus interruptus or no contraception at all: .76);
- the more frequently the patients had sexual fantasies about the current partner: .63;
- the more frequently they had erotic dreams about the current partner (among the patients without psychiatric or gynaecological history: .77);
- the more frequently they had desire for sexual intercourse with the current partner (among the patients feeling love and hate for the current partner: .63);
- the more susceptible they are to stimulation by the current partner: .63;
- the more frequently they were relaxed after the intercourse: .64;
- the more sensitive they were to the partner's sexual needs: .66.

The process of attenuating the disadvantageous effects of past pair bonding (Q20) was rated as resulting in the greater amount of intimacy,

- the more frequently the patients were exposed to pornography (among unmarried patients: .99);
- the more frequently the patients had desire for sexual intercourse with the current partner (among those: – who didn't have erotic dreams about previous partners: .70; - having sexual intercourse 0 to 1 times a week: .70);
- the less intimate their sexual life had been (among those: - without psychiatric or gynaecological history: –.61; – without any venereal problems: –.62; – without erotic dreams: -.64);
- the less faithful the patients were to the current partner (among those: - with higher education: -.68; - those without erotic dreams about a past partner: -.76; - the unmarried: –.80; – in relationship for less than one year: –.70; – that had used condoms, spirals or had been sterilized: –.68);
- the more susceptible they were to sexual stimulation (among those: - without psychiatric or gynaecological history: .60);

After therapy, the patients felt the stronger attached to the current partner (Q21),

- the earlier they became sexually active (among those with higher education: .79);
- the higher they rated the quality of sexual life (among those: – the married: .60; – those in relationship for more than one year: .78);
- the more sexual partners they had: .60;
- the more frequently they had sexual fantasies about the current partner: .61;
- the more frequently they had desire for sexual intercourse with the current partner .79;
- the less frequently they thought about someone else while having sex with the current partner: -.61;
- the more intimate their sexual life had been (among those: - without sexual problems: .62; among users of natural family planning, coitus interruptus or not using contraception: -.60);

- the more faithful they were to the current partner (among the engaged and those in the pre-marital relationship: .96);
- the more frequently they had orgasms: .63;
- the more satisfied they were with the frequency of sexual intercourse: .66;
- the more susceptible they were to being stimulated by the partner: .74;
- the more frequently they were relaxed after the intercourse: .65;
- the more frequently they felt the partner was responsive to them: .73;
- the more sensitive they were to the partner's needs: .73;
- the more the current partner was sensitive to a patient's sexual needs: .67.

Plane II

Plane II was initially assumed to concern a comparison of the two groups of patients described in the introduction to the section 'Research procedures'. As in the case of plane I, in order to analyse the effectiveness of the therapy, relevant hypotheses were tested which concerned variables Q4 and Q6 to Q18 that were related to the BT and AT groups, respectively (nonparametric tests for two independent samples: the Mann-Whitney U test and the Kolmogorov-Smirnov test, as nonparametric alternatives to Student's t test, and measures of association for ordinal variables: Spearman's rho and Kendall's τ). Although the variables under study obtained higher, relative to the first group, values in most cases, both in the group comprising women only and in the group comprising all patients (the group comprising men only was not analysed separately because of too small a number of men in the sample), the result turned out to be statistically insignificant. Therefore, in the remaining part of the paper only the measures of association which specify the strength and direction of the relationship between the variables under study shall be discussed, as outlined in A2 above. As in the case of plane I, empirical distribution was tested for normality. Table 4 reports results of the test with entries in the first column pertaining to the number of question (variable) and the number is the second and third column pertaining to the observed p-values of the BT and AT values, respectively, assumed by the variables under study.

Results fulfilled the criteria of the empirical distribution test and p-value normality distribution. P-value before treatment was always <0.001. P-value after treatment in most cases was also <0.001, in case of Q4 was 0.384, for Q 12 was 0.248, Q 16 was <0.005, for Q 18 <0.04. Only the variables Q4 and Q12 are normally distributed for significant level 0.05.

Thus, with the two independent groups of patients (II.BT, II.AT), an analysis was conducted, similar to that for the plane I, in regard to hypotheses formulated at the beginning of the article.

Analysis of the effectiveness of visual imaginary and its correlation with bond-shaping factors

Visual imaginary (Q19) was rated by the patients who finish the therapy as being the more helpful in attenuating the disadvantageous effects of past pair bonds (*note that results regarding previous partners are given in italics*):

– the more erotic dreams the patients had about the current partner (among those: – without psychiatric or gynaecological history .76; – having sex 0 to 1 times a week: – .77);
– the less frequently they thought of sex with someone else while having sex with the current partner (among those: - *in a [past] relationship for less than a year: – .084; – who had masturbated while in a [past] relationship: –.66)*;
– the more frequently they had orgasms *(among them: – those who rated their [past] relationship as bad: .62)*;
– the more satisfied they were with the frequency of sexual intercourse with the current partner (among those: – with secondary education: .68; – *having vaginal intercourse with a previous partner: .67)*;
– the more frequently they were relaxed after the intercourse: (among those: - with secondary education: .68; – without venereal diseases: .7; – *who rated their [past] relationship as bad: .85)*.

The process of attenuating the disadvantageous effects of past pair bonding (Q20) was rated as resulting in the greater amount of intimacy,

– the more frequently the patients had erotic dreams about the current partner: *(among those having sex 2 to 4 times a week in a past relationship: .73)*;
– the more frequently they had desire for sex with the current partner (among those indifferent as to the current partner: .87);
– the less faithful they were to the current partner (among those: – with higher education: –.69);
– the more frequently the felt cherished by the partner *(among those: – who had masturbated while in a [past] relationship: – .81*; – users of natural family planning, coitus interruptus or without contraception: .61).

After the therapy, the patients felt the stronger attached to the current partner (Q21),

– the less exposed they were to pornography (among those who masturbated: – .62);
– the more (past) sexual partners they had had: *(among those: - who rated their [past] relationship as good: .63)*;
– the less frequently they had erotic dreams about the current partner (among those not attached to the partner at all: .86);
– the more frequently they had desire for sex with the current partner (among those: – who rated their relationship as bad: -.81; - remembering the name of past partner: .6);
– the less frequently they thought of sex with someone else while having sex with the current partner (among those: - treated for gynaecological diseases: -.62; - having erotic fantasies about the current partner: -.65; - not attached to the partner at all: – .86);
– the less intimate was their sexual life (among those: – having erotic fantasies about the current partner: .72; – the engaged or in premarital relationship: .75);
– the more frequently they experienced orgasm (among those: – without erotic fantasies about the current partner: .67; – the married: .64; – having vaginal intercourse:

.63; – users of natural of family planning, coitus interruptus or without contraception: .71);
- the more satisfied they were with the frequency of vaginal intercourse .6;
- the more easily they were stimulated by the partner (among those: – not having venereal diseases: .62; – the married: .73; – having vaginal intercourse: .6; – feeling strongly attached to the partner: .68);
- the more frequently they felt relaxed after the intercourse: .76;
- the more frequently they felt cherished by the partner .67;
- the more sensitive they were to the partner's needs (among those: - without psychiatric or gynaecological history: .73; – having sex 2 to 4 times a week: .6; – who felt strongly attached to the partner: .62);
- the more sensitive the partner was to their needs .64.

Discussion and conclusions

The results of the present study suggest that in the course of the NEST therapy there was a statistically significant increase in the subjectively assessed quality of sexual life as well as in the desire for sexual intercourse with the current partner and satisfaction with the frequency of the intercourse. At the same time, there was a statistically significant decline in the frequency of thoughts of sex with another partner during intercourse with the current one. To a substantial extent, these findings can be understood as resulting from visual imaginary and other forms of past pair bonding attenuation.

On the other hand, a decrease was observed in how easy a person can be stimulated to erection by the person's current partner. A possible explanation for this observation may be that the patients who had had many sexual partners in the past are less responsive to the current partner, which may be a result of imprinting of past sexual behaviour - even though they declared greater desire for intercourse with the current partner. This explanation is congruent with Whisman [8] findings from the research of relationship betrayals. What is more, it may have been affected significantly by treating the partner instrumentally, which leads to a situation when a person is stimulated by her/his own imagination rather than by actual physical contact and that has to do with both deprivation and treating the partner as object. This conjecture finds confirmation in the literature [1]. Also, long-lasting masturbation in the past may be responsible for consolidation of vulnerability to self-stimulation.

Visual imaginary was rated as the more helpful in attenuating the disadvantageous effects of the past pair bonding, the more frequently the patients had erotic dreams about the current partner, the greater desire they had for sex with the partner, the less frequently they thought of sex with someone else, the more intimate sexual life they had, the more frequently they had orgasms, the more satisfied they were with the frequency of intercourse and the more relaxed they were after it. These are, then, characteristics of persons who would probably rate their current sexual life as generally good, and therefore as less dependent upon negative situations from the past. Such persons maybe described also, due to the modern analytic attachment theory [6], as

individuals who are mainly characterised by assertive (secure) style of attachment. At the same time, visual imaginary had a statistically significant effect on the patients that rated their previous relationships as bad. In those previous relationships, mutual masturbation and vaginal intercourse were dominant forms of sexual intercourse and these are forms that require a peculiar kind of involvement and particularly close contact between partners. With this idea taken into account, visual imaginary could indeed be an effective means to attenuate previous pair bonding in different groups of patients and, what is worth stressing, this holds for not only the group of patients rating their relationship as unsatisfactory or pathologic.

Very similar relationships were observed in regard to the procedure of pair bonding attenuation as a technique for improvement of intimacy with the current partner. What is important is that persons who were less faithful to the current partner, had orgasms more frequently, and were more satisfied with the frequency of intercourse with the other partner, reported positive effects of the pair bonding attenuation procedure on the relationship with the current partner. It seems that pair bonding attenuation was significant among these patients since they had sexual relationships with other partners while being involved in the current on-going relationship, which made some of them feel discomforted.

Similar observations hold for patients who felt more attached to the current partner after the therapy. In regard to these persons, it can also be observed that their relationship with the current partner was relatively little distorted. And yet they believe they grew even closer to the partner. The group comprises persons who feel more attached to the current partner although they had many sexual partners in the past. Probably, a rebound effect came into play here, which amounts to constant efforts towards building the best relation possible because of the difficult past. The existence of such phenomena was also well described in the literature [5, 7].

Interesting findings were observed among the patients who had been exposed to pornography in the past. In general, these persons profited from the procedure of pair bonding attenuation and visual imaginary in particular, in a proper way, which can probably be accounted for in terms of their imagination being stimulated in a peculiar way, especially when it is taken into account that pornographic sex is imagined in character. Carnes [7] had similar observations in regards to such kind of individuals. The patients with this kind of past appreciated the need for the past pair bonding to be attenuated and reported substantial decline in the frequency of thinking about a past partner during intercourse with the current one.

Regularity can also be observed that in general the process of pair bonding attenuation had its effect on the persons who were in better health condition, i.e., on persons using more beneficial styles and strategies of sexual behaviour. These were, for instance, the patients whose relationship with the current partner was generally good, i.e., the patients who had frequent fantasies about their partner, had great desire for sex with the partner, were satisfied with the frequency of sexual intercourse with the current partner, were more susceptible to being stimulated by the current partner, were more relaxed after the intercourse, were more sensitive to the partner's needs and vice versa. These patients benefited more from the procedure of pair bonding attenuation

and visual imaginary. A similar observation holds for the patients without psychiatric or gynaecological history. A possible explanation for this finding may be that among these patients strong motivation to improve the quality of the relationship with the current partner was accompanied by a low degree of conditioning of patterns of sexual relationships with past partners, which led to the desired therapeutic change.

As for the patients without a psychiatric or gynaecological history in the past, it should be stressed here that visual imaginary had the stronger effect on them, the greater was their desire for intercourse with the current partner, especially, if that desire was accompanied by frequent erotic dreams about the partner and yet the patients believed their sexual life was not very intimate. In this group of the patients, a subgroup may be easily distinguished comprising the patients who were less faithful to the current partner. A possible explanation here may be that in spite of lack of somatic diseases or mental disorder they were sufficiently motivated to use the procedure of pair bonding attenuation, which was probably driven by the hope they would become more faithful to the partner and come to see their sexual life as more intimate.

Those who remembered names of their past partners constitute a group of the patients who benefited from the therapy in a characteristic way. Their motivation and commitment to the therapeutic procedure of this kind may be related to the fact that while they had desire for sexual intercourse with the current partner, they were afraid they could call-out the name of a past partner during the intercourse. Similar motivation for change during psychotherapy was observed in other studies [4, 6, 7, 8]. Interestingly, the persons who had less frequent thought of sex with someone else while having sex with the current partner rated the state of their current relationship as good after the therapy. And this finding is true of a subgroup of the patients who, while remembering the name of a past partner, had more frequent orgasms, were more satisfied with the frequency of intercourse with the current partner and were more susceptible to being stimulated by the partner.

Looking at the patients from the point of view of the frequency of sexual intercourse, it should be noted here that the overall procedure of past pair bonding attenuation was particularly effective in the group of these patients who indicated they had sexual intercourse with the frequency of 0 to 1 times a week. And the improvement of the quality of the relationship with the current partner was reported by those who reported they had the intercourse 2 to 4 times a week. At the same time, the average reported frequency of sexual intercourse declined from 2.5 to 2.07 times a week. This observation may be explained in terms of patients' intensive reorientation regarding their attitudes towards their relationship, which is natural of the psychotherapeutic process.

As regards type of contraception used in relationships with past partners, it is noteworthy that visual imaginary was particularly effective among the persons that had used the natural methods of family planning, coitus interruptus or hadn't used any contraception at all. A possible reason for this finding may be that the patients who hadn't used any chemical or mechanical methods of birth control are more susceptible to mutual hormone exchange [21], consequently, imprinting of sexual experiences is stronger in their case [5, 6]. Therefore, they might have been better motivated to attenuate past pair bonding and thus they achieved better outcomes.

The patients who had had vaginal intercourse in past relationships, and in particular those who were relaxed after the intercourse, were susceptible to being stimulated by the partner and were sensitive to the partner's needs, indicate that the process of pair bonding attenuation had a positive effect on them, improved the relationship with the current partner and increased sensitivity to the partner's needs. A possible explanation for this finding may be that even the persons who had enjoyed satisfactory sexual life in the past, felt the need to improve the intimacy of the relation with the current partner and therefore involved themselves in the process of past pair bonding attenuation. This particular explanation is congruent with other conceptualizations of sex therapy processes [2, 3, 5, 7]. A similar regularity may be observed in the group of persons that had anal and oral sex, especially when the persons had frequent orgasms. The findings may suggest that the form of sexual intercourse doesn't differentiate the outcomes of the procedure of pair bonding attenuation.

Moreover, it should be stressed here that persons who became sexually active earlier, and therefore in some cases had more sexual partners, feel more attached to the current partner after the therapy. The magnitude of these past sexual experiences was probably another factor that motivated them to work on attenuating past pair bonding.

The integrative therapeutic programme of NEST, which utilises, amongst others, the cognitive-behavioural and psychodynamic assumptions, proved the effectiveness in attenuating the disadvantageous pair bonding in order to help the patients to get closer to the current partner. This seems to have been achieved by patients' experience of the emotional-corrective influence of the therapeutic group as well as applying the specific technique of visual imaginary. To help a patient build a good relationship to her or his partner, visual imaginary may be worth applying, as it is particularly effective in regard to persons with the experience of pornography, those remembering the name of a previous partner and those less faithful to the current partner. According to the authors of the present paper, these findings may inspire practitioners of psychotherapy. It should be noted, however, that even relatively healthy persons benefit from the procedure. This therapeutic technique undoubtedly helps the patient to restructure his or her beliefs and makes it easier to run cognitive-behavioural experiments regarding other ways of handling problems associated with the current partner.

It can be also assumed that if the patients actually gave back letters, pictures, and gifts to their previous partners, this would support the whole process. Certainly, it should be studied in future research.

The objectives for future research, which would go beyond the limits of the pilot study of the present paper, should also include larger and more representative samples, since the sample's small size was, apart from the questionnaire which is relatively little known and therefore difficult to be compared with other ones, one of the most serious limitations of the present study.

Finally, it should be strongly stressed that the techniques for pair bonding attenuation ought not to be applied separately from other ways of helping the patients. The effects are definitely much better when the whole process is a part of a complex therapy aimed at restructuring personality traits.

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