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Avicenna Academy: A Lost Trace of a Historical Movement
Isfahan, from 1024 to 2015

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Workshop in the Philosophy of Medicine for the National Iranian Medical Students Olympiad

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Report

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On the 4th of February 2015, the Iranian Ministry of Health and Medical Education hosted a 1-day workshop on the philosophy of medicine. This workshop was the first in a series of workshops the aim of which is to open interdisciplinary dialogue between medicine and philosophy. The aims of this workshop, organized by the Department of Education of the Iranian Ministry of Health and Medical Education, were to increase understanding of the key issues in discussions on health, disease, medical thinking, and clinical judgment.

The workshop was attended by 60 participants who were faculty members of medical schools all over the country with a wide range of specialties from surgery to biochemistry. They represented their own university, and committed to train and prepare medical students to enter the Olympiad.

The workshop was divided into 2 sessions and 4 topics. Each of these sessions was briefly introduced by one expert and followed by 45 minutes of chaired plenary discussion. The topics discussed consisted of 2 on ontology of medicine and 2 on medical epistemology.

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In this paper, I report on the content of this workshop, summarizing the introductory talks as well as the content and outcomes of the subsequent discussion. Moreover, 4 detailed papers, each based on one of the presentations given at this workshop, will appear in the future issues.

Dr Alireza Monajemi, Head of the Scientific Board of Philosophy of Medicine Chapter in the Olympiad, opened the day by explaining the structure and goal of philosophy of medicine in Olympiad. He argued that many physicians and other healthcare providers are involved in health care, but too few of them critically reflect on their own practice. The philosophy of medicine chapter in the Olympiad aimed at introducing critical philosophical reflection to medical schools and highlighting its importance in medical research and practice. The scientific Olympiad for the students of medical sciences was designed with the aim of motivating students in different majors of medical sciences to acquire reflective and critical thinking skills on different medical issues that ultimately improve healthcare. (Adibi, Hadadgar, Haghjooy Javanmard, Monajemi & Hadizadeh, 2009; Adibi, Hadadgar, Hadizadeh, Monajemi, Eftekhari, Haghjoo Javanmard, et al, 2011; Monajemi, Arabshahi, Soltani, Arbabi, Akbari, Custers, et al, 2012).

Session one: Ontology

The first session was dedicated to ontology of health and disease. The first speaker in this session, Dr Hamidreza Namazi, faculty member of the Medical Ethics and History of Medicine Research Center, Tehran University of Medical Sciences, Tehran, Iran, productively revealed that the conception of health and disease is far from straightforward. Historically, there have been multiple ways of establishing disease. He explained each disease conception and clearly showed its implications in diagnosis and management of the diseases.

In the second talk of the session, Dr Goli, Daneshe Tandorosti Institute, Isfahan, Iran, argued that the time has passed when we could draw a clear line between medicine and philosophy. He sharply discriminated biomedical paradigm from bio-psycho-social paradigm, and explained the implications of each paradigm in clinical practice. He successfully demonstrated that each type of medical practice is deeply influenced by its own philosophical view.

Session two: Epistemology

The second session of the day focused on the epistemology of medicine. The questions of what constitutes a medical thinking and what is the nature of clinical judgment and decision making, were also touched upon.

Dr Ahmad Reza Hemmati Moghaddam, Institute for Research in Fundamental Sciences (IPM), School of Analytic Philosophy, Tehran, Iran, introduced this topic by defining the concepts of epistemology in general. He explained the basics of the Bayesian approach in medicine and effectively showed its applications in everyday clinical practice.

The second speaker in this session, Dr Alireza Monajemi, faculty member of the Philosophy of Science Department, Institute for Humanities and Cultural studies, Tehran, Iran, began by introducing two major conceptions of medicine in the philosophy of science tradition; medicine as science versus medicine as arts. He concluded that medicine as science is the base of evidence-based medicine, whereas the medicine as art view is the base of narrative medicine.

Conclusion

The workshop revealed a considerable shared concern among speakers and participants about the strong link between philosophy of medicine and medical research and practice. There was a misunderstanding about the domain of philosophy of medicine among participants, as some equated philosophy of medicine with medical ethics, while others reduced medical philosophy to psychological and social aspects of health and diseases. Linking medical philosophy to clinical practice helps healthcare practitioners to gain a better insight on this domain.

Conflict of Interests

Authors have no conflict of interests.

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Memento Mori and Modern Medicine: A Study of the Artwork of Damien Hirst

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Theoretical Study

Abstract

Death from the biomedical standpoint is a negative and technological issue. We need to be aware of death in order to have an authentic life and medical practice. Some philosophers and artists have shed some light on this dark side of modern medicine. This article is an interdisciplinary discussion on some of the conceptual art works of Damien Hirst which are focused on death and medicine. Hirst's installations and his critical point of view, which we have discussed in this essay, are some examples of how contemporary art can bring medical care closer to real-life human concern and disclose some ontological aspects of medical practice.

Keywords: Death, Modernity, Medicine, Ontology, Damien Hirst

"There is still something uncanny in the silence…"
Hans-Georg Gadamer
The experience of death, p: 66

"I can't understand why most people believe in medicine and don't believe in art, without questioning either."
Damien Hirst

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Introduction

Death, traditionally, is considered as the end of medicine and thinking about death is entrusted to theology and metaphysics. Even thinking about death is a marginal experience which leads us to encounter our existential condition in the word (Yalom, 1980).

Some thinkers and artists try to explore this condition without reducing the solemnity and ambiguity of death. Damien Hirst is one of the prominent artists who shed some light on the main topics of medical discourse; illness, death, and drug and medical equipment.

His aesthetic and critical view could be helpful and inspiring for health care providers.

The present text is a collective reading about the works of Damien Hirst, contemporary British artist, due to the displaying of his works in Tehran Museum of Contemporary Art, Iran, entitled 'Pioneers of Modern British Sculpture' in February 2003. Damien Hirst was born in 1965

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in Bristol, England. He spent his childhood with his mother and stepfather. He first studied fine arts in Leeds College of Art, and then, in Goldsmiths College, University of London, and graduated in 1989. During his university years, he and 16 of his classmates established an exhibition called 'Freeze' in an abandoned warehouse; an exhibition which has now become a legend. Since then, different works of Hirst, such as paintings, sculptures, and installations, have been displayed in Europe, America, and Iran. The main theme of his work is the confluence of death, life, and illness. The unconventional imagination and strange metaphors of Damien Hirst have rendered art critics speechless each time with a new strategy. They have named him the most controversial living British artist and the worthy successor of David Hockney. Our incentive for collecting and writing a text regarding the abstract works of Damien Hirst was his poignant readings of modern medicine in his sculptures, posters, and installations (see http://www.damienhirst.com/the-physical-impossibility-of).

Unfortunately, the major creators of modern medical discourses, physicians, have rarely criticized and assessed the principles and rules of their specialized fields. It seems that the compact nature of this knowledge has not provided them the permission and opportunity to contemplate. However, scientific and cultural seismic logs have recorded dangerous tremors in the figure of the medical paradigm for decades. Foucault (1975) has stated that the organization and establishment of modern medicine was provided by silencing other scientific and cultural fields. However, presently, from within that silence, we are observing the emergence of images, texts, sounds, and imaginations that not only have slowly penetrated into the self-sufficient and self-referential myth of medical knowledge, but, by offering parts of their silence to this knowledge, have provided the opportunity for hesitation and doubt for the masters of this field of 'science'. The remarks of cultural philosophers, literature of the novelists, and works of the artists have illuminated the medical paradigm each time with a different perspective and gradient. Damien Hirst, in his collection of unconventional and controversial works in the final two decades of the twentieth century, is one of these sounds and imaginations raised from the daunting silence. The cycle of life and death, modern medicine, and the category of medication and treatment are among the predominant themes of his works.

The experience of death, which has been marginalized from modern culture and hidden from sight, has reappeared at the center of life due to the natural imagination of. Gadamer (1996) has explained the denial of death by modernity follows: "It is not only that the funeral procession…..is something that has disappeared from the life of the town. The real depersonalization of death reaches deeper still in the modern hospital. Alongside the loss of any public representation of what takes place, the dying and their relatives are removed from the domestic environment of the family. Death is thereby adapted to the technological business of industrial production.".

One of Hirst's controversial installations is the display of animal corpses in glass cubes using preservative fluid. Installations that are sarcastically called 'Hirst's natural history museum'. Encountering these dead animals suspended in their transparent environments evokes in the observer's mind the forgotten thought of death and destruction, in the term "Memento Mori".

The latent awareness of death in these works is one of the factors differentiating humans from animals. Gadamer (1996) considers the categories of awareness of death and language as two fundamental features of humans. He considers the awareness of death, compared to language, as even more authentic and longstanding. However, the awareness of death

is the context of intellectual repression in modern culture. Death, from the perspective of modern thinkers, is a marginal and insignificant problem, to the extent that it can be said that thinking about it is entrusted to the arts, literature, psychoanalysis, and theology. Moreover, it seems that writing about it has a 'non-philosophical' characteristic. Although in the opinions of Tolstoy, Freud, and Bultmann more can be found on death than other topics in the writings of analytic philosophers who write about logic and cognition (Ahmadi, 2002). It seems that modern philosophy has not considered the experience of death as a worthy experience, but as a difficulty that has been solved and forever cast aside. The awareness of death in modern philosophy might be the forgotten death experience. This philosophy has never sought confrontation with hidden perspectives in the categories of nothingness and absence. This frozen awareness of death has rarely attempted to return dynamism and blood flow to its awareness. However, if this experience has forever been suppressed in modern thoughts and philosophy, why have we observed its presence in literature and modern art works in many different forms?

From the literature of Nietzsche and today's philosophical contents we have learnt that the components of a binary opposition, when encountering each other, are recognizable and distinct. Therefore, death is not the end of life, but its explanation and sign. By equalizing death and life, that which can be observed from the awareness of death is the 'courage to be'. This awareness of death is neither a faithful vision with the ambition of supernatural flight, nor a modern vision seeking to freeze 'death and awareness'. Perhaps the appearance of this passionate awareness of death can be found in the branches of modern art. Nevertheless, to what extent has modern medicine, along with other sciences of this century, been effective in the latency and suppression of thoughts of death? Death is the internal structure of the universe and the background music of medicine (see: Focault 1975). However, modern medicine has not attempted to listen to that music. Moreover, while it has emptied it from any vision, it has not replaced it with any other perception. Referring to death, like referring to any other taboo, is done with signs, silence, and other nonverbal gestures. Death, with the first dissection in the history of medicine, had an epochal role in the 'birth of clinics' and the appearance of modern medicine. However, the crucifixion of death in the lifeless body of men and on the dissection table by a physician's mind has pushed into oblivion its ontological dimensions. A physician does not normally know much more than a normal person about the meaning of death and his knowledge is limited to the methods and actions that can postpone it. Does Damien Hirst not want to return the courage of thinking about death to his readers while revealing the transformation of death, and is not a dimension of his criticism of modern medicine related to the lack of courage regarding the thought of death?

Hirst, in an installation named 'A Thousand Years' displayed the head of a cow in a glass cube this time without preservative fluid. What he displayed was the process of destruction and collapse. His work was a deconstructive movement to reveal the meaning of death in an unexpected environment. He deconstructed the environment and what would generally occur in silence and hidden under the ground was brought onto the surface and revealed. His work had brought death from its unconscious darkness to the light of consciousness. Nonetheless, this work, with its bitter sociocritical dimensions, sparked many political controversies.

Hirst (1996), in another work entitled 'Some Comfort Gained from the Acceptance of the Inherent Lies in Everything', made transverse cuts from the head to the tail of a cow and displayed them in separate glass cubes next to each other but out of order. His work showed

dispersion and separation while the title of this work noted the comfort in the continuity of things. However, the main point of the work was the entropy, as the underlying construction of every coherence and unity. This intangible entropy is, on the one hand, the memory of chaos, the chaos before creation and, on the other hand, the concrete and organized foundation of life, which suddenly appears and disappears into oblivion by death (see: http://www.damienhirst.com/some-comfort-gained-from-the-a).

Hirst (1991), in another work entitled 'The Physical Impossibility of Death in the Mind of Someone Who is Alive', displayed a floating carcass of a 12 feet shark in a glass cube with preservative fluid. Charles Hall, contemporary critic, wrote of this work: "The floating shark, seemingly in balance and harmony, is confined in a container that is created for it. This intuitive visualization is an allegory of compromise of any hope and belief in the system the base of which is an unfair struggle to survive. Damien Hirst, with no hope of establishing order in life, is directed towards eternal death, the most constant fact is death." (Lucie-Smith, 1995).

The approach of Damien Hirst towards concepts such as death, illness, and medicine is not a clear approach. His works are paradoxical and ironic. Moreover, His works do not aid in solving today's complex problems. The method of naming his works and other ironies that lie in the content of his works and the environment of the exhibition are the unique features of Hirst's works. His works, as he has noted himself, do not require an observer with exploratory intelligence. With his works, he is trying to change the mind and body function of the observer; a change from an intelligent discoverer to a suspicious participant. These works need experience not discovery. The contemplation of the body's existence, whether human or animal, in Hirst's works might be the awareness of death in his works. In reality, if we are supposed to live with knowledge of and by referring to the body, it is critical that we are aware of the inevitability of the death of our body. It is in the perspective of this fearful knowledge regarding Hirst's works that we ask ourselves if this decaying body belongs to us or this floating animal. In this strange suspense, where and what was the point of difference between me and that animal?

Hirst (1990), in 'A Thousand Years', has displayed two large glass cubes beside and in order with each other.

In one cube we observe the actual conversion of insect larvae and worms to adult insects, and then, their feeding from a dead cow head. In another cube, we observe their burning and dying due to their contact with a hanging Insect-O-Cutor in the glass area. Glass is the element most favored by Hirst in illustrating death. He described glass in a discussion as: "…hard and dense, but does not have anything to hide. It shows you, but does not provide it to you. It is dangerous but bright and clear." (Hirst, 1990). This delightful paradox exists in each layer of Hirst's works, and continues until it also deconstructs the work itself. It seems that mortal art is the most appropriate medium for the emergence of the death-focused imagination of Damien Hirst (See: http://www.damienhirst.com/a-thousand-years).

The position of pharmacy and chemical medications in modern culture and their role in modern medicine are other dominant themes of Hirst's works. Among these provoking works is the installation of 'Pharmacy', which was displayed for the first time in New York in 1991. At first glance, these works may be considered as a clear criticism of medication and their adverse effects. Nevertheless, it is not believed that Hirst would condemn medications because of their harmful effects, because any intervention has hazards and complications. We might be able to extend his critical reading of medications from the scope of their function to the position of their meaning. It seems that medications, in modern culture, have extended

the boundaries of their role, and have gained metaphorical and metaphysical roles. In these works, medication is both panacea and poison, therapeutic and destructive. These abstract works show how pharmaceutical companies, by creating a meta-reality, instead of meeting the existing needs, have created a need and attempt to present it as original and real. In fact, medications have departed from their scope of function in treatment and have entered the cycle of human needs. What you choose to wear, eat, and as your hobby, is equivalent to the medication you choose to use (see: http://www.damienhirst.com/exhibitions/solo/2009/pharmacy-baltic).

The idea of 'pharmacy' in Hirst's installation is a range of multiple meanings or a meaningless range. Hirst, with a deconstructive approach, is seeking to suspend the perplexity of language and visual signs. He has tried to represent the exact medical occasion by changing the location of the medication shelves from a pharmacy to a museum without disturbing the visual arrangement of the pharmacy, and color, graphic, and form of medication boxes. However, by entering anomalistic objects, such as stools on which honey jars are placed or Insect-O-Cutor hanging from the ceiling, into the pharmacy environment, it seems that the respectable status of the medications have been challenged. The form and color of the objects, and the appropriate relation among them in the pharmacy environment induce an icon-based reading. In the wake of such an induction, the four same size jars containing colorful liquids can be mentioned, which are the symbols of traditional medication and perhaps alchemy. They apparently are also an allusion to the four main elements of water, air, soil, and fire. As Damien Hirst has stated, the electrical insecticides can be a symbol of divine power that, without any pity or selection, removes the insects from the circle of life; insects which have been led to the pharmacy due to the tempting presence of honey jars (medication boxes), like the visitors of the gallery or museum (Hirst & Burn, 2001). In this installation, bowls with honeycomb are placed to attract flies, which are then eliminated by an Insect-O-Cutor. The honeycombs represent the natural world and contrast with the artificiality of the pharmaceuticals.

This sterile, sparse, clean space is at the same time reassuring and ominous. It may speak of help and recovery or of decay and dependence (Dominiczak, 2011).

The hidden paradox and metaphors in the other works of Hirst are also present in this work. Is honey a symbol of the deceptive and deadly aspect of modern medicine, or a symbol of the natural world against the 'civilized' or artificial world created at the hands of humanity? In this pharmacy, each medication shelf can be a symbol of the human body, because the medication boxes in each shelf are placed from top to bottom in the same order as organs in the human body. Therefore, medication related to the illnesses of the brain and nerves are placed on the top shelves. Then, respectively, the medication related to cardiovascular illnesses, diseases related to the liver and biliary system, and etcetera is placed. Nevertheless, no tablets or capsules are found in Hirst's pharmacy. The boxes of medications are empty. What attracts customers and their trust is probably not the knowledge of their effectiveness and adverse effects, but their attraction, and colors and forms in different packages. Modern medicine, in Hirst's perspective, is a faith-based organization and a powerful authority. The 'scientific belief' imposed by this system has introduced medication as the most powerful savior of humans against disease and the most trusted guardian of his life against death. People do not think for a moment about the adverse effects of medications, and wholeheartedly trust the colorful and bright forms of medication, but medicine only postpones death, and with all this I believe that art, compared to medication, is

more therapeutic (Hirst, 2005). Damien Hirst is an artist who has not remained silent about his works, and thus, the symbolic aspects and symbolism that have been mentioned here about his 'Pharmacy' are mostly derived from his discussions. Undoubtedly, a provoking work cannot be drowned in the dilemma of symbolic interpretation and its interpretation possibilities cannot be decreased. Thus, why does Hirst lead his work critics to these constraints? Does he want to debase his work? Is he testing if and when his critics will be deceived? Or, is he ridiculing our seriousness in dealing with his work and calling them contemplative?

Did Hirst, in his 'Pharmacy', have in mind the etymology of the Greek word 'Pharmakon'? Pharmakon is among the words or signs of interminable dispute in Derrida logs. Pharmakon, supplement, hymen, gram, spacing, and etcetera are interminable signs that do not have a clear meaning. They simultaneously reject and approve the two opposite conceptual poles in them; this and that, neither this nor that. Pharmakon not only means poison and medication, but it also neither means poison nor medication. Jacques Derrida, in a conversation with Jean-Louis Houdebine in 'Positions', stated that: "the pharmakon is neither remedy nor poison, neither good nor evil...neither speech nor writing …" (Derrida & Bass, 1982). Like a woman who simultaneously has the pleasure of embracing and hatred of seduction in her arms. Pharmakon and other 'interminable signs' are certainly not able to perform the role of a third part in a dialectical relation "that can no longer be included within philosophical (binary) opposition, resisting and disorganizing it, without ever constituting a third term, without ever leaving room for a solution in the form of speculative dialectics." (ibid, p: 43) With this approach, it can be felt that the idea of 'pharmacy' according to Plato in "Phaedrus" and the idea of 'pharmacy' according to Damien Hirst in the Dallas Museum of Art have specific similarities. In "Phaedrus", Plato used pharmakon in two strategic, but interacting meanings; medication and poison. Hirst's 'Pharmacy' also included honey and chemical medication. An environment, with multiple and paradoxical meanings, that simultaneously spreads absurdity and laughter in itself. The environment of Hirst's 'Pharmacy' is a suspicious environment in which emptiness (nihilism), beauty, sickness, death, anxiety, and laughter are pounding.

In another work by Hirst entitled 'The Last Supper', 13 medication posters in large commercial scales were displayed (see: http://www.damienhirst.com/search?query=The+last+supper).

The color and graphic designs of the posters and the name of the medications are perfectly consistent with their true form. However, what makes the observer suddenly laugh in front of these apparently serious posters is the name of different foods written at the top of each poster with the same hand writing, color, and graphic design of the poster (this is why the names are not seen at first glance). This work creates a biblical allusion where the breaking of bread is replaced by the consumption of drugs, most of which are for terminal illnesses (O'Brien, 2013). it seems that today, drugs are not only feeding, but also blessing us. In this work, the humorous aspect of Hirst is also seen. The observer is faced with an environment in which, simultaneously, the factual and conventional are not betrayed, and loyalty to reality is to the extent that no damage is imposed on the visual forms and signs, but in fact those familiar signs are silently changed from within. It is interesting that Damien Hirst's name, like the name of medication producing companies, shines at the bottom of each poster. Thus, drugs with all their respect and importance as one of the foundations of biomedicine are at a moment flouted. This concord between the name of food (steak, hot dogs, chips, and beans, and etcetera) and medication (amiodarone, morphine,

pyrimethamine, and etcetera) within a work called 'The Last Supper' is a rhythm that warns us of the little distance between us and death due to our 'innocent coexistence with drugs'. Hirst (2005) in a poetic form stated that "I can't understand why most people believe in medicine and don't believe in art, without questioning either."

However, is not the same humor and hidden seriousness observed in this statement present in all works of Hirst? Hirst's piercing gaze to medication and treatment in medicine is not a faithful glance believing in the healing effects of medicine. Instead, it is a painful gaze at the imposition of modern medication and medical instruments on our everyday lives in a breathtaking way. Although Hirst destroys familiar implications in the medication and treatment field, he pays attention to their aesthetic aspects. The rhythmic and consistent environment of the 'Pharmacy', attractive colors, harmonic placing of the medication posters adjacent to each other, and also the attraction and order of the steel medical tools in a work entitled "still" (Hirst, 1994) are evidence of the precision of Hirst regarding aesthetics in medicine (http://www.damienhirst.com/still).

Paradoxical resonance associated with the imagination of Hirst causes the fluctuation of his works between seriousness and humor, beauty and destruction, and nihilism and laughter. A fluctuation which causes turmoil in the gravitational field between two opposite poles in its every motion. Seeking refuge in the healing practice of medicine and, simultaneously, questioning the seriousness of such a practice is the origin of this fluctuation.

Medical knowledge, by disregarding philosophical knowledge and global-environmental relations, with the excuse of professionalism, has turned physicians into thousands of medicine boxes and a variety of advanced diagnostic devices. The doctor's cold, empty, and escaping glance in reply to the patient's concerned look has replaced the meaningful doctor-patient relationship; that meaningful relationship with the whole mental and physical life of the patient, which is also effective on the practitioner's environment. Awareness of death, as the intersection of art and medicine, is the background music of Damien Hirst's works. This music, in its different variations, may be an indication of the different ways leading toward death, and within its long and short silences is a deferment to contemplate the most philosophical and most forgotten therapeutic and ontological dimension of modern medicine, "Memento Mori".

Conflict of Interests

Authors have no conflict of interests.

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Pain, Affect, and Attachment*

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Review Article

Abstract

Various psychodynamic processes may underlie the development of psychogenic pain disorder such as conversion, the displacement of affect, or narcissistic defenses. However, many of the processes suggested are related to a disorder of affect regulation. The term affect regulation in psychoanalytic literature refers to phenomena which are often described by the concept of alexithymia. Empirical observations suggest that alexithymia is correlated to insecure attachment, especially an insecure dismissing representation of attachment. Psychodynamic psychotherapy in psychogenic pain disorder should focus on the reintegration of split-off affects which may provoke intensive counter-transference and which in order to be used therapeutically must be linked to attachment experiences within and outside of the therapeutic relationship.

Keywords: Psychogenic pain disorder, Affect regulation, Alexithymia, Insecure attachment

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The pain prone personality and the psychodynamic taxonomy of pain development

G. L. Engel`s contribution to the concept of the "pain prone personality" (1959) implied "something like a dam break" (Hoffmann, 2003) for the psychoanalytic understanding of the development of chronic pain. In his description of the concept, Engel characterized the biographical conditions and their characterological processing underlying the development of chronic pain; feelings of guilt, where the pain receives the function of an atonement, inhibition of aggressive needs, as well as biographical experiences of suffering and failures, which lead to a masochistic character development. For the first time, with this description, Engel drew attention to the importance of pain experience as a "comprehensive mental regulation system" (Hoffmann, 2003). In spite of enriching the clinical understanding and providing valuable impetus for pain research, as is the case with other psychosomatic symptoms, the assumption of a specific form of personality pathology with psychogenic pain could not be confirmed by empirical research. The reason was not so much that the typology developed by Engel was clinically invalid, but it applied only to a subgroup of patients and described only a part of pathogenetic relevant mental processes.

Therefore, the contributions from Hoffmann

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(2003) and Hoffmann and Egle (1989) are of importance for a taxonomy of pathogenetic processes which underlie the development of chronic pain because they contrasted the descriptive standardization, as occurred under the concept of somatoform pain disorder in ICD and DSM from the early 80s onwards, with a more differentiated description of the clinical spectrum of pain disorders. These thoughts also carry consequences for the psychotherapeutic treatment.

Five principles have been distinguished for the development of psychogenic or predominantly psychogenic pain (Hoffmann, 2003; Hoffmann & Egle, 1989). These are:

1. The principle of mental substitution (narcissistic mechanism of pain development)
2. The principle of conflict relief through body language expressed symbolization (conversion mechanism of pain development)
3. The principle of primary (not based on conversion) transformation of affects into physical stress states
4. The principle of learning processes
5. The attachment concept

For our context, the first three principles are of particular interest. Learning processes play a central role in pain; however, in our view, they relate more to pain chronification than to pain development. According to Hoffmann (2003), attachment security and attachment insecurity determine different forms of illness behavior and interaction in the medical supply system, but engage less in the development of pain itself. In relation to this point, we will present a different view further below. In the following, we want to outline the first three of the abovementioned principles.

In mental substitution, the narcissistic mechanism, the pain takes on a central function for self-regulation. Unbearable and less differentiated stress conditions resulting partly from a chronic discrepancy between the ideal and real ego are tied up in pain. Pain provides protection against a breakdown of the mental order and, in this sense, takes on a "psychoprosthetic or substitution function".

In contrast, the pain in the conversion serves as the relief of a paraphrased conflict finding expression in a body language, and hence, meaningful symptom. Here, too, the relief of a "painful affect" plays a central role alongside defense mechanisms (repression, displacement, consciousness changing and dissociation, identification, and etcetera) involved in the conversion. The conflict content is strongly related to the suppression of aggressive impulses at the level of a triadic (oedipal) development stage. The conversion symptom is simultaneously expression and the last part of a highly structured defense process, not a prosthesis for narcissistic regulation.

The principle of the transformation of affects in physical stress states describes a mechanism of pain development, which has an impact on many musculoskeletal pain syndromes (back pain, tense headache). Due to somatic affect equivalents, Freud (1971) ascribed the symptom formation to actual neuroses and contrasted them with psychoneuroses. Here, the physical symptom equally presents a somatic equivalent in place of the affect, which is not, or no longer, represented in the mental experience. The concept of affect equivalent is related to Alexander's theory of deployment reactions. They are dysfunctionally activated because of an unconscious and unrealized impulse and conflict in the activity part, which leads to a physiological allocation reaction.

Hoffmann and Egle's considerations raise the question of "Upon which structural level the described mechanisms of symptom formation are located?" This aspect is important for psychotherapeutic treatment and deserves a thorough examination.

Conversion is commonly regarded as a form of symptom formation at a rather high structural level. With its genetic roots in a developmental stage in which differentiated defense mechanisms are available and a stable

distinction between self and object representations is established, conversion arises from a mental conflict. On the other hand, the psychoprosthetic function of pain presents a symptom formation at a rather low-level structure. For these pain syndromes, the boundaries between self and object representations are often not clearly differentiated. There are relationship constellations in which the object has a distinct regulatory function for the self (value) experience. Self-images and internal object images are rarely differentiated. The same is true for object perception. Having classified the different types of symptom formation of psychogenic disorders on a scale of four structures, Rudolf (1992) provided a description of this group overlapping with the concept of depressive somatization. The concept follows the observation that a depressive basic conflict often plays a central role in the development of this disorder (Rudolf, 1998).

Finally, the mechanism of affect equivalent can be classified as between the two aforementioned mechanisms of the structural development. It corresponds to the mode that Rudolf refers to as a psychovegetative group. Self-image and object images are stably differentiated, but there are deficits in the representation of affects. These deficits do not only affect individual affects, but also affect groups. This leads to a global disorder of the affect perception described in the literature as the concept of alexithymia.

The operationalized psychodynamic diagnostics (OPD) provides the opportunity to deepen and to specify the structural diagnostics in the field of psychogenic and psychosomatic pain syndromes. Needless to say, there is still a great need for further research in order to validate the mainly overlapping clinical concepts and descriptions, to relate them to common characteristics of the structural development, and thereby, to develop a system which can come to serve as guideline for psychotherapeutic treatment.

Pain and affect

The study of affects has a long tradition in psychoanalytic theory. It begins with Freud's theory of conversion (a conflictual idea is repressed into the unconscious while the energy inherent in the affect "converts" into the somatic). In the various versions of the theory of anxiety, Freud has also dealt with the genesis and function of affects in detail (Freud, 1971). Finally, the psychoanalytic defense theory describes specific mechanisms of affect defense and affect processing. The lack of an affect theory in today's psychoanalysis, therefore, has its limits.

In recent years, the concept of affect regulation has increasingly gained importance in the clinical literature. The reason lies not so much in the fact that it is related to an especially precisely defined or easy to operationalize construct, but the opposite. The appeal of the concept originates rather from the accentuation of the particular significance of affect processing in the development of a multitude of mental disorders, and from the concept itself facilitating the communication between psychotherapists, developmental psychologists, cognitive psychologists, and affect researchers. Affect regulation represents therefore something like a bridge concept between different research fields.

Problems of affect regulation also play a central role in pain patients. They often have difficulty in perceiving affects such as anger and grief which are replaced by pain in the dedifferentiation of the affective experience. This corresponds to the forms of somatization presented above. In the following, we want to share a number of considerations from the perspective of recent affect research on pathogenetic mechanisms of pain development. They will help us to understand and differentiate these concepts better.

Presently, the affect system is regarded as a dynamic modular system (Figure 1). It allows us to ask who, in which situation and based on which disposition, develops which profile of

affective modules (Krause, Merten, Schwab & Steimer-Krause, 1998).

A widespread view within the psychosomatic literature on the somatization theory of affects is the assumption that there exists a proportionally reverted or inverse relationship between the expression of an affect and its related physiological activation (i.e., the components 4-6 and 1-3 of the presented scheme). According to this view, a physiological activation is particularly caused when the affect perception and expression is suppressed. Contrary to this hypothesis of an inverse relation between affect expression and physiological activation, the findings of affect research illustrate that the various modules of an affect need not necessarily be coupled with each other under normal conditions. They rather act relatively independent of each other. The view of the suppression of an affect's component automatically leading to a reinforcement of the "activity" of the remaining modules is not supported by the current research results (Krause 2004). Yet the differential connections between the various modules of the affect allow a clearer delimiting of the above presented mechanisms of pain development from each other.

1. In the conversion, an unconscious (repressed) situational perception in the sense of an affect (anger or rage) is shifted to the arbitrary motoric system and is represented here symbolically encoded (4 to 1).

2. In the affect equivalent, the affect (anger or rage) is presented relatively uncoded in the motoric expressive system without the representation of the associated situational perception, body perception, and affect semantics in the consciousness (of 4 and 5, and 6 to 3). If this process takes place in the vegetative area, we can speak of affect equivalents. If it takes place in the musculoskeletal area, the differentiation of the conversion can be difficult.

3. Finally, an affect can be inhibited in all modules in its development by the mobilization of another affect. Krause (2004) defines this as affect replacement and compares it with the phenomenon of the masked affect expression. A subtype of affective replacement is the affect reversal in which the affect becomes replaced by its opposite (crying by laughter). This process could correlate with the prosthetic function of pain presented in the taxonomy above, in which pain appears as affect replacement instead of differentiated emotions.

The reformulation of psychodynamic mechanisms of pain development in the concepts of emotion research presents the symptom formation in a more interpersonal context. Affects are paradigmatic forms of object-relations regulation with high survival value (Krause, 1998).

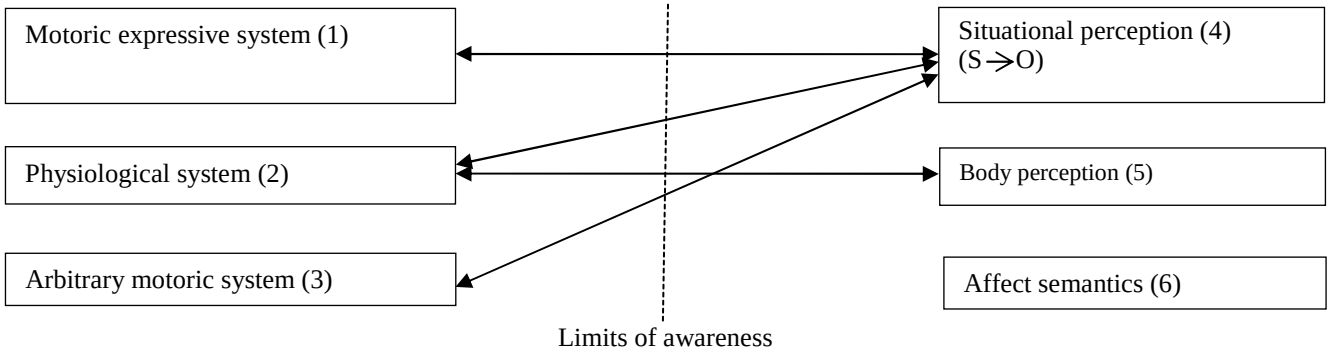

Figure 1. Interconnection of affective modules in an individual (modified based on Krause, 2004)

They have, respectively, a special propositional structure with a self, an object, and a desired interaction between the two (Krause, 1998). Affects serve essentially the social regulation and social exchange. This is why affective expression behavior in pain patients takes on a centrally important behavioral dimension (Bernardy, 2004). We will discuss the relationship between affect development and attachment in further detail below. In the following, we first want to look at the clinical concept of affect regulation-disorder and examine its application to somatoform pain.

For a description of affect pathology, Nemiah and Sifneos (1970) shaped the concept of alexithymia which according to their view is characteristic for psychosomatic patients (Nemiah & Sifneos, 1970). They first understood alexithymia as the inability to communicate and express feelings. A shift in meaning towards inner (interoceptive) problems of experience and the differentiation of emotions (perceptual-cognitive level) took place in later publications. Lacking the mentalization of affects, mainly physical perceptions, diffuse stress states, or undifferentiated feelings replace complex and identifiable emotions in the experience and expression of alexithymia patients. The deficits refer to all affects and are not valence specific; this means, they are not concerned with purely positive or negative affects (Nemiah & Sifneos, 1970; Sifneos, 1987). In a very instructive review on the alexithymia concept, Laireiter (1989) defines the affected aspects of emotional experience as follows:

1. Deficits in the sensory experience core of emotions: The senso-motoric activation along with the emotions cannot be perceived or only undifferentiated.
2. Deficits of cognitive elements surrounding the sensory-emotional experience core: Alexithymia subjects have no or insufficient access to cognitive aspects of emotion schemes such as meaning, thoughts, ideas and imagination (Taylor, Bagby, & Parker., 1997).
3. Deficits in emotional attribution of the perceived physiological change: The physiological feedback cannot be emotionally integrated and instead becomes somatically attributed.
4. Inability to differentiate emotions

Laireiter`s (1989) presentation of the alexithymia concept creates a streamlining and an order of the theory. Like Krause, he bases his concept on a modular theory of affect and defines disorders in the relation of different subcomponents of the affect.

Thus, how do the findings on alexithymia correspond to patients with somatoform pain syndromes? We want to present some findings stemming from empirical research.

According to a review by De Gucht and Heiser (2003), available studies on the connection between alexithymia and the degree of functional physical complaints of different patient groups demonstrate a weak to moderate positive correlation between the total value of the 20-item Toronto Alexithymia Scale (TAS-20) and somatoform complaints indexes. The connection is especially evident for a subscale of the TAS-20 that measures difficulties in the identification of affects (TAS-20, Factor 1). Looking specifically at the studies in which patients with pain disorders were compared to different control groups, the result can be summarized as follows: When comparing pain patients with non-clinical control persons, pain patients prove to be more alexithymic than controls (Brosschot and Aarsee, 2001; Sriram, Chaturvedi, Gopinath, & Shanmugam, 1987). The same is true when comparing pain patients with probands who are overweight or suffer from nicotine dependence (Lumley, Asselin, & Norman, 1997). However, if chronic pain patients are compared with psychiatric patients, higher values arise for the latter than for pain patients (Kosturek, Gregory, Sousou, & Trief, 1998). This latter finding raises doubts about how specific findings on alexithymia in patients with somatoform pain disorders actually are.

Methodological questions about the validity of the presented results concern primarily the measurability of alexithymia with a questionnaire for self-assessment. Only one single previous study applied a further investigative approach from the TAS-20 that is not based on self-assessment. Subic-Wrana Bruder, Thomas, Gaus, Merkle, Kohle, et al. (2002) applied the Levels of the Emotional Awareness Scale in addition to the TAS-20 (Lane, Quinlan, Schwartz, Walker, & Zeitlin, 1990). This study method allowed the distinguishing of patients with somatoform disorders from psychiatric patients, namely by lower values of Levels of Emotional Awareness Scales levels of emotional awareness scales (LEAS) indicating a pronounced alexithymia in somatoform patients compared to the clinical comparison group.

Alexithymia can be understood as a form of affect regulation disorder. On the other hand, the concept of affect regulation goes beyond the alexithymia concept. For the theorists considering the development of the ability of affect regulation as the result of a relational process in which, especially, the primary attachment relationships play an important role, the question of affect regulation is more fundamental. It is concerned with the manner in which infants advance from a state of co-regulation to self-regulation (Fonagy, Gyorgy, Jurist, & Target, 2002). We, therefore, want to discuss some theories and findings that shed light on the relationship between attachment development and affect regulation.

Affect and attachment

The focus of attachment research on questions of affect theory and affect regulation is relatively recent. Fonagy et al. (2002) even assumes that Bowlby himself has not fully recognized the affect regulation as product of the attachment development. However, there has been a noticeable turn in this respect in recent attachment research (Magai, 1999; Sroufe, 1997). It has increasingly focused on the understanding of how the function of affect regulation (as a special case of self-regulation) develops in the interaction and from the initial co-regulation through the primary attachment figure.

In a number of experimental animal studies carried out in the eighties, Hofer (1984, 1987) proved the high specificity of external psychobiological regulatory function in the early development stages.

Hofer (1987) showed that the separation of mammals from their mothers results in complex physiological reactions that apply to the heart rate, body temperature, plasma cortisol, and sleep patterns. Depending on the maturation state of the organism and the available behavioral strategies, reversible or permanent physiological changes are caused by the separation. Particularly relevant to the description of the specificity of the external psychobiological regulatory functions of the mother was the discovery that the acute distress reaction after separation can be stopped under certain conditions, for example by a surrogate mother. Hofer (1987) investigated which sensorimotoric characteristics of the mother and maternal behavior can, respectively, influence specific behavioral and physiological processes triggered by separation. This led to the discovery that tactile, olfactory, and behavioral characteristics of the mother (heat, milk, smell, and etcetera), respectively, caused different physiological reactions upon withdrawal. Hofer, 1984 described the specific stimuli becoming effective in the mother-child interaction as psychobiological regulators. They exert a direct influence on the maintenance of physiological homeostasis in the offspring. Hofer (1987) formulated the hypothesis that there is an increasing internalization of psychobiological regulation functions in species with more complex cortical functions in later development stages, However, this process is closely connected with the acquisition of symbolic functions. Since the internalization is never quite complete, the physiological homeostasis remains, in older age, an open system against external influences (Hofer, 1984; Pipp &

Harmon, 1987).

Some observations of attachment research suggest similar conclusions for the human sector. Spangler & Schieche (1995) found higher cortisol increases during the time of free play in children (aged between 3 to 6 months) of non-sensitive mothers than in children with sensitive mothers (for the construct of sensitivity and its operationalization see Ainsworth, Blehar, Waters, & Wall, 1978; Belsky, 1984; Egeland and Farber, 1984; Grossmann and Grossmann, 2003). Nevertheless, this correlation was no longer verifiable at the age of 9 months. In the sense of Hofer`s theory, the authors interpret that maternal behavior exerts a direct influence on physiological activation in early development. However, its impact decreases with the establishment of internal structures of psychobiological regulation.

Hofer`s proposed development model of internalization of psychobiological regulation functions can be expanded and, as a basic model for the development, can take on other functions of self-regulation, in particular the control of affects. The question of how the modulation and establishment of internal structures of affect regulation comes into being in early mother-child interaction is a key topic of recent attachment research. The clinical significance of the findings primarily collected in observation-scientific grounded developmental psychology lies in the fact that there is ample evidence that patients with chronic pain syndromes (similar to other clinical groups) are often exposed to adverse psychosocial development conditions. The prevalence of sexual abuse, ill-treatment, and deprivation were examined as isolated "indicators" of such a matrix of unfavorable conditions (Egle, 2003). There was clear evidence that abuse, deprivation, and etcetera are common events in pain patients` biographies and that they are involved in the pathogenesis of the disorder in the sense of an increased vulnerability. However, the individual links in the chain of these pathogenetic conditions are not yet clear. Some of the features described above as part of the affect regulation disorder in somatoform patients can yet be better classified by means of attachment theory.

The current view is that the acquisition of competences necessary for the regulation of emotional states, analogous to the regulation of physiological homeostasis, is embedded in the mother-child relationship and takes place during early interactions. Although a newborn possesses inherent and increasingly differentiated mechanisms for self-regulation (Tronick, 1989), it needs external support. He/she cannot control the arousal level without help. The task of the primary attachment figure is to support the infant in the process of developing self-regulation ability (Sroufe, 1997). In this process, mother and child establish an affective communication system (Beebe, Jaffe, & Lachmann, 1992). The external assistance for affect regulation is increasingly internalized in the course of the child`s development. Here, the quality of the early bonding experience is crucial.

Sroufe (1990, 1997) suggested interpreting the early mother-child bond as a "dyadic system of affect regulation". Thus, the child learns to evaluate contexts in terms of familiarity or threat, and acquires strategies for stress modulation (Sroufe, 1997). Other attachment researchers, like Cassidy (1994), support a more functionalist perspective of affect regulation. According to this theory, the child masters emotions by means of an adaptive strategy. Its primary goal is to maintain the relationship with the attachment figure (Cassidy, 1994). Dealing with potentially negative emotions, which could jeopardize the attachment, plays a particular role in emotin regulation. Along this line, binding strategies are largely identical with strategies for the regulation of emotions. Attachment behavior does not only serve as protection from external danger, as originally proposed by Bowlby in the context of behavior-biological assumptions, but it also serves as protection against internal danger, i.e. the endangerment of the relationship to the

primary attachment figure by negative affects. This, for example, becomes evident in the behavior of insecure avoiding attached children during the reunification in the strange situation.

In summary, it can be assumed today that the ability to control affects is of central importance for the developmental, psychopathologic understanding of multiple disorders and that it develops in close entanglement with the attachment system. Although it is highly likely that specific hardware components of the affect system are congenital, modulation processes take place during early mother-child interaction. Their internalization leads to later observed individual differences of affect processing.

Pain and attachment

The relationship between pain and attachment can be analyzed on three different levels.

1. Pain can be understood as sensation and affect with a direct relationship-regulating function. At this level, it is related to the expressive content and the relationship-regulating significance of pain.

2. Chronic pain can be understood as a consequence of dysregulated attachment experience. This perspective considers the individual attachment experience with regard to vulnerability for the development of chronic pain.

3. Finally, chronic pain can be viewed in relation to the effect it has on an individual's social relationships. This perspective concentrates less on the development conditions of pain, than its consequences. However, since our focus is mainly on the development of psychogenic pain, we will not further elaborate on the last point.

In order to investigate individual differences in the mental representation of attachment in adulthood, (George, Kaplan, & Main, 1985) developed a method in the eighties which is referred to as the Adult Attachment Interview (AAI). Among approximately 15 half-open questions, 1 question was geared towards the experiences gained in dealing with affliction and pain with the primary attachment figure. The background of this question is the fact that the expression of pain is, similar to the expression of fear, a key signal to activate nurturing behavior. Nurturing behavior is the behavior system complementary to the attachment behavior system on the part of the primary attachment figure. Bowlby had already assumed this complementarity in biologically preformed behavior systems. It was above all Ainsworth et al. (1978) who later identified the importance of maternal sensitivity for the development of a secure attachment.

The question whether the attachment figure responds promptly and adequately to the attachment signals of a child is a question of maternal sensitivity. The expression of pain has, with regard to the current relationship, an expressive function; it includes the request for support and comfort. In the event of non-appearance, the signal is amplified.

When asked about pain experiences during childhood and the reaction of the attachment figures, patients with chronic pain often state that they cannot remember situations where they were in need of help, or they report in a normalizing manner without any detectable emotional movement that they received what was necessary. It becomes clear, that the affects linked to the mentioned episodic memories are either not accessible or greatly downregulated. Viewed superficially, an image of "normality" is created, but one that depicts the features of an emotional emptiness discussed above (alexithymia).

While the description of individual differences in binding behavior during childhood was based on behavior observations through the strange situation, the study of attachment in adulthood by means of the AAI focuses on how attachment security and attachment insecurity present themselves in the medium of language in a dyadic conversational situation. It is evident that the study approach shows a close resemblance to a psychoanalytic conversational situation. The essential criterion for determining whether an adult conversation partner is securely or insecurely attached is not

determined by the content of the described interaction experiences with the primary binding persons, but rather by the form of narrative through which the experiences become accessible in the course of the interview.

In secure-attached probands, the focus of attentiveness changes automatically back and forth between the current conversational situation and the account of the attachment experiences. The image of the experiences is multifaceted and coherent. This means there are hardly any contradictions and inconsistencies between the general characterization of the attachment persons and experienced (reported) episodes. Securely attached speakers appear cooperative in answering the questions; their report is authentic and balanced. This balance of description often arises from the fact that the speaker adopts a quasi-constructivist position in relation to their experiences. The speaker shows that their view of the experience or their judgment of the motivations and conduct of the people from their childhood has changed over time, for instance due to newly added insights.

In insecure attached speakers, indications point to a lower coherence of the narrative. In the insecure avoidant attachment representation, this is linked to a general reduced accessibility to the emotional content of past experiences, often associated with a tendency to normalize particularly negative, painful experiences with primary attachment figures. A persisting, anger-filled entanglement is apparent. These probands lack inner distance to experiences of their attachment history activated by the interview. The incoherence of their narrative is primarily caused by excessive detailed descriptions of attachment experiences in which the change of focus between autobiography and the current conversational situation is hindered by the intensity of the remaining anger-filled entanglement with the primary attachment figures.

Presently, a large number of studies are available on the distribution of different types of attachment representations in clinical groups (Dozier, Stovall, & Albus, 1999). The results show an increased prevalence of insecure forms of attachment representations in clinical groups. However, there are only limited findings demonstrating a differential affinity of the different forms of insecure attachment to individual disorders.

For somatoform disorders, and especially somatoform pain disorders, the higher prevalence of insecure attachment patterns has been confirmed (Slawsby, 1995; Wentzel, Offenbcher Sigl, Stucki, Butollo, 2001; Waller, Scheidt, & Hartmann, 2004). In addition, a higher frequency of the insecure avoidant attachment pattern can be observed in somatoform disorders.

Relating the findings of the attachment organization to the above presented considerations concerning affect regulation in somatoform disorders, it can be expected that pain patients and other patients with functional disorders show a tendency to downregulate their affective expression, which corresponds to the affect regulation in avoidant attachment behavior. Studies on the differential connections between affect regulation and attachment style in fact confirm that an avoided binding strategy correlates with higher values of alexithymia (Waller, Scheidt, & Waller unpublished).

The development of attachment is therefore of central importance for a vulnerability model of psychogenic pain syndromes. In addition to the studies showing a high prevalence of infantile negative factors in pain disorders (see above), studies on the development of attachment also show that the somatization process is encouraged by the type of affect regulation disorder associated with insecure attachment. However, it should not be ignored that only one line of pathogenesis is being described. Further attachment factors are beyond the present article`s subject and include cognitive aspects as well as conditions of the medical treatment context that often encourage a chronification of pain disorders.

Therapeutic consequences

The analytical psychotherapy of somatoform disorders is the gradual retranslation of physical symptoms separated from the inner experience into the subjective experience. This process leads via the activation of intense feelings of guilt, shame, and grief. Treatment modifications of the usual approach in analytical psychotherapy are often, particularly in the initial phase, necessary because patients with somatoform disorders are not open in the first instance to processing unconscious conflicts in the context of a transference relationship. The treatment is initially mostly limited to alleviating the symptoms.

An active and symptom-based approach namely focused on pain behavior is part of the technique modification required in the initial phase of treatment (Scheidt, 2002, 2003). It enables patients to gradually change their views on the nature of their complaints (namely, the idea that these are exclusively physically explained). Only when the investigation scope of connections between physical complaints and mental experience has increased can the engagement with the underlying conflict dynamics be initiated.

According to the above-presented theoretical considerations, the processing of the affect regulation disorder plays a central role in pain patients. It has priority over the processing of individual conflict contents. As already mentioned, pain symptoms are associated with restrictions on the affect perception in different ways and at different levels of the structural level. The connection of separated affects with the associated relationship episodes plays a major role regulatory. This is of course easier if it involves pain symptoms on a more integrated structural level, meaning the better introspective capabilities of the patients, more differentiated affect perception, and less distorted object images by projections.

With pain disorders, which, according to Hoffmann and Egle (1989) taxonomy, trigger pain in terms of a narcissistic regulatory mechanism, the object images are often distorted by considerable projections. The ability for a differentiated affect perception is low. The clarification of interpersonal conflicts that provoked the development of symptoms plays a central role in these treatments.

The focus of the treatment here is less on the clarification of the inner pattern of experience and relationship formation (e.g., within the transference relationship) than on the objective of a gradual differentiation and correction of projective biased interpersonal relationships. For this purpose, it is often necessary to actively work on a cognitive and affective clarification and integration of interpersonal relationship constellations, in which patients had become involved and had led to vast emotions of anger and disappointment.

The mobilization of intense countertransference effects is part of the treatment of pain patients. It is in the nature of separated emotions, which are also inaccessible to one`s own experience, that they enter the therapeutic communication and countertransference. The spectrum of countertransference reactions ranges in view of the symptoms from helplessness to anger and feelings of guilt to resignation and depression all affects that are triggered in the therapist by means of a projective identification. As in other analytic psychotherapy, it is also important that the therapist can provide the function of affect containment. The pain binds diverse, non-integrated emotions, which must be accommodated and "metabolized" by the therapist.

The therapeutic function can also be described with the terms of the binding theory; secure, base, and sensitivity. The process of therapy is less about reconstructive or transference interpretations than, within a corrective emotional experience, about achieving a gradual change of the internal working models of attachment. This change does not primarily affect the circumscription of specific contents of the autobiographical memory, but instead a change in procedurally-memorized,

automatically-running patterns of relationship formation. This is achieved via integration of separated affects which are gradually linked with important, anchored relationship experiences, both inside and outside the therapeutic relationship.

Other consequences for therapy result from the high prevalence of avoidant insecure binding representations. Patients with insecure avoidant attachment are to a greater extent reliant on affective mirroring, encouragement, and support than secure attached individuals. Insecure avoidant binding behavior develops in response to hidden rejection by the primary attachment figure. Avoidance is a compromise between approach and aversion. In light of experiences with the primary attachment figure of insecure avoidant attached patients, a high degree of abstinence from the therapist is perceived as daunting and makes the initial start of therapy difficult or impossible. One can hardly speak of this transfer in a narrow sense; at least the type of transfer reflects fewer experiences with the primary binding figure at the level of an already established complete internal image. It reflects rather more global, still uncontoured aspects of early interaction. The change in this pattern takes place through the repeated contrasting between past and present relationship reality. This contrasting integrates also reconstructive interpretations, but it goes beyond that.

The psychotherapeutic treatment of pain patients requires the consideration of further aspects that cannot be described in detail here. This includes the coordination of psychotherapy with other concurrent, medical treatments. If it does not succeed in adjusting the treatment objectives and methods between the parties involved, the risk arises of contrary and uncoordinated activities interfering with one another and hindering their effectiveness. This applies especially to the planning of the analgesic therapy, whose objective and scope should be coordinated with the psychotherapy; changes in medication can, depending on the nature and extent, become a disturbing factor (e.g., opioid medication). A realistic goal with the patient should also be discussed at the beginning of treatment. Considerations are parameters playing, almost regularly, a role in this group of patients and should thus be proactively involved in treatment planning.

Unfortunately, the psychoanalytic treatment of pain patients is today still a desideratum. Although we know considerably more about the psychodynamics than twenty years ago, depth psychological and psychoanalytical psychotherapists do not hesitate to accept pain patients. On the other hand, these patients may (on the basis of the above-presented conditions of the illness`s development, which reach far back into their personality development in the long term) most likely benefit from a depth psychological or analytical psychotherapy. It is to be hoped that more depth psychological and analytical trained psychotherapists venture into the treatment of this large group of patients in the future.

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Conflict of Interests

Authors have no conflict of interests.

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The Association of Psychological Disorders with Extraintestinal Symptoms in Patients with Irritable Bowel Syndrome

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Quantitative Study

Abstract

Background: Extraintestinal symptoms are common in patients with irritable bowel syndrome (IBS). In the present study, we determined the relationship between psychological disorders and extraintestinal symptoms in patients with IBS.

Methods: Adult patients with IBS referred to 4 gastroenterology clinics in Isfahan, Iran, completed the irritable bowel severity scoring system (IBSSS), extraintestinal symptoms scale, Hospital Anxiety and Depression Scale, and Irritable Bowel SyndromeQuality of Life (IBS-QOL) Questionnaire. Univariate and multivariate analyses were conducted.

Results: The patients included 113 females and 45 males with mean age of 34.8 ± 11.1 years. Cumulative frequency of extraintestinal symptoms was 3.3 ± 2.4 (0 to 10). Anxiety and depression were present in 79.7% and 54.4% of the patients, respectively. Frequency of extraintestinal symptoms was correlated with anxiety and depression (r = 0.289 to 0.531), IBS severity (r = 0.373 to 0.505), and quality of life (r = -0.317 to -0.398). Severity of IBS was independently associated with extraintestinal digestive symptoms' frequency (β = 0.248). Female gender, education level, and anxiety were independently associated with extraintestinal non-digestive symptoms' frequency (β = -0.225 to 0.260). Severity of IBS and frequency of non-digestive symptoms were independent predictors of quality of life (β = -0.494 and -0.218). After controlling for psychological factors, IBS severity and depression were independent predictors of quality of life (β = -0.435 and -0.318).

Conclusion: Extraintestinal symptoms and psychological disorders are common in patients with IBS and impact their quality of life. Psychological disorders are associated with extraintestinal symptoms, especially non-digestive symptoms. These results highlight the need for an integrated biopsychosocial approach to the management of IBS patients with physical and mental comorbidities.

Keywords: Irritable bowel syndrome, Anxiety, Depression, Psychological, Comorbidity, Quality of life

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Introduction

Irritable bowel syndrome (IBS) is one of the most common functional gastrointestinal disorders (FGIDs) characterized by abdominal pain or discomfort accompanied with disturbed bowel habit (Longstreth, Thompson, Chey, Houghton, Mearin & Spiller, 2006). The prevalence of IBS in the general population is between 3% and 15%, and it is one of the most prevalent diagnoses in outpatient gastroenterology clinics (Chang, 2004). With IBS being a chronic disease and most patients aged between 30 to 50 years, the financial and health burden associated with IBS is considerable (Agarwal & Spiegel, 2011).

Patients with IBS consult physicians for a variety of complaints other than intestinal symptoms, i.e. extraintestinal symptoms. Excess health care costs in IBS have been attributed mostly to such comorbid disorders (Whitehead, Palsson, & Jones, 2002). Extraintestinal symptoms such as symptoms related to the upper digestive system, urinary symptoms, and chronic somatic pains, as well as non-specific symptoms such as fatigue and sleep disturbances are frequently seen in IBS patients (Whitehead Palsson, & Jones. 2002; Whitehead Palsson, Levy. 2007). Such accompanying symptoms and disorders increase the burden associated with IBS and significantly impair the patient's quality of life which can be even more than that of IBS symptoms (Lee, Lee, Kim, Sung, Park, Jin, et al., 2010; Lackner, Keefer, Brenner, Gudleski, Satchidanand, et al., 2013).

The etiology of extraintestinal symptoms in patients with IBS is not well understood. There may be shared pathophysiological mechanisms and risk factors (Whitehead et al., 2002). Widespread visceral (Bouin, Lupien, Riberdy, Boivin, Plourde, & Poitras, 2004) and somatic hypersensitivity (Stabell, Stubhaug, Flaegstad, & Nielsen, 2013), central sensitization (Chang, 2005), and psychosocial factors (Whitehead et al., 2002) are implicated in this regard. Psychological disorders, mostly anxiety, depression, and somatoform disorders, are frequently observed in patients with IBS and have an important role in the disease course and treatment outcomes (Palsson & Drossman, 2005). Therefore, psychological disorders may explain, albeit not all of, the excess comorbidities seen in patients with IBS.

Due to the impact of extraintestinal symptoms on the quality of life of patients with IBS, therapeutic plans should also consider the controlling of these symptoms. Therefore, the investigation of extraintestinal symptoms and recognition of the etiology of and associated factors to these symptoms are important. Considering limited number of studies performed in this field, the present study was conducted to determine the relationship between psychological disorders and extraintestinal symptoms in patients with IBS. The secondary aim of the study was to evaluate the independent impact of these factors on patients' quality of life.

Methods

This cross-sectional multicenter study was conducted on patients with IBS who referred consecutively to 4 private gastroenterology clinics in Isfahan city (Iran) between the years of 2013 and 2014. Inclusion criteria consisted of an age between 18 and 65 years, diagnosis of IBS based on the Rome III criteria (Longstreth et al., 2006), and the ability to complete the study questionnaires either through self-administration or interview. The study was approved by the Ethics Committee of the Isfahan University of Medical Sciences, Isfahan, and verbal consent was obtained from patients.

After being diagnosed by the gastroenterologist based on the Rome III criteria and necessary work-ups, patients were referred to trained interviewers and filled out the self-administered questionnaires and provided demographic data including age, gender, and education level (year).

The irritable bowel severity scoring system (IBSSS) was used to measure the severity of IBS symptoms. It is one of the most commonly applied outcome measures for IBS with appropriate psychometric properties. The scale

contains 5 items including severity of abdominal pain, frequency of abdominal pain, severity of abdominal distension, satisfaction with bowel habit, and the overall impact of symptoms on daily life. Each item is scored from 0 to 100 using a 10 cm visual analogue scale (except for pain frequency). The total score of the scale ranges from 0 to 500 with higher scores indicating greater severity. The scores can also be categorized into mild (< 175), moderate (175 to 300), and severe (> 300) cases (Francis, Morris, & Whorwell, 1997).

Based on similar studies evaluating extraintestinal comorbidities in patients with IBS, we generated a list of common symptoms to evaluate the frequency of these symptoms. The items include digestive symptoms (nausea/vomiting, early satiety, postprandial fullness, excessive belching, and heartburn) and non-digestive symptoms (urgency for urination, headache, backache, thigh pain, muscles or joints pain, and fatigue). The items are rated by 5-point Likert responses; never, rarely, sometimes, often, and always. Symptoms are considered present when experienced by the patient often or always. In a pilot study, this scale was found to have acceptable reliability (Cronbach's alpha = 0.7) and validity in comparison to IBS severity and quality of life scales (Gholamrezaei, Nemati, Minakari, Daghaghzadeh, Tavakkoli & Emami, 2010).

The Irritable Bowel Syndrome-Quality of Life (IBS-QOL), which is one of the most commonly applied and well validated questionnaires for the assessment of quality of life in patients with IBS, was used in this study. The IBS-QOL comprises 34 items with 5-point response scales (scored 0 to 4) and covers 8 dimensions of quality of life including dysphoria, interference with activity, body image, health worry, food avoidance, social reaction, sexual concerns, and relationships. Higher values indicate better quality of life after converting the raw score into 0 to 100 points (Drossman, Patrick, Whitehead, Toner, Diamant, Hu, et al., 2000).

The Hospital Anxiety and Depression Scale (HADS) was used to evaluate psychological disorders. It contains 14 items in 2 dimensions of anxiety and depression. Each item is rated on a 4-point Likert scale (scored 0 to 3), giving a maximum score of 21 for each of the subscales. At the cut-off score of 8, the HADS has a sensitivity and specificity of above 80% in diagnosing clinically important anxiety and depression disorders (Bjelland, Dahl, Haug, & Neckelmann, 2002).

For all the above mentioned questionnaires, linguistically validated and reliable Persian versions were used in this study (Montazeri, Vahdaninia, Ebrahimi, & Jarvandi,, 2003; Gholamrezaei, Zolfaghari, Farajzadegan, Nemati, Daghaghzadeh, Tavakkoli, et al., 2011; Gholamrezaei et al., 2010). An interviewer was available if the patient required explanation for completing the questionnaires.

Sample size was calculated as 160 cases using the G*Power software (version 3.1.7, Franz Faul, Kiel University, Germany). Type I error probability and power were considered as 0.05 and 0.95, respectively. A medium effect size (f^2) of 0.15 and 8 predictors for quality of life were considered for the multiple linear regression tests.

Data were analyzed using the SPSS software (version 16.0, SPSS Inc., Chicago IL, USA). Data are presented as mean ± standard deviation (SD), mean [standard of error], and number (%). Normal distribution of quantitative data was checked using the Kolmogorov-Smirnov test. Comparisons were made using Fisher's exact test and independent sample t-test (or Mann-Whitney test) for qualitative and quantitative data, respectively. The Spearman's rho was applied to test the correlation between the study variables. Linear regression analyses were performed to find factors associated with cumulative frequency of extraintestinal symptoms as well as independent predictors of quality of life. A P value of less than 0.05 was considered significant in all analyses.

Results

Demographic data and disease characteristics

During the study period, 193 patients with IBS were invited to participate, among which

14 patients were not willing to attend the study and 21 patients filled out the questionnaire incompletely. Finally, 158 patients with complete data were included in the study (mean age = 34.8 ± 11.1, 71.5% female). Demographic data and disease characteristics are presented in table 1. No statistically significant difference was observed between female and male patients regarding demographic data or IBS characteristics (all P > 0.05).

Table 1: Demographic data and disease characteristics (n = 158)

Variable	
Age (year) (mean ± SD)	34.8 ± 11.1
Gender [Number (%)]	
Female	113 (71.5)
Male	45 (28.4)
Education level (year) (mean ± SD)	11.7 ± 3.9
IBS symptoms duration (year) (mean [SE])	5.8 [0.5]
IBS subtypes [Number (%)]	
IBS-C	45 (28.5)
IBS-D	26 (16.5)
IBS-M	82 (51.9)
IBS-U	5 (3.2)
IBS severity [Number (%)]	
Mild	24 (15.2)
Moderate	82 (51.9)
Severe	52 (32.9)

SD: Standard deviation; SE: Standard of error

Frequency of extraintestinal digestive and non-digestive symptoms (presented often/always) is reported in table 2. Frequency of postprandial fullness, headache, thigh pain, and fatigue was significantly higher in female than male patients (all P < 0.05). Moreover, the cumulative frequency of extraintestinal symptoms was higher in females than males (3.7 ± 2.4 vs. 2.3 ± 1.9; P = 0.002).

Anxiety and depression were present in 77.8 and 55.6% of males and 80.5 and 54.0% of females with no significant difference between genders (both P > 0.05). Correlations between demographic data, extraintestinal symptoms' frequency, disease severity, anxiety, depression, and quality of life are presented in table 3. In summary, the frequency of extraintestinal symptoms (total, digestive, and non-digestive) was correlated with anxiety and depression severity (r = 0.289 to 0.531), IBS severity (r = 0.373 to 0.505), and quality of life score (r = -0.317 to -0.398). Age and education level were correlated with the frequency of non-digestive symptoms (r = 0.208 and -0.289). Anxiety and depression severity were positively correlated with IBS severity (r = 0.314 to 0.451) and negatively correlated with quality of life score (r = -0.425 to -0.502).

Linear regression analyses were conducted to find independent predictors of extraintestinal symptoms' frequency and quality of life. Female gender, education level, IBS severity, and severity of anxiety and depression were all independently associated with total extraintestinal symptoms' frequency (β = -0.186 to 0.233, Table 4). After separating digestive and non-digestive symptoms, IBS severity was associated with extraintestinal digestive symptoms' frequency and female gender, education level, and anxiety severity were associated with extraintestinal non-digestive symptoms' frequency (β = -0.225 to 0.260). Furthermore, there was a non-statistically significant association between depression severity and frequency of extraintestinal digestive and non-digestive symptoms (β = 0.182 and β = 0.203, P = 0.073 and P = 0.061, respectively; Table 4).

With regard to the quality of life, linear regression models were used with and without including psychological factors. In the first model, severity of IBS and frequency of non-digestive extraintestinal symptoms were independently associated with IBS-QOL score (β = -0.494, β = -0.218). The association between extraintestinal symptoms and quality of life disappeared after including psychological factors in the analysis (Model 2). IBS severity and depression were independent predictors of quality of life in the second model (β = -0.435, β = -0.318; Table 5).

Table 2: Frequency[a] of extraintestinal symptoms in female and male patients

	Female (n = 113)	Male (n = 45)	P*
Digestive symptoms			
Nausea/vomiting	13 (11.5)	2 (4.4)	0.235
Early satiety	33 (29.2)	10 (22.2)	0.432
Postprandial fullness	59 (52.2)	11 (24.4)	0.002
Excessive belching	33 (29.2)	12 (26.6)	0.846
Heartburn	28 (24.7)	11 (24.4)	> 0.999
Non-digestive symptoms			
Urgency for urination	39 (34.5)	12 (26.6)	0.451
Headache	28 (24.7)	2 (4.4)	0.002
Backache	34 (30.0)	8 (17.7)	0.161
Thigh pain	26 (23.0)	4 (8.8)	0.044
Muscles or joints pain	40 (35.3)	10 (22.2)	0.130
Fatigue	67 (59.2)	18 (40.0)	0.034

Data are presented as number (valid percent).
[a]Symptom was considered present if experienced often/always; *Fisher's exact test

Table 3: Correlations between demographic data, extraintestinal symptoms' frequency, disease severity, anxiety, depression, and quality of life

	EIS frequency			IBSSS	IBS-QOL
	Total	Digestive	Non-digestive		
Age	0.134	-0.026	0.208*	0.093	0.004
Education level	-0.206*	-0.035	-0.289*	-0.166*	0.161*
Anxiety	0.531**	0.342**	0.526**	0.451**	-0.425**
Depression	0.447**	0.289**	0.440**	0.314**	-0.502**
EIS frequency					
Total				0.505**	-0.398**
Digestive				0.373**	-0.317**
Non-digestive				0.473**	-0.361**
IBSSS					-0.494**

Data are presented as Spearman's correlation coefficients. EIS: Extraintestinal symptoms, IBSSS: Irritable bowel severity scoring system, IBS-QOL: Irritable bowel syndrome-quality of life
*P < 0.05, **P < 0.01

Table 4. Multiple linear regression models of possible predictors of extraintestinal symptoms' frequency

	Extraintestinal symptoms' frequency		
	Total	Digestive	Non-digestive
Age	0.001	-0.063	0.047
Gender (Female vs. Male)	0.193**	0.109	0.193**
Education level	-0.186*	-0.051	-0.225**
IBSSS	0.219**	0.248**	0.130
Anxiety	0.218**	0.066	0.260**
Depression	0.233**	0.203	0.182
R^2 (adjusted)	0.452 (0.425)	0.206 (0.166)	0.420 (0.391)

Data are presented as standardized coefficients (Beta). IBSSS: Irritable bowel severity scoring system
*P < 0.05, **P < 0.01

Table 5: Multiple linear regression models of possible predictors of quality of life

	Model 1	Model 2
Age	0.116	0.132
Gender (Female vs. Male)	0.025	-0.035
Education level	0.056	0.066
IBSSS	-0.494**	-0.435**
EIS frequency		
Digestive	-0.066	-0.003
Non-digestive	-0.218*	-0.081
Anxiety	-	-0.039
Depression	-	-0.318**
R^2 (adjusted)	0.419 (0.390)	0.501 (0.466)

Data are presented as standardized coefficients (Beta). IBSSS: Irritable Bowel Severity Scoring System, EIS: Extraintestinal symptoms, *P < 0.05, **P < 0.01

Discussion

We evaluated the relationship between psychological disorders and extraintestinal symptoms in patients with IBS. In our study, clinically important levels of anxiety and depression were found in about 80 and 55% of the patients, respectively. Previous studies have shown high frequency of psychological disorders, notably anxiety and depression (20% to 50%), in patients with IBS (Fond et al., 2014). The higher frequency of anxiety and depression in our study may be attributed to the tertiary care setting of the study. We also found various digestive and non-digestive extraintestinal symptoms in up to half of the participants. Associations were found between psychological disorders and extraintestinal symptoms which were more evident for non-digestive symptoms and independent from IBS severity and patients' demographic factors. It should be noted that the causality between psychological disorders and extraintestinal complaints cannot be concluded from our study results. The existence of a reciprocal relation between psychological dysfunction and extraintestinal symptoms in a way that each causes development and/or progression of the other is plausible.

Comorbidities in patients with IBS can be divided into 2 general groups of digestive and non-digestive complaints. With regards to digestive disorders, up to 50% of patients with IBS have concomitant symptoms of gastroesophageal reflux disease (GERD), and there is considerable overlap between IBS and functional dyspepsia (FD) (Whitehead et al., 2002). Similar to our study, previous studies have found postprandial fullness, epigastric pain, nausea/vomiting, early satiety, and bloating in about half of the patients with IBS (Whitehead et al., 2002). It is hypothesized that IBS, FD, and GERD share some common pathophysiological mechanisms which can explain the considerable overlap among these gastrointestinal disorders (Whitehead et al., 2002). In our study, IBS severity was independently associated with digestive symptoms, but it was not independently associated with anxiety. In addition, the association of depression with digestive symptoms was not statistically significant. Accordingly, high frequency of extraintestinal digestive symptoms in patients with IBS seems to be due to a shared pathophysiology (Whitehead et al., 2002), but may not be attributed to the high frequency of psychological disorders in these patients.

On the other hand, we found that anxiety and depression had correlation with non-digestive symptoms which was stronger than that with digestive symptoms. Moreover, there was no independent association between IBS severity and non-digestive symptoms. Nevertheless, female gender, lower education level, and higher anxiety were independent predictors for the presence of non-digestive symptoms. In the

study by Lembo, Zaman, Krueger, Tomenson, and Creed, 2009, on 3048 individuals, of which 12.2% had IBS, psychological disorders and IBS were independently correlated with the number of extraintestinal symptoms. Furthermore, there was a direct relationship between psychological disorders and extraintestinal symptoms (Lembo et al., 2009). These findings are in favor of possible common risk factors for some of the observed comorbidities in IBS as well as highlighting the role of psychological dysfunction in non-digestive comorbidities associated with IBS. However, some investigators believe that comorbidities in patients with IBS are due to biased symptom perception and a general tendency to exaggerated symptom reporting rather than a shared pathophysiology (Whitehead et al., 2007). If this was true, we would expect to see an association between psychological factors and both digestive and non-digestive symptoms; however, only an association with non-digestive complaints was evident in our study. It must be noted that we evaluated a limited number of non-digestive complaints mostly related to pain conditions and fatigue. In addition, we did not evaluate other psychological factors such as somatization and catastrophizing which are common in patients with IBS and can affect symptom reporting (van Oudenhove, Vandenberghe, Vos, Holvoet, & Tack, 2011; Lackner Jaccard, Baum, Smith, Krasner, Katz, et al. 2011; van Tilburg, Palsson, & Whitehead, 2013). Hence, our study results can not be generalized to other physical comorbidities and a more comprehensive psychiatric evaluation of patients is required in future studies.

Previous studies have shown an association between IBS and a number of chronic somatic pain conditions such as fibromyalgia (Whitehead et al., 2002), headaches (Lau, Lin, Chen, Wang, & Kao,, 2014), and back pain (Lackner, Ma, Keefer, Brenner, DGudleski, Satchidanand, et al., 2013). Lackner et al. (2013) reported an average of 5 comorbidities (1 mental, 4 physical) in patients with IBS. They found that, compared with other comorbidities, generalized anxiety, depression, back pain, agoraphobia, tension headache, and insomnia are associated with greater illness and symptom burdens. Similar to our results, they found that mental comorbidity had greater impact on quality of life than physical comorbidity (Lackner et al., 2013). When we controlled for anxiety and depression, the association of extraintestinal symptoms and quality of life disappeared in the regression analysis. It seems that IBS physical comorbidities can affect quality of life, but when they are psychologically distressing for the patient. Indeed, some of the extraintestinal complaints in patients with IBS can be attributed to drug intolerance (Poitras, Gougeon, Binn, & Bouin,, 2008). These complaints are not, however, associated with psychological comorbidity and rather are of a somatic origin (Poitras et al., 2008).

The results of our study have important clinical implications. Due to unclear pathophysiology, and therefore, limited available pharmacological treatments, managing IBS is challenging. There is no reliable biomarker to be considered as the goal of treatment. Accordingly, treatments are aimed to enhance the quality of life and psychological well-being of the patients. However, current medical treatments such as laxatives, antispasmodics, and bulking agents can provide IBS specific symptomatic relief (Ford, Quigley, Lacy, Lembo, Saito, Schiller, et al, 2014a), but are not expected to have efficacy for extraintestinal symptoms, especially non-digestive symptoms. We showed that these symptoms significantly impact the patients' quality of life and may also affect their psychological well-being. Antidepressants are widely prescribed by gastroenterologist and are shown to be effective for treatment of IBS. These drugs have central analgesic effects. Therefore, the may be efficacious for patients with IBS and somatic pain comorbidities (Dekel, Drossman, & Sperber, 2013). Furthermore, considering the

high frequency of psychological disorders in patients with IBS, antidepressants can be beneficial for patients with these mental comorbidities (Dekel et al., 2013). However, there is no direct evidence on the efficacy of antidepressants on physical comorbidities in patients with IBS and studies on mental comorbidities are scarce (Ford, Moayyedi, Lacy, Lembo, Saito, Schiller, et al.. 2014b). Hence, more clinical trials are warranted in this regard.

Increasing number of studies have evaluated and shown the efficacy of various psychological therapies in patients with IBS (Ford et al., 2014b). These treatments can improve IBS symptoms as well as psychological well-being (Henrich, Knittle, De Gucht, Warren, Dombrowski & Maes,. 2015). We previously showed that training on coping strategies can improve digestive symptoms, anxiety, and depression in patients with IBS. We also found more improvement in extraintestinal symptoms through this psychological treatment than standard care (Kheir-Abadi, Bagherian, Nemati, Daghaghzadeh, Maracy & Gholamrezaei. 2010). An interesting finding was a correlation between improvement in psychological symptoms and extraintestinal symptoms which was independent from improvement of IBS symptoms (Kheir-Abadi et al., 2010). Along with the results of the present study, these findings indicate the need for an integrated pharmacological and psycho-behavioral approach for the management of patients with IBS and physical and mental comorbidities.

The present study had a number of limitations. This study was performed only in private tertiary care clinics and the results are not generalizable to other care settings. Determination of the cause and effect relationship between psychological symptoms and extraintestinal symptoms was not possible by this cross-sectional study. Moreover, we did not evaluate a comprehensive list of digestive and non-digestive symptoms, did not evaluate the severity of symptoms, and only assessed anxiety and depression as psychological factors. Since other symptoms and psychological disorders are frequently observed in patients with IBS, a more comprehensive evaluation is required in future studies.

Conclusion

Digestive and non-digestive extraintestinal symptoms and psychological disorders are frequently observed in patients with IBS and have a great impact on patients' quality of life. Psychological disorders are associated with extraintestinal symptoms, especially non-digestives symptoms. These results highlight the need for an integrated pharmacological and psycho-behavioral approach to the management of patients with IBS and physical and mental comorbidities. Further studies with more comprehensive evaluation of extraintestinal symptoms as well as clinical trials on the efficacy of integrative therapies for patients with IBS and comorbidities are required.

Conflict of Interests

Authors have no conflict of interests.

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Effectiveness of Spiritually Augmented Psychotherapy on Dysfunctional Attitudes in Patients with Dysthymic Disorder

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Quantitative Study

Abstract

Background: The aim of this study was to evaluate the efficacy of spiritually augmented psychotherapy (SAPT) on the dysfunctional attitudes of patients with dysthymic disorder.

Methods: A mixed qualitative and quantitative method was used in the present study. SAPT model was prepared in the first phase, and in the second phase, a double-blind randomized clinical trial was performed. The study subjects consisted of 62 patients with dysthymic disorder selected from several clinical centers of Isfahan University of Medical Sciences in Isfahan, Iran. The participants were randomly assigned to 3 experimental groups and 1 control group. The first group received 8 sessions of SAPT treatment, the second group also had 8 sessions of cognitive behavioral therapy (CBT) which was specific to dysthymic disorder, and third group were under antidepressant treatment. The Dysfunctional Attitudes Scale (DAS-26) was used to evaluate all the participants in 4 measurement stages. The data were analyzed using repeated measures MANCOVA.

Results: Findings showed that SAPT had higher efficacy on the modification of dysfunctional attitudes than CBT and medication ($P < 0.05$).

Conclusion: These findings supported the efficacy of psychotherapy enriched with cultural structures and spiritual teachings.

Keywords: Psychotherapy, Spiritual, Cognitive-behavioral therapy (CBT), Depression, Dysfunctional attitude

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Introduction

Dysthymic disorder is a prevalent disorder with the estimated prevalence rate of between 3 and 6%. On the other hand, 36% of psychiatric outpatients suffer from dysthymic disorder and a considerable number of those who refer to primary healthcare centers suffer from this disorder (Bell, Chalklin, Mills, Browne, Steiner, Roberts, et al. 2004).

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Although cognitive-behavioral therapies (CBTs) have been known as effective therapies for clinically depressed patients (Haby, Donnelly, Corry,& Vos, 2006; Feldman, 2007), CBTs may not have equal effects on patients with different cultural and religious backgrounds (Propst, Ostrom, Watkins, Dean, & Mashburn, 1992; Post, & Wade, 2009). Almost all authorities agree that cultural variables are important for the diagnosis and treatment of mood problems. In fact, the negligence of cultural differences in clinical studies not only is mismanagement in research policy, but also results in serious misinterpretations of the findings of clinical trials (Hofmann, 2006).

Increasing studies of psychiatry, spirituality, and religion deal with the necessity of mixing original religious teachings and cultural beliefs, and convictions related to health in psychotherapeutic strategies (D'Souza & Rodrigo, 2004; Smitha, Bartza, & Richardsa, 2007; Pargament, 2011; Aten & Worthington, 2009). Different psychotherapeutic models have been created in different cultures by integrating psychotherapy and religious teachings. Some examples of these approaches include religious CBT models for curing depression disorder (Propst et al.,1992), spirituality focused therapy (Cole, 1999), religious psychotherapy plan for depression and anxiety (Berry, 2002) and spiritually augmented CBT (D'Souza & Rodrigo, 2004). Strengthening effectiveness of conventional psychotherapies with spiritual teaching is increasingly considered in Eastern and Islamic countries such as mixed cultural-religious psychotherapy model for curing depression and anxiety (Razali, Hasanah, Aminah, & Subramaniam, 1998; Azhar, & Varma, 1995; Azhar, Varma, & Dharap, 1994). Spiritually augmented psychotherapy (SAPT) accelerates improvement of depression and anxiety symptoms and reduces psychological problems of psychosomatic patients (Townsend, Kladder, Ayele, & Mulligan, 2002). Nevertheless, some studies have shown that this psychotherapy model has not been different from other therapies during the 6-month follow-up stages (Azhar & Varma, 1995). In order to resolve these controversies, the aim of this study was to compare the efficacy of SAPT and CBT on the dysfunctional attitudes of patients with dysthymic disorder.

Methods

Mixed method design was used with two qualitative and quantitative phases. In the first phase and using the qualitative method, grounded theory of SAPT model was formulated. The second phase was a double-blind randomized clinical trial with a control group (waiting list). The participants were included in the study through requesting from general practitioners and psychiatrists, calling health centers, dormitories, and faculties of Isfahan University of Medical Sciences and Isfahan Goldis Psychological Services Center, Isfahan, Iran. Initial screening was performed through a clinical interview and Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, (DSM-IV) Axis I Disorders (SCID-I) (First, Spitzer, Gibbon, & Williams, 2002). Positive screening cases who had the inclusion criteria of the study were randomly assigned to one of the experimental conditions (experimental groups) or the waiting list. The experimental and control groups were evaluated using the Dysfunctional Attitude Scale (DAS-26) in 4 sessions during the study [pre-intervention, 4 weeks after starting, post-intervention, and follow-up (3 months later)]. Inclusion criteria included dysthymic disorder diagnosis according to the DSM-IV-TR, age of between 20 and 65 years, minimum literacy, lack of consumption of any psychiatric medicine in the past 3 months and lack of participation in psychotherapy sessions in the past 6 months, literacy in the Persian language, and willingness to participate in this project. Exclusion criteria included suffering from a severe physical diseases, serious neurology, mental retardation, psychosis disorders or

symptoms, bipolar disorder, depression disorders resulting from drug and alcohol abuse and other psychiatric disorders with depression as their secondary symptoms, reluctance of the patient to continue the therapy, serious suicide ideation and risk of suicide which require emergency intervention. After execution of the pre-test by a clinical psychologist, the intervention was started by therapists. The raters and therapists were not aware of each other's work.

Cognitive-behavioral therapy: The CBT protocol which was used in this study was a standard copy of the cognitive-behavioral therapeutic design for chronic depression and dysthymia which was prepared by Moore and Garland (2003). The mentioned therapeutic design was prepared in 8 weekly sessions. Each session lasted 45 minutes and was held separately for each individual.

Spiritually augmented psychotherapy: The content and process of SAPT intervention included theoretical model, intervention strategies, and implementation guideline, which was extracted from spiritual sources using grounded theory in the first phase of the study and designed for 8 sessions. Based on the grounded theory (Speziale & Carpente, 2007), the data were gathered and analyzed in different ways. First, spiritual and psychology experts were interviewed in Iran and their viewpoints were collected until data saturation, and then, data were analyzed and conceptualized. In the next step, spiritual sources, including written and electronic sources, were searched with regard to questions and goals and under the supervision of experts in religious sciences considering the interview data. Then, the data were classified and analyzed in terms of content. Content of therapeutic protocol included spiritual theoretical viewpoint for explaining the formation of depression disorders and therapeutic methods including cognitive, behavioral, emotional-spiritual methods, and behavioral recommendations in religious sources. Therefore, 8 weekly sessions of 45 minutes were held for each individual.

Medication: Medication was prescribed by a psychiatrist and using standard medication protocol for the patients suffering from dysthymia according to the Comprehensive Textbook of Psychiatry (Kaplan & Sadock, 2005) and considering the medications available in Iran. Type of medicine and its starting, continuing, and ending doses were selected by and at discretion of the psychiatrist, and suitable medicines were prescribed in a standard, but flexible design depending on disease symptoms and conditions. The sheet can be for evaluating symptoms and prescribing medicines which were completed by the psychiatrist were revised and confirmed twice by an assistant psychiatrist (professor of psychiatry).

The measurement tools included Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) and the Dysfunctional Attitude Scale (DAS-26). Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I) is a tool for diagnosis on the basis of DSM-IV criteria. Inter-rater reliability was reported acceptable on the basis of the kappa coefficient index (0.7) (First, Spitzer, Robert, Gibbon, Williams, & Janet, 2002). The DAS-26 measures underlying attitudes of cognitive content of depression symptoms on the basis of Beck Theory (Oliver, Murphy, Ferland, & Ross, 2007). Its original form contains 40 statements scored on a 7-point Likert scale. Its short form (DAS-26), which was used in this study, was made using its original form during a psychometric study in Iran. Its reliability was calculated using Cronbach's alpha method (92%) and its validity was reported through correlation with depressive disorders as diagnosed by the psychiatrist (0.55) with the total score of General Health Questionnaire-28 (GHQ-28) (0.56) (Ebrahimi & Mousavi, 2011).

SPSS software (version 16, SPSS Inc., Chicago, IL, USA) was used for data analysis and MANCOVA method with repeated measures was applied. Pre-test scores of DAS-26 and age were controlled as covariate variables.

Results

Subjects were 55% female and 45% male. Mean age of participants in the medication, cognitive-behavioral, and religious cognitive-behavioral psychotherapy experiment groups, and the control group was 32.26 ± 10.36, 31.25 ± 8.82, 31.81 ± 10.31, and 29.06 ± 9.5, respectively. Scores of dysfunctional attitudes of the experiment and control groups are reported in four experimental phases in table1.

MANCOVA analysis with repeated measures (Table 2) showed the significant affect of therapeutic intervention on the reduction of DAS-26 scores ($P < 0.001$). The effect of time (difference of different stages) was also significant ($P < 0.001$). Moreover, the interaction between type of therapy and stages was also significant ($P < 0.001$).

Paired comparison of the mean of groups using post hoc tests showed that experiment groups, except the medication group, were significantly different from the control group ($P < 0.05$). The SAPT group had more efficacy than the medication and cognitive-behavioral group ($P < 0.05$), but there were no differences between cognitive-behavioral and medication groups. Figure 1 shows mean DAS-26 scores of groups in four experiment stages.

Table 1: Mean and standard deviation of the DAS-26 in pre-test, 1 month after starting, post-test, and follow-up stages

Groups	Indices	Pre-test	One month after starting	Post-test	Follow-up
		Mean ± SD	Mean ± SD	Mean ± SD	Mean ± SD
Medical intervention (n = 15)	DAS-26 Scores	112.66 ± 26.19	102.40 ± 31.15	92.6 ± 17.4	89.8 ± 27.8
CBT (n = 16)	DAS-26 Scores	109.18 ± 24.15	95.62 ± 25.54	72.6 ± 26.7	65.3 ± 21.3
SAPT (n = 16)	DAS-26 Scores	115.25 ± 27.45	86.75 ± 31.83	65.5 ± 23.1	55.7 ± 20.6
Control group (Waiting list) (n = 15)	DAS-26 Scores	110.40 ± 26.35	107.40 ± 24.88	109.2 ± 25.5	113.3 ± 24.6

SD: Standard d; CBT: Cognitive behavioral therapy; DAS-26: Dysfunctional Attitudes Scale; SAPT: Spiritually augmented psychotherapy

Table 2: MANCOVA analysis with repeated measures of DAS-26 scores of experiment and control groups

Effect	df	F	P-value	Test power
Intervention effect	3.57	5.12	0.003	0.90
Time effect	3.55	5.73	0.001	0.96
Interactional effects of intervention and time	9.14	8.55	0.001	1.00

df: Degrees of freedom

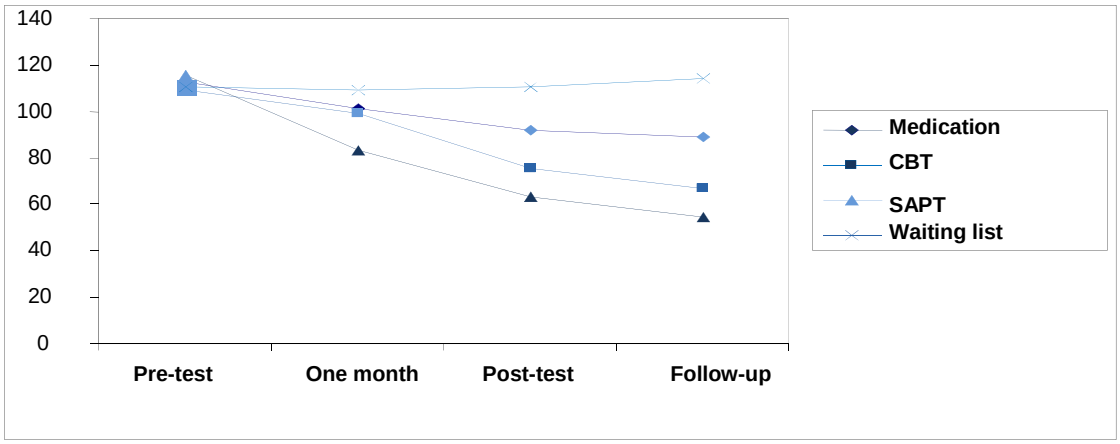

Figure 1: Mean scores of experiment and control groups in four experiment stages (pre-test, 1 month after starting, post-test, and follow-up)
CBT: Cognitive behavioral therapy; SAPT: Spiritually augmented psychotherapy

As shown in the above figure, SAPT had a considerable effect on dysfunctional attitudes over time; however, medicine had no considerable effect on attitudes.

Discussion

The findings revealed that SAPT had a higher efficacy in the reduction of dysfunctional attitudes compared with medication and CBT in post-test and follow-up stages ($P < 0.05$). Medication had no significant effect on the reduction of dysfunctional attitudes. Thus, it can be inferred that SAPT which was performed in a qualitative study (grounded theory) can be effective in the reduction of cognitive vulnerability of patients suffering from dysthymia.

The findings of this part of the research supported the viewpoint that spirituality-based therapies which concentrate on the components of control, meaning finding, identity, and communication can strengthen the efficacy of therapy through reducing depression components, especially in chronic depression, whether in combination with conventional psychotherapies or by themselves.

The findings of this research were in line with findings of the study by Azhar and Warma (1995). In their study, the results of the spirituality focused psychotherapy group was more significant than waiting list and medication groups at the end of intervention, but did not differ from that of the medication group in the follow-up stage. Furthermore, these findings supported that of Propst et al., 1992 and Azhar and Warma 1995. The results were similar to those of some studies in this field (Hofmann, 2006; Smitha et al., 2007; Avants, Beitel, & Margolin, 2005; Richards, Berrett, Hardman, & Eggett, 2006). Possibly, the effectiveness capability of spirituality-focused intervention is related to the fact that semantic-religious life teachings cause a feeling of orientation for life, support, and optimism for the clients (Peterson & Seligman, 2004). Moreover, when therapy is coordinated with cultural structures, spiritual needs, and religious thought of the patients, response to and acceptance of the therapy are improved (Smitha et al., 2007; Cole & Pargament, 1999). In addition, the findings of this research, regarding the effectiveness of SAPT, supported Bartoli's approach to the necessity of incorporating spiritual components in intervention designs for dysthymic disorder (Bartoli, 2007).

Another important finding of this study was the confirmation of CBT effectiveness in terms of the symptoms of the patients suffering from dysthymia. These findings were in line with broad meta-analysis results of the studies by Wampold, Minami, Baskin, and Callen (2002), and Chen, Lu, Chang, Chu, and Chou (2006) with regard to CBT effectiveness on dysthymic disorders. The mentioned studies showed that effectiveness of CBT was significantly different from that of the waiting list and pseudo-therapy conditions in all the stages (Wampold et al., 2002; Chen et al., 2006).

Confirming the efficacy of SAPT and its probable preference over the consistency of the effect of therapy and correction of dysfunctional attitudes supports this model's theoretical bases and shows the coordination between theoretical framework and therapeutic solutions. It seems that performing cognitive, behavioral, ontological, and spiritual strategies extracted from spiritual sources along with the application of other believing-behavioral skills such as meditation, prayer, and enjoyable spiritual activities have caused changes in dysfunctional attitude, mood, and behavior. Some examples of such spiritual sources consisted of the viewpoints of Imam Ali based on realistic attitude creation and expectations alignment with current realities (Majlesi, 1996), Imam Sadegh on creating and practicing a positive attitude toward the future and searching for positive points in past experiences to change the present mood (Koleini, 1996), and Imam Bagher on searching for meaning in hardship

and positive and divine interpretation of incidents (Ebn Abi Alhadid). Since the efficiency and acceptance of any type of psychotherapy depend on the adjustment of its content with cultural backgrounds and values of the people, SAPT is more suitable for Muslims. The authors agree with Peterson and Seligman (2004) that spirituality, and the mechanisms and interfaces such as the effect on personal coping processes, problem solving skill, increase of self-esteem, hope, sincerity, control, comfort, emotional support, spiritual support, and integrated (monotheistic) interpretation of the world are effective on the individual solidarity and well-being and increased intra-psychological abilities to change lifestyle.

Limitations

One of the limitations of this study was its short follow-up period (3 months); thus, it is necessary to have a longer follow-up period in future studies. Another limitation was that medical intervention which was compared with other methods was not a specified medicine with definite dosage, but medicines prescribed by different psychiatrists on the basis of standard protocol.

Conclusion

The results of this randomized clinical trial revealed that in Iranian patients with dysthymic disorder, because of their spiritual background, SAPT is more effective than medication and CBT in modification of dysfunctional attitudes.

Conflict of Interests

Authors have no conflict of interests.

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Evaluation of Narrative Therapy in the Decrease of Female Students' Identity Crisis in the Department of Sciences and Counseling of Islamic Azad University, Roudehen Branch, Roudehen, Iran

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Quantitative Study

Abstract

Background: The present research aimed to investigate the effect of narrative therapy on the decreasing of female students' identity crisis in the Faculty of Educational Sciences and Counseling of Islamic Azad University, Roudehen Branch, Roudehen, Iran.

Methods: The present study was a quasi-experiment with pre-test, post-test, and control group design. The statistical population included all the female students of the Faculty of Educational Sciences and Counseling of Islamic Azad University, Roudehen Branch, from among which, a sample of 36 students was selected based on the Berzonsky's Identity Styles Inventory (ISI-6G). The subjects were divided into experimental and control groups. The content of the sessions was based on the theory of narrative therapy which was designed by the researcher and administered for 8 sessions of 60 minutes.

Results: The obtained data were analyzed using analysis of covariance (ANCOVA). The results indicated that narrative therapy is effective in the decreasing of diffuse-avoidant identity style and increasing of informational style at a 0.05 level of significance.

Conclusion: With regard to the results of the present research, it can be concluded that this method can be of great importance in the treatment of depressed and anxious individuals. Therefore, this treatment, with regard to its flexibility and uniqueness, the techniques that individuals use in structuring their own stories, and the confrontation of the clients with themselves and not their thoughts, may be of greater importance in the future.

Keywords: Narrative therapy, Identity, Identity processing styles, Identity crisis

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Introduction

Adolescence is a high-risk period of life and adolescents are regarded as vulnerable strata of the society who need kindness, guidance, support, and counseling of their parents.

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According to Piaget, during the earlier stages of development, the individual's tangible behaviors and non-abstract thoughts are associated with the here and now; however, as the individual grows, s/he moves toward a theoretical ground and seeks to know who s/he is and who s/he will become (C. Crane, translated by Fadayi, 2009). Adolescence is a period of life during which the individual tries to establish an identity with high levels of sensitivity to the feedback of the environment and personal responsibility and find a reliable point to associate with self, other gender and sociocultural values of the environment (Shfrz, B, translated by Rasekh, 2004). The identity theory of Berzonsky emphasizes the cognitive perspective in the development of identity. According to Berzonsky (1990), identity is constructed and forged in continuous interaction with the physical and social world. Berzonsky names 3 distinct types of orientations as identity styles by which self-related information is reviewed, constructed, and used. Informational style tends to investigate different solutions and options to an issue prior to making commitment to one of them. Normative style considers growth as identifying with family and social expectations and presents a plethora of evidence of commitment to the expectations of people in authority. Diffuse-avoidant style tends to postpone commitment and decision-making based on forthcoming events (Berzonsky, 1993). How can we help adolescents to effectively and positively pass childhood and enter adulthood? This is a question posed to parents, trainers, researchers, and politicians. From a narrative approach, adolescence is a period of life in which adolescents are able to propose hypotheses, ideals, and images for the past, present, and future. This cognitive growth enables them to cope with problems using new perspectives (Hacker, 1994). We change, when our stories change. This perspective claims that we should not refer to the theories of others and it is enough to only refer to the next season of your own story if you want to know your identity and who you are. Narrative therapists encourage us to rely on the stories instead of the theories related to personality and psychological pathologies. Narrative therapists can help us understand who we are, who we have been, and who we can be. Narrative therapists, like literature critics, can help us invent new meanings and innovative interpretations (Prochaska and Norcross, translated by Seyyed Mohammadi, 2004). Sometimes, the adolescent cannot develop an integrative identity, find a job, or enter society. This is what Ericson calls role confusion (Ahadi and Mohseni, 2002). The process of the development of identity (Ericson, 1968), and narrative identity in particular, works with a method by which the adolescents predict and explain their past, present, and future. In this perspective, the growth of identity is not limited to adolescence, but related to all stages of life from childhood to adulthood (Mclean & Pasupathi, 2010). During adolescence, individuals' cognitive capacity grows and this enables them to seriously think about the past and the future, possibilities and impossibilities of life, their thoughts and other people's perception of them (Santrock, 2001; Hacker, 1994; Cotton, 1994).

Identity crisis denotes tension, conflict, or exclusion from a balanced state and deviation from the truth. Therefore, identity crisis occurs when some factors result in tension and maladjustment with self and other social groups. The most basic critical factors of identity take their roots from the conflict between psychological and cultural concepts, personal and group identity, political definition of the society, dominating values and standards, and conflicts with mental identities and other identities. The problem of identity emerges in different forms in different societies and has turned into a serious concern in the realm of politics. According to Binder, identity crisis is not necessarily the problem of a country, but the crisis of our era (Payne & Manning, 1992).

Today, the most important causative factor of this tension is global communications and the process of globalization that have led to interaction among cultures and a movement toward boundless globalization using innovative communication technologies (Ruiz, Fofonoff, Hines, VonHolle, McCann, Carlton, 1997).

Ericson has carried out a comprehensive research in the realm of identity crisis. He asserts that, while faced with identity crisis, the adolescent is confronted with intense inability, doubt in decision-making, feelings of isolation and emptiness, increasing inability to communicate with others, sexual function disorder, negative self-image, time disorientation, and time urgency (Ericson, 1968). According to Ericson, most young individuals used to start to accept occupational responsibilities and adulthood-related commitments when they came of age. However, by the end of the 20th century, the social changes that occurred in the United States of America and other Western counties prolonged the period of transference to adulthood (Cote, 2000). This transference period is simultaneous with the academic period at university. This period is called the emergence of adulthood by Arendt (1977). The expansion of the experience at universities allows the individuals to postpone work, marriage, parental roles, and other adulthood-related responsibilities, and therefore, the assignment of establishing and developing an integrated identity continues until the beginning of adulthood (Cote, J.E., 2000). There are different approaches to decreasing identity crisis, of which, narrative therapy can be mentioned.

According to Mclean and Pasupathi (2010), narrative approach is the best possible method to answer questions about the development of identity. Adams (1999) asserts that we construct a number of stories that establish our identity and we construct these stories as we live them. When a person retells his/her story, unity and relationship is observed between its different aspects and sections, and so, we can understand, the extent to which s/he has developed an integrated identity. The important point in this description is continuance and cohesion in time. Continuance and cohesion in time means feelings of cohesiveness during the story of life. With the increase in age, the transference from one place to another and the experience of different jobs and activities, the person still feels himself or herself as the first person. According to Ricoeur, time cohesion and the unity of the specific person during time are associated with his/her identity. In this question, the future is brought to light as much as the past.

The theory of narrative therapy is one of the approaches designed and developed by the experts in different social, economic, and cultural conditions dominating our societies. Therefore, it should be tested in different studies in order to approve its efficacy. Whether this approach can be used to decrease students' identity crisis is a controversial topic among scholars and experts of psychology and counseling

Methods

The main goal: Determining the effectiveness of narrative therapy in decreasing students' identity crisis

Alternative goals

- Determining the effectiveness of narrative therapy in informational identity styles
- Determining the effectiveness of narrative therapy in informational normative styles
- Determining the effectiveness of narrative therapy in diffuse-avoidant identity styles

Research hypotheses

- Main hypothesis: Narrative therapy will be effective in the decreasing of students' identity crisis.

Alternative hypotheses

- Narrative therapy will be effective on informational identity style.
- Narrative therapy will be effective on normative identity style.

- Narrative therapy will be effective on the diffuse-avoidant identity style.

The statistical population included all the female students who scored high on identity crisis in the School of Educational Sciences and Counseling of Islamic Azad University, Roudehen Branch, Iran, during the 2013-2014 academic years. The present research aims to investigate the effectiveness of narrative therapy in decreasing identity crisis among the female students of the School of Educational Sciences and Counseling. Based on the content and goal of this research that required data gathering and relationship analysis, the present research employs a semi-experimental method with pre-test and post-test design. All the moral and ethical issue of the research were considered in all stages of the study including obtaining written consent from the students to undergo the research, congruence of the research with cultural and religious beliefs of the subjects, lack of knowledge of the control group about the training, honesty, and confidentiality.

The Identity Styles Inventory (ISI-6G) was first designed and developed by Berzonsky (1990) to measure cognitive-social processes used by adolescents to cope with identity-related issues. Based on the perspective of Berzonsky, adolescents choose 3 different processing identity styles. This 40-item questionnaire evaluates 3 identity styles including informational, normative, and diffuse-avoidant styles. The answers are scored on a 5-point Likert scale from completely agree to completely disagree. The items of 9, 11, 14, and 20 are reversely scored. This questionnaire includes 11 items for informational style (2, 30, 26, 25, 18, 16, 6, 5, 37, 33, 35), 9 items for normative identity style (4, 10, 19, 21, 23,, 23, 28, 32, 34, 40), 10 items for diffuse-avoidant identity style (3, 8, 13, 17, 24, 27, 29, 31, 36, 38), and 10 items for commitment (1, 7, 9, 11, 12, 14, 15, 20, 22, 39). Berzonsky (1990) has reported the Cronbach's alpha of the questionnaire for informational, normative, diffuse-avoidant, and commitment styles to be equal to 0.71, 0.65, 0.75 and 0.78, respectively. Moreover, the reliability coefficient using test-retest after a 2 month-interval was reported to be between 0.71 and 0.75. This questionnaire was used to evaluate identity crisis of female students of the School of Educational Science and Counseling both prior to and subsequent to narrative therapy sessions.

In order to administer this research, the research plan of narrative therapy sessions for decreasing identity crisis was publicly announced in the School of Educational Sciences and Counseling. The ISI-6G was administered and 36 individuals who had obtained a score of above 19 were randomly selected and assigned to experimental and control groups. The experimental group underwent 8 weekly sessions of narrative therapy lasting 60 minutes while the control group did not receive any training. Both groups were evaluated using ISI-6G prior to and subsequent to the training.

Descriptive and inferential statistics were used in this research. Frequency, percentile frequency, mean, and standard deviations were used to describe the data. Moreover, analysis of covariance (ANCOVA) was used to determine between-group differences.

Results

Descriptive indices

In total 36 subjects participated in the present study, 18 subjects in each group.

As observed in table 1, 11.11% (4 subjects) of the respondents were under the age of 20, 72.22% (26 subjects) were between 20 and 24 years old and 16.67% (6 subjects) were over 24 years old.

Table 1. Frequency distribution of age in the study subjects

Age (Year)	Frequency (%)
< 20	4 (11.11)
20-24	26 (72.22)
> 24	6 (16.67)
Total	36 (100)

As observed in tables 2 and 3, the comparison of the mean scores of post-test and pre-test in the experimental and control groups indicate that the mean scores of post-test have increased in the informational style; however, they have decreased in the normative and diffuse-avoidant styles.

In order to test the hypothesis that narrative therapy will be effective in decreasing students' identity crisis, ANCOVA was employed on the subscales of identity and its changes in the experimental group as compared to the control group. We concluded that, narrative therapy has been effective in decreasing identity crisis among the female students of the School of Educational Sciences and Counseling.

Second hypothesis: Group narrative therapy training will be effective on informational identity style of female students of the School of Educational Sciences and Counseling.

Levene's assumption which was used to investigate the variance equality of the dependent variable among different groups (experimental and control groups) indicated that the variance of the dependent variable is homogenous between these groups ($f = 0.276$, $df_1 = 1$, $df_2 = 34$, $P = 0.603$). Therefore, ANCOVA can be employed.

With regard to the data presented in table 4, ($f = 176.286$, $\alpha = 0.05$), the null hypothesis is rejected and the research hypothesis is confirmed (95%). Consequently, we can conclude that narrative therapy is effective on the informational orientation of students. The Etta value indicates that 83.8% of the changes in informational orientation of students resulted from group narrative therapy.

Second hypothesis: Group narrative therapy training will be effective on normative identity style in female students of the School of Educational Sciences and Counseling.

Levene's assumption which was used to investigate the variance equality of the dependent variable among different groups (experimental and control groups) indicates that the variance of the dependent variable is homogenous between these groups ($f = 0.182$, $df_1 = 1$, $df_2 = 34$, $P = 0.672$). Therefore, ANCOVA can be employed.

With regard to the data presented in table 5, ($f = 10.13.136$, $\alpha = 0.05$), the null hypothesis is rejected and the research hypothesis is confirmed (95%). Therefore, we can conclude that narrative therapy is effective on normative orientation in students. The Etta value indicates that 62.6% of the changes in normative orientation of students resulted from group narrative therapy.

Third hypothesis: Group narrative therapy training will be effective on diffuse-avoidant identity style in female students of the School of Educational Sciences and Counseling.

Levene's assumption which was used to investigate the variance equality of the dependent variable among different groups (experimental and control groups) indicates that the variance of dependent variable is equal between these groups ($f = 0.142$, $df_1 = 1$, $df_2 = 34$, $P = 0.708$). Therefore, ANCOVA can be employed.

Table 2. Descriptive indices of the studied variables in the pre-test (experimental and control groups)

Group	Mean ± SD	Max	Min	Mean ± SD	Max	Min
Informational orientation	27.27 ± 3.76	33	19	27.38 ± 4.18	33	21
Normative orientation	37.44 ± 4.38	43	27	37.88 ± 3.92	28	43
Diffuse-avoidant orientation	41.94 ± 3.58	48	35	42.11 ± 4.01	48	35

SD: Standard deviation

Table 3. Descriptive indices of the studied variables in the post-test (experimental and control groups)

Group	Mean ± SD	Max	Min	Mean ± SD	Max	Min
Informational orientation	45.22 ± 3.76	52	38	27.77 ± 4.10	35	21
Normative orientation	27.33 ± 4.52	34	17	37.94 ± 3.88	43	29
Diffuse-avoidant orientation	32.22 ± 3.73	38	25	41.94 ± 3.90	49	36

SD: Standard deviation

Table 4. The results of covariance analysis for the first hypothesis

Source of change	SS	df	MS	F	P	Etta coefficient
Covariate's effect	47961.000	1	47961.000	3087.098	< 0.001	0.989
Group (experimental/group)	2738.778	1	2738.778	176.286	< 0.001	0.838
Error	222.528	34	15.536			
Total	50922.306	36				

SS: Total sum of squares; MS: Mean square; df: Degrees of freedom

Table 5. The results of covariance analysis for the second hypothesis

Dependent variable of post-test (normative)						
Source of change	**SS**	**df**	**MS**	**F**	**P**	**Etta coefficient**
Covariate's effect	38350.694	1	38350.694	2155.444	< 0.001	0.984
Group (experimental/group)	1013.362	1	1013.361	56.954	< 0.001	0.626
Error	604.944	34	17.792			
Total	39969.000	36				

SS: Total sum of squares; MS: Mean square; df: Degrees of freedom

Table 6. The results of covariance analysis for the third hypothesis

Dependent variable of posttest (diffuse-avoidant)						
Source of change	**SS**	**df**	**MS**	**F**	**P**	**Etta coefficient**
Covariate's effect	49729.000	1	49729.000	3233.547	< 0.001	0.990
Group (experimental/group)	880.111	1	880.111	57.228	< 0.001	0.627
Error	522.889	34	15.379			
Total	51132.000	36				

SS: Total sum of squares; MS: Mean square; df: Degrees of freedom

With regard to the data presented in table 6, ($f = 880.111$, $\alpha = 0.05$), the null hypothesis is rejected and the research hypothesis is confirmed (95%). Therefore, we can conclude that narrative therapy is effective on diffuse-avoidant orientation in students. The Etta value indicates that 62.7% of the changes in diffuse-avoidant orientation of students resulted from group narrative therapy.

Discussion

The experimental and control groups had similar pre-test scores; however, significant differences were observed between the groups. The results indicated the effectiveness of narrative therapy in decreasing students' identity crisis. Therefore, as expected, the employment of group narrative therapy had effect on the students' identity style scores. A body of research in personality psychology (McAdams, 2001; Singer, 2004)indicates that, identity takes the form of an integrated narrative or life story in adulthood that integrates the past interpretations with present self and gives meaning and purpose to life (Pals, 2006). Narration is the main process by which the identity grows and it is the behavior that indicates the present status of an individual's identity (Kroger, 2003; Nelson, 2003; Mclean & Pratt, 2006; Mclean & Pasupathi, 2010; McAdams, 1995) In fact, narration can be the best explanation to the questions "Where have we come from?" and "Where are we going to?", and the relationship between these two. It means that, individuals achieve a perception of the role of the past in shaping who they are now and the future orientation of past and present through the process of narrating their experience Different articles on identity styles have reported that these styles can be separated by two fundamental aspects (Soenens B., Duriez. B. & Goossens L., 2005). According to Berzonsky (1990), these aspects can have names such as "superficial information process and identity-related issues" and "maintaining marinating and supporting traditional beliefs versus broad-

mindedness and democracy". The first aspect distinguishes the two informational and diffuse-avoidant styles and the second aspect separates the two informational and normative styles. With regard to the first aspect, Berzonsky and Ferrari, J.R. (1996) realized that groups with informational style show higher levels of cognitive complexity and select regular and conscious processing styles in their decision-making. However, individuals with diffuse-avoidant style have lower levels of cognitive complexity, are afraid of confronting events and postpone them.

With regard to the second aspect, studies indicate that individuals with informational identity style have higher levels of openness to receiving self-related information and personal identity (Schwartz et al., 2004). Adolescents with informational identity style move appropriately toward self-exploration and getting to know their important characteristics in Ericson's stage of achieving identity. This style is associated with 1) high self-thinking and active information process and 2) openness for receiving new information (Soenens B., Duriez. B. & Goossens L., 2005). Diffuse-avoidant identity style is the result of an disintegrated and separated identity structure (Soenens B., Duriez. B. & Goossens L., 2005). As previously mentioned, the establishment of personality is related to the cohesion and level of insight in life stories (Mclean & Pratt, 2006). It seems the administration of the narrative therapy protocol in 8 group sessions for the students has caused a significant differences between the two groups. The research results showed that what we make of our life establishes the foundation of our identity and we live in line with our constructed stories. In this viewpoint, identity is an integrity and the individual unites his/her specific experience throughout his/her life. When a person retells his/her story, the unity and relationship is observed between its different aspects and sections and so, we can understand, the extent to which s/he has developed an integrated identity. The important point in this description is the continuance and cohesion in time. Continuance and cohesion in time means feelings of cohesiveness during the story of life. With the increase in age, the transference from one place to another and the experience of different jobs and activities, the person still feels himself or herself as the first person.

Based on the results of the present research and the effectiveness of narrative therapy in the decrease of identity crisis, it is recommended that authorities of universities and other institutes plan and deliver appropriate educational services to decrease identity crisis to establish successful identities. Moreover, this method can be used as an effective complimentary method in combination with other methods. With regard to the results of the present research, it can be concluded that, this method can be of great importance in the treatment of depressed and anxious individuals. Therefore, a bright future is waiting for this treatment and individuals welcome this treatment more than other treatments with regard to its flexibility and uniqueness and the techniques that individuals use in structuring their own stories, and the confrontation of the clients with themselves and not their thoughts.

Conflict of Interests

Authors have no conflict of interests.

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