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Table of Contents

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To be Masked or to be Image; the Presence Dilemma in the COVID-19 Pandemic

Farzad Goli[1]

[1] Professor, Faculty Instructor, Energy Medicine University, California, USA AND Danesh-e Tandorosti Institute, Isfahan, Iran

Corresponding Author: Farzad Goli; Professor, Faculty Instructor, Energy Medicine University, California, USA AND Danesh-e Tandorosti Institute, Isfahan, Iran
Email: dr.fgoli@yahoo.com

Editorial

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When we talk about presence, we imagine an in-person, full attention, and whole-hearted communication. Presence illustrates shared space-time, attuned minds, and synchronized bodies. Nevertheless, what can we imagine about the experience of presence in a virtual communication? Do different places and times impede the presence experience? Is it possible to have attunement and synchronization with others in a virtual space?

To be honest, before the Covid-19 pandemic, I felt that a virtual contact could not be real and authentic. I thought that presence is something that happens between bodies. In spite of plenty of virtual meetings with my clients, my orthodox beliefs around presence and the healing atmosphere had not allowed me to affirm the positive outcomes of such therapy sessions. I usually used to narrate them as inhibited and imperfect relationships. I should confess that I had read many original and review articles that showed no significant difference in the efficacy of online psychotherapy in comparison with face-to-face treatment, but I personally was suspicious of the generalizability of the results to the clinical setting.

During the pandemic state, I – like many other psychotherapists – encountered a dilemma of either having an in-person and masked meeting or a virtual, unmasked one. I should think about 2 barrier systems in our communication trajectory. On the one hand, I faced semi-covered mimics, damped breathing, and fearful bodies and, on the other hand, I met two-dimensional closeups with occasional technical interruptions. Which way could be the better way to rapport and healing?

We were gradually pushed to the virtual meetings despite my resistance and that of my clients. After a while, my clients and I preferred to suspend our beliefs about the magic of face-to-face meetings, especially when you can have to the utmost a masked face-to-masked face visit!

Evidently, these adjustments and changes in our manner of thinking and communicating like other evolutions in life were the result of necessity. After the deconstruction of my traditional web of beliefs around communicative action, now, I can see more clearly that the presence experience even in in-person relationships is something nonlocal. Intercorporeality and mirroring arise from attunement of emotions and intentionalities do not arise from the spaces amongst bodies.

The online therapy sessions and webinars, like in-person communications, can prepare the cathartic and insightful experiences rely on intersubjective and intercorporeal resonances.

It seems that coronavirus is working as a digitalization accelerator of the personal and professional relationship and communication. However, a mindful and experimental approach to this virtual level of organization, namely Cybersphere, can improve health. We cope with the Cybersphere in the same way that we deal with the biosphere, community, and family.

This spring we will publish a special issue on "online psychosocial support of caregivers in the COVID-19 pandemic". Therefore, we can also think about such a virtual healing atmosphere for caregivers to help them heal their distress and fatigue, especially in these extremely challenging times in the pandemic. We hope that this program can evoke a higher sensitivity in the field of caregivers' health and lead us to a more positive attitude towards a virtual presence and its healing potentials.

Conflict of Interests

Authors have no conflict of interests.

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Online Psychosocial Support for Caregivers in China during COVID-19 Pandemic

Ulrich Sollmann[1]

[1] Body Psychotherapist and Executive Coach, Guest Professor, Shanghai University of Political Science and Law (SHUPL), Höfestr, Germany

Corresponding Author: Ulrich Sollmann; Body Psychotherapist and Executive Coach, Guest Professor, Shanghai University of Political Science and Law (SHUPL), Höfestr, Germany
Email: dr.fgoli@yahoo.com

Theoretical Study

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In November 2019, a novel coronavirus disease (COVID-19) was first reported and then became widespread within Wuhan, the capital city of Hubei Province of China. The disease widely spread to elsewhere. On March 9 2020, WHO declared COVID-19 a global pandemic. COVID-19 has become a pandemic with substantial mortality and poses an enormous challenge to healthcare system in China at early stage (Wang, Horby, Hayden, & Gao, 2020). And healthcare givers presented varying degrees of psychological reactions related to the epidemic situation. Previous studies that reported the occurrence of psychological symptoms, including anxiety, depression, and stress-induced complications, among Chinese healthcare staff during the SARS and COVID-19 outbreaks in China (Huang, Han, Luo, Ren, & Zhou, 2020; Lung, Lu, Chang, & Shu, 2009; Lu, Shu, Chang, & Lung, 2006]. Though the outbreak of COVID-19 in China is largely under control, other countries are still struggling to control the pandemic. The experience of psychological support for medical workers in China can be spread to other districts.

During the COVID-19 pandemic, preventative behaviors such as wearing masks and reduce social contact are effective measures to control infection. The consequences of mass quarantines to contain the spread of the viral epidemic have highlighted the challenges of delivering psychological care to caregivers. So that traditional face to face communication was not suitable during major public health event. Rapid adoption of virtual psychosocial support will be critical to provide ongoing and timely psychological care. In this review, we summarized the methods of online psychosocial support for caregivers during COVID-19 pandemic.

How many medical workers had accessed psychological support online ?

Cross-sectional studies at early stage of COVID-19 in China in medical staff revealed that medical staff accessed limited mental healthcare services, but distressed staff saw

these services as important resources to alleviate acute mental health disturbances. Among the 263 participants, 50.4% of medical staff had accessed psychological resources available through media (such as online push messages on mental health self help coping methods). (Kang, et al, 2020).

How the online psychological support organized ?

All of the psychological support methods were enforced by local government and academic community. On Jan 27, 2020, the National Health Commission of China published a national guideline of psychological crisis intervention for COVID-19 (Commission GOOT, 2020). For example, the local government of Wuhan implemented policies to address mental health problems of medical staff. Four teams were established to offer psychological support for caregivers by Mental Health Center of Wuhan. Firstly, the psychosocial response team (managers and press officers in the hospitals) coordinated the management team's work and publicity tasks. Secondly, the psychological intervention technical support team (senior psychological intervention experts) was responsible for formulating psychological intervention materials and rules, and providing technical guidance and supervision. Thirdly, the psychological intervention medical team, who are mainly psychiatrists, participates in clinical psychological intervention for health-care workers and patients. Lastly, the psychological assistance hotline teams (volunteers who have received psychological assistance training in dealing with the COVID-19) provide telephone guidance to help deal with mental health problems (Kang, et al, 2020).

Another tertiary general hospital located in Changsha, Hunan province. However, the implementation of psychological intervention services encountered obstacles, as medical staff were reluctant to participate in the group or individual psychology interventions provided to them. Moreover, some nurses showed irritability, unwillingness to rest, and signs of psychological distress, but refused any psychological help and stated that they did not have any problems. Then measures of psychological intervention were adjusted, the hospital offered rest place to allow medical staff isolating themselves from their families and communicating with their families by video (Chen, et al, 2020).

The expert consensus on the mental health treatment and services for major psychiatric disorders had described the assessment and treatment issues of internet-based mental health services during the COVID-19 outbreak and ensured the quality of online mental health services(Commision GOOT, 2020).

The evaluation tools, main psychological problems and online platforms for online psychological support

Simple questionnaires were used to evaluate the psychological problems, such as PHQ-9 (patient health questionnaire-9) for depression, GAD-7 (generalized anxiety disorder-7) for anxiety, insomnia severity index for insomnia and IES-R (impact of events scale- revised) for stress related symptoms. The questionnaires were distributed through WeChat-based survey programme Questionnaire Star.

Online mental health education were provided by communication platforms WeChat, Weibo, and TikTok, were widely used during the outbreak for medical staff. Also, online psychological counselling services were offered through program like WeChat and zoom by mental health professionals in medical institutions, universities, and academic societies, which provide free 24-h services on all days of the week. Online psychological self-help intervention systems, including online cognitive behavioral therapy for depression, anxiety, and insomnia were developed(Liue, et al, 2020).

The problems of psychological support for medical workers

There was no study concerning the effect of online psychological support for medical staff. So the information of effectiveness of online psychosocial support was limited during COVID-19 pandemic. But previous studies had proven online psychotherapy to be a promising method. The online self-help courses, mediation, and CBT had shown effectiveness in depression and anxiety patients (Lamb, Pachana, & Dissanayaka, 2019).But online psychotherapy can not mirror in-personal therapeutic efficacy(Church, & Clond, 2019).

There were some barriers for medical staff to receive psychological care. Medical workers were reluctant to participant in the online courses. As for the strict prevention measures, psychiatrist or psychological therapist were not allowed to the bed of COVID-19 patients. So the medical workers became the main personnel to comfort patients and they need more information to relieve the distressed patients. The online psychological support should include this content (Duan, & Zhu, 2020).

The online psychological support was convenient and suitable for the period of infectious disease pandemic. The psychosocial evaluation and intervention could be finished online. But the effectiveness of online intervention during COVID-19 was still unclear. And the online psychological support could not meet all requirements of medical staff. The online psychological intervention should be combined with satisfaction of physical needs. Also, if the online mental health service would adapted to other countries and districts, local cultural should be considered, such as the accessibility of internet services for psychological support.

Conflict of Interests

Authors have no conflict of interests.

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A Survey of the Experience of Living with HIV+/AIDS from the Perspective of Ahvazi Women Focusing on Educational Needs and Empowerment: A Qualitative Study

Mahboobe Bahrami[1], Shahla Molavi[2], Azadeh Malekian[3]

[1] Department of Psychiatry, Behavioral Sciences Research Center, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran
[2] PhD, Department of Health Psychology, School of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran
[3] Psychosomatic Medicine Fellowship Degree Certified by Freiburg University Clinic; Ferdosi Research Center, Isfahan Health Management Sector, Social Security Organization, Isfahan, Iran

Corresponding Author: Shahla Molavi; ***PhD, Department of Health Psychology, School of Medicine, Ahvaz Jundishapur University of Medical Sciences, Ahvaz, Iran***
Email: shahla_molavi@yahoo.com

Qualitative Study

Abstract

Background: In Iran, there is a significant increase in women living with HIV+/AIDS. In a cultural, social, and political context, educational and empowerment needs are still considered a challenging issue among these women. The purpose of this qualitative study was to examine the experience of living with HIV+/AIDS from the perspective of women in Ahvaz, Iran, focusing on educational needs and empowerment.
Methods: The present qualitative study was a descriptive phenomenology conducted in 2020. The research context included all educational, therapeutic, counseling, and support centers, governmental and non-governmental HIV/AIDS associations and institutions located in Ahvaz. The statistical population of the study included all women with HIV and AIDS. The study participants were selected using purposeful and snowball sampling method. Semi-structured open interviews (individual and face-to-face) were selected as the primary and central approach to data collection.
Results: The findings showed that the 5 identified themes of understanding the experience of focusing on educational needs and empowerment in women were severe suffering (shock, anger, resentment of the family and friends, and feelings of isolation), disapproval (prejudices, stereotypes, and taboos related to HIV in society, and feeling of lack of social support), insecurity in social and economic life (lack of readiness for cultural and social participation, equality or inequality in empowerment, assessing relationships based on economic criteria, and doubts about improving health), disrespect (disrespect for unique characteristics, and insult and slander), and hardship in protection (continuing to control health status information).
Conclusion: It can be concluded that the educational and empowerment needs of patients with AIDS/HIV+ should be taken into consideration. Mobilizing individuals, specialists, and providers of counseling and care services in different sectors to gain a better understanding of the complex nature of the phenomenon of non-compliance with the right to empowerment will be useful.
Keywords: Female; Acquired immunodeficiency syndrome; Qualitative research

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Introduction

Although HIV+/AIDS has been identified and its medical dimension have been discussed, its cultural, social, and economic dimensions are also critical and play a decisive role in its growth and rate of increase, and the context of its various health, social, cultural, and economic consequences. It is transmitted at the community level (Lesch et al., 2007). HIV+/AIDS is not only one of the most devastating and terrifying diseases of the present age, but also a new and unique social phenomenon that affects almost all aspects of social and economic life. HIV+/AIDS has a profound effect on the lives of those infected (Deeks et al., 2016). Health, family life, group and social activities, economic development, and personal development are factors affected by this disease. The belief that people are infected intensifies the adverse effects. "From a social point of view, this disease has become a social construct, and more specifically, social stigma or an issue that targets the social dignity of the sufferer at different levels" (Remien & Rabkin, 2001).

It should be noted that individuals' assessments of and responses to stressors indeed stem from their personalities, histories and life experiences, and personal characteristics. Individuals' coping responses to single stress are different, and therefore, individuals have different interpretations of stress, and each individual's adaptation method is unique (Kohan, Mohammadali Beygi, Fathizadeh, & Malbousizadeh, 2008). For example, Kohan et al. (2008) concluded that the lack of family and social support and support from health care system due to inappropriate labeling and judgments forced patients to make maladaptive responses, including denial and avoidance, and in the long run, this increases the symptoms of helplessness such as depression and anxiety in HIV/AIDS patients (Ndlovu, Ion, & Carvalhal, 2010). Moreover, similar studies conducted in Canada in 2010 and Uganda in 2009 showed that seeking and benefiting from social support has been an active adaptive strategy used by people living with HIV/AIDS (Khani, Bidarmaghzi, Majdi, Azadmarzabadi, Joharinia, Shakeri, 2012). The use of dysfunctional coping strategies in HIV/AIDS patients, such as avoidance and lack of adoption of active and effective coping strategies in the face of stress, increases their mental and psychological problems and physically, psychologically, and socially endangers patients (Razavi et al., 2012). Numerous global studies on chronic diseases such as HIV/AIDS have shown that the use of unhealthy and destructive strategies has a direct relationship with high levels of stress, low quality of life (QOL), and the adoption of high-risk behaviors (MacLachlan et al., 2016).

Furthermore, empowerment is another structure that should be considered in patients with AIDS/HIV. Empowerment is a practical tool that promotes the growth and elevation of individuals' knowledge and skills. The application of its solutions is an obvious goal for the promotion of the health of communities (van den Berg, Neilands, Johnson, Chen, & Saberi, 2016). Empowerment could significantly improve the awareness, knowledge, self-esteem, and self-efficacy of patients and their home caregivers in caring for patients with chronic diseases (Bhatta & Liabsuetrakul, 2016).

There is a consensus in the social work literature that applying the principles of empowerment to work with women is beneficial (Caetano & Pagliuca, 2006). The results of a meta-analysis also showed that women's and mothers' ability improves their social functioning and psychological health (Fargher et al., 2020). In other words, women's psychological empowerment enhances the quality of their motherly role. It reduces the family's psychological distress, and finally, the resulting active participation of women in society leads to an increase in their interpersonal and

political authority (Rosenberg, 2018). Empowerment is defined as involving clients and their families in making decisions for their health and well-being in cases that require the power or ability to make decisions. Empowerment means promoting good faith and positive adaptation, a sense of power control, and helping others achieve goals. In other words, empowering the client helps them understand their needs and how to solve their problems. Another definition of the principles of empowerment is the ability to solve problems, be self-reliant, and build self-confidence; thus, empowerment is recognized as a key element in promoting public health (Parker & Aggleton, 2003).

The present study was necessary because the cultural, social, and political structure that women living with HIV experience. This fact seems to be a significant issue in understanding the educational and empowerment needs of these individuals, which are essential and fundamental. In the past, many women in our society have continued their daily lives without realizing their educational needs and need for empowerment. Still, in the current situation where the possibility of self-awareness has been provided for many of them, the needs for education and empowerment in society have become an issue. Even if the existing literature obscures the general idea of meeting educational needs and empowerment in terms of patterns, recipients, frequency, consequences, causes, reactions, and factors, little is known about the unique experience of Iranian women living with HIV. Therefore, it can be said that enhancing the potential of women living with HIV+/AIDS in communities is essential to achieve educational, social, cultural, and economic development. Therefore, according to what has been said, the purpose of this study was to investigate the experience of living with HIV+/AIDS from the perspective of women in Ahvaz, Iran, with a focus on educational needs and empowerment.

Methods

The present qualitative study was a descriptive phenomenology that was conducted in 2020 in order to explain and analyze the experiences of HIV/AIDS patients in living with this phenomenon. The research context included all educational, therapeutic, counseling, and support centers, government and non-governmental HIV/AIDS associations and institutions located in Ahvaz. The statistical population of the study included all women with HIV and AIDS, and the primary method in selecting participants was the goal-based method. Of course, the snowball method was simultaneously used; some patients were asked to introduce other people who had the same infection as them and had experienced this phenomenon. This method seems appropriate due to the growing prevalence of AIDS in Iran and some patients' decision to hide their diagnosis. Semi-structured open interviews (individual and face-to-face) were selected as the primary and central approach to data collection. The study inclusion criteria were definite HIV diagnosis, no mental health problems such as depression, age of at least 20 years and at most 55 years, and Arab women with a fluent translator, ability, and possibility to establish suitable communication. To collect data and access valid and real information, the 3 approaches of in-depth semi-structured interviews, descriptive notes, and diary or life stories of the participants and field notes were used. The number of sessions and the duration of each interview varied according to the content of the topic and the conditions of each participant. They depended on various factors such as time, willingness, tolerance, and individuals (their physical and mental condition). In this process, according to the initial coordination, the interviews were recorded. The researcher conducted

narrative interviews from June to September 2020. The interviews lasted from 35 to 80 minutes and, if allowed, the audio sample was recorded on tape, and then, transcribed verbatim. Rich data from participants' experiences were saturated after the interview was completed.

Results

The mean ± SD age of the participants was 80.7 ± 11.42 years. The minimum and maximum age of participants was 33 and 56 years, respectively.

Theme 1: Severe suffering

Shock, anger, and resentment of family and friends: One source of suffering, shared by all participants collectively, was the reactions of those around them and the secrets of the disease, which seemed to them to be more of an unexpected and accidental event. These reactions included shock, anger, rage, and disgust. "Now, my mother has completely separated my toilet; my food is also completely separated."

Feelings of isolation: Without exception, all the women interviewed experienced loneliness, which meant being separated from the world. Some were entirely cut off from their society. Some reported the danger of isolation that threatened them. "The teacher, realizing that I was ill, took me to a classroom to sit alone ... She did not let me go out ...She said I should be alone."

Theme 2: Disapproval

Prejudices, stereotypes, and taboos related to HIV in society: The women in this study mentioned prejudices, stereotypes, and taboos associated with HIV. Participants indicated that they had experienced disapproval, opposition, and rejection in their daily lives. "Everywhere I went to work, they heard that I had this disease and they told me no. I am looking for a job. Even when I worked, I was told that I was no longer insured because I have this disease and I was fired."

Feeling of lack of social support: Feeling of lack of social support was a sub-theme that most of the women in our study mentioned and was essential to demonstrating educational and empowerment needs. This sub-theme was described in different ways, depending on each woman's experience. Support was interpreted as a desire or expectation and a reason for empowerment. The positive effects of support helped the participants adjust to their reality and to end disrespect: "Yeah, I had much support in my life and ... now I think this is very important and necessary."

Theme 3: Insecurity in social and economic life

Lack of readiness for cultural and social participation: Not all women living with HIV/AIDS were equally prepared to report and to be asked tough questions about their social and economic life insecurity. This theme included a detailed analysis of aspects related to equality or inequality in empowerment: "I want to say, but I cannot say anything because I know I am alone. "The greatest difficulty in my life is that I am lonely ... I mean, my wife, my marriage."

Assessing relationships based on economic criteria: The lack of empowerment that these women perceived. "Doctors performed the tests with difficulty. The cost of tests and medications was high. I did not have insurance. "Doctor ... when they saw that we had this problem, they donated $10 for the tests."

Doubts about improving health: Most participants persisted in doubting their health. They gave vague explanations for their deteriorating health: "There is no cure for this disease ... they say it is like this here ... it is not like this abroad ... I am not well ...".

Theme 4: Disrespect

Disrespect for unique characteristics: The fourth theme shows the importance of

maintaining respect for empowerment and respect for equality among these women. For these women, respect for the right to empowerment is a matter of personal rights. Having the freedom for their unique feminine characteristics and the distinctive features of each lived experience: "We have specific and non-specific facilities in medical centers ... these are not officially stated ... facilities are forbidden and for somebody... what does this mean?"

Insult and slander: Several participants did not describe being HIV positive as a sin, a bad self-image, and a sense of worthlessness and unworthiness. They considered themselves good people who had been infected with the virus: "For a month I just cried and did nothing. I had not committed a sin. Why should I get this disease?"

Theme 5: Effort and difficulty in protection

Continuing to control health status information: Participating women protected themselves and their loved ones from potential threats by limiting the number of people with whom this information was shared. Several participants continued to control their data while maintaining their status. This control was considered an excellent way to protect themselves from risks and other negative consequences, such as exclusion and discrimination. "I did not tell anyone that I had the disease. When I tell someone, I feel that their reaction changes compared to before ... I have a fear in my heart, and I do not tell anyone because of the fear I have ... If my colleagues find out ... I am afraid of losing my job. "

Discussion

The purpose of our qualitative study was to examine the experiences of living with HIV+/AIDS from the perspective of Ahvazi women with a focus on educational needs and empowerment. This study's primary goal in this field was to extract the meaning of educational needs and empowerment from the participants' recorded statements. In our research, the life experience of women living with HIV/AIDS is described as a dynamic and evolving process of meeting educational.

Our study results demonstrate the complexity of the experience of meeting educational needs and empowerment in terms of stratifications. These results confirm the concept of the status position defined in Max Weber's theory of social stratification, which, according to his definition, is any component of a kind of human life that is determined based on a social assessment, negative or positive, specific to respect (Caetano & Pagliuca, 2006). Dignity groups are based on similar lifestyles and can have both negative and positive points (MacLachlan et al., 2016). According to Weber, different degrees of social status are the source of the emergence of social strata composed of holders of similar social bases (22). Weber believes that social status with its interdependence is the primary basis for the distribution of facilities and resources among individuals (van den Berg et al., 2016).

The experience of educational and empowerment needs in these women showed the intense suffering from non-compliance, the first theme, revealing their HIV-positive status to others and the reactions of relatives and confidants toward their illness, and isolation. All of these aspects define the suffering experienced by Iranian women living with HIV/AIDS, which confirms the literature on the "burden of secrecy" that can itself lead to severe isolation (Bhatta & Liabsuetrakul, 2016).

The second theme is described as power relations in educational and empowerment needs. We agree with Parker and Aggleton (2003) in that conceptualization of stigmatization as an "external process" reinforces social inequalities and existing power relations. Based on our results and those of Parker

and Aggleton (2003), it seems reasonable to think of stigma as entirely beyond the individual level and as a social process; a process in which interventions can change the social, cultural, and political context. It is a painful and uncontrollable reality that increases the complexity of educational and empowerment needs.

The third theme is described as persistent insecurity. In the community of women living with HIV/AIDS, the constant feeling of insecurity is an unpleasant, painful, and humiliating feeling that not only testifies to, but also supports and reinforces inequality in educational needs and empowerment among these women.

The fourth theme, disrespect for education and empowerment needs, extends to understanding the experience of inequality in terms of respect for education and empowerment needs. Social conditions can contribute to an imbalance in respect for the educational needs and empowerment of women living with HIV. Interpersonal relationships play a significant role in these circumstances.

The difficulty in protecting the right to empowerment (theme 5) is confirmed by what some authors have written about the reasons for inequality in education and empowerment needs (Fargher et al., 2020; Rosenberg, 2018); writings that are primarily intended to prevent harmful effects, such as fear of rejection, disregard, social isolation, and discrimination, on the individual, although they also avoid the prevention of some worrying adverse effects (Parker & Aggleton, 2003).

The concepts and points of view that the authors have described in detail provide a fundamental understanding that is the basis for the sociology of women's empowerment. However, it can never be claimed that the theories of educational needs and empowerment are inextricably linked to the experience of women living with HIV/AIDS. Women's social groupings are essential in studying HIV/AIDS patients, but they are not the only determinants of their life experience. A valid group is also an interpretive phenomenon. The adventures of facing the lack of educational needs and empowerment cannot be recognized only through the objective analysis of social groupings. Still, this study is also virtually a mental and interpretive process. Furthermore, it is not the gender of the patients that determines their empowerment in society, but the disease itself that determines their empowerment in society. The main limitation of this study was that the use of narrative interviews to access the details of individuals' biographies raised questions about research ethics.

Conclusion

It can be concluded that the educational and empowerment needs of patients with AIDS/HIV+ should be taken into consideration. Mobilizing individuals, specialists, and providers of counseling and care services in different sectors to gain a better understanding of the complex nature of the phenomenon of non-compliance with the right to empowerment will be useful. This, in turn, can facilitate the implementation of appropriate, necessary, and enforceable interventions.

Conflict of Interests

Authors have no conflict of interests.

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Sociological Analysis of Sexual Justice in Matrimonial Relationships

Marzieh Sharbafchizadeh[1], Soheila Sadeghi[2]

[1] PhD in Women Studies, School of Humanities, Tarbiat Modares University, Tehran, Iran
[2] Associate Professor, Department of Sociology, School of Social Sciences, University of Tehran, Tehran, Iran

Corresponding Author: Soheila Sadeghi***; Associate Professor, Department of Sociology, School of Social Sciences, University of Tehran, Tehran, Iran***
Email: ssadeghi@ut.ac.ir

Qualitative Study

Abstract

The concept of sexual justice is associated with the contentment of couples in their sexual life. In the present study, the obstacles of as well as the approaches to achieving sexual justice have been investigated. This study was carried out qualitatively through the thematic analysis of semi-structured in-depth interviews with sociologists, psychologists, and sexologists using ATLAS.ti software. The consequences of sexual injustice were determined at a macro level (reproduction of unequal relationships), meso level (disruption of relationships between individuals even at the family level), and micro level (lack of pleasure in sexual relationships, negative psychological background, sense of insecurity, development of stressful relationships, sense of aggression, and depression). Moreover, the obstacles to achieving sexual justice were classified and explained from the structural, institutional, individual, and action-reaction points of view.

Keywords: Sexual justice; Female sexual need; Matrimonial relationship; Thematic analysis

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Introduction

Sexual relationships have always been central to our understanding of the family. Sexual relationships are essential for reproduction, but sexuality today is far beyond simply a sexual behavior for reproduction. In the current age, sexuality is discussed within the contexts of culture, society, power, and status, and it is strongly believed that numerous factors such as family norms, education level, class status, religion, and media shape sexuality debates. Contrary to the past when sexuality was solely linked to reproduction, today, it is associated with satisfaction, personal choice, and pleasure more than ever. What makes sexual relationships within the family unilateral, putting men in a superior and women in an inferior position, is the lack of familiarity with the concept of sexual justice, an issue that is investigated in the present study.

Our theoretical literature lacks an academic concept for sexual justice and the results of interviews with experts in the field of psychology, sociology, and sex therapy regarding their consideration of this concept showed that experts mainly mentioned the consequences of sexual justice rather than give a precise definition for it. They defined 5 components of contentment including peace and de-escalation, appreciation of women's sexual needs, practicing romantic sexual relationships, mutual pleasure in sexual relationship, and development of sexual relationship in a balanced status and power context as the consequences of sexual justice (Sharbafchizadeh, 2020)

Sexual justice is important because the lack of equality in sexual relationships between couples results in them growing cold (Rahmani, Marghati Khoie, Sadeghi, & Allahgholi, 2011). Sexual justice includes the right to sexual enjoyment for both sides and opposes the superior-inferior positioning in sexual relationships, because sexual enjoyment is a mutual right, and therefore, an imbalanced power relationship in matrimonial life is in conflict with this concept. In other words, sexual justice involves the access of couples to a satisfactory sexual relationship, and therefore, involves power balance, common sense, mutual rights, and the right to enjoyment for couples. It is noteworthy that the term justice here describes a balanced relationship rather than an equal one. Considering the physical and mental characteristics of a man, it is obvious that equality in sexual relationships is not possible. Coleman believes that maximum personal enjoyment guarantees the balancing of the power of the actor and this creates balance within society (Ritzer, 2016:1749). The terms justice in this study refers to woman's right to demand and enjoy a sexual relationship.

According to the theory of exchange, couples must rely on each other to satisfy their own needs and meet the needs of the other party; according to this principle, the ultimate intention of human behavior is to achieve profit (Salari, 2015). Homans believes that the more the non-application of the rule of distributive justice is to the detriment of the individual, the more likely he is to engage in emotional behavior such as anger (Homans, 1961: 75, quoted by Ritzer, 2016). Systems theory, with a similar approach, states that the behavior of each member of a family affects that of other members (Mehdi, 1983: 94). Such a sense of duty also fulfills the mutual enjoyment of sex because the feeling of intimacy and mutual pleasure are considered as factors that strengthen the sexual instinct and reducing the feeling of love and intimacy will weaken this instinct (Mehrabizadeh Honarmand, Mansouri, & Javanmard, 2013).

It can only be said that there are sexually just conditions in marital life when both people feel relaxed and the sexual relations between them help to achieve this feeling. In addition to their physiological satisfaction, both people should experience emotional satisfaction and be in a state of emotional exchange. This means that each individual, in

return for the amount of feelings and emotions he/she spends on the other party, is reciprocally emotionally provided for. Negative emotion is defined as the dimension of mental distress and unpleasant interaction with the environment and includes various moods such as fear, anger, guilt, and helplessness. Therefore, it is strongly associated with stress and mental health problems and plays an important role in some disorders and in particular depression (Gill, Bos, Wit, 2017). Moreover, reduction in negative emotion is directly related to increase in calmness (Mirzaei & Shairi, 2017). In fact, sexual justice is one of the factors that, in addition to controlling the internal tensions and pressures of actors, also induce appropriate behavior. Davison, Bell, China, Holden, and Davis (2009) found that women who were sexually satisfied had higher health scores than women who were not. Healthy sex is one of the factors that can cause peace in cohabitation and the relationship between these two concepts has been proven in previous research (Hosseini and Khajoueizadeh, 2016).

In the present study, an attempt has been made to find appropriate approaches to the appreciation of this concept by determining the obstacles to achieving sexual justice and the consequences of ignoring this concept through interviews with experts. The importance of legal and customary attention to the position of both men and women regarding sexual justice, and therefore, appreciation of the women's rights besides their responsibilities should also be considered.

Background

Research on sexual justice from the sociological and psychological points of view has revealed the effect of sexual health on the appropriate function of the family (Froutan and Akhvan Taghavi, 2011; Heidari, 2017), the positive function of sexual relationships in women's health (Liu, Waite, Shen, & Wang, 2016), the relationship between sexual satisfaction of women and reduction of conflict in couples (Movahed and Azizi, 2011), the imaginations and experiences of Iranian married women regarding their sexual rights, the contribution of husbands to the changes in women's attitudes towards sexual justice (Farnaz, Janghorbani, Merghati Khoei, & Raisi, 2014), and the role of religion in the sexual understanding of women (Merghati Khoei, Whelan, & Cohen, 2012).

Meston, Hamilton, and Harte (2009) mentioned the central role of pleasure, love, and commitment in a sexual relationship. Furthermore, Davison et al. (2009) proved the presence of an association between mental health and sexual satisfaction.

Therefore, previous research highlights the role of sexual relationships in the physical and mental health of women. Moreover, couple's relationships are considered in different areas, and, depending on different attitudes, the status of a woman and fulfilling her requirements will differ.

The methodology

Due to the novelty of the studied topic, the lack of required references, and the researcher's inadequate knowledge about the issue, the qualitative method was used in this study. Therefore, the researcher was faced with the semantic topics of participants instead of their personal constructions and this ensures the accuracy of the data.

For the analysis of the collected data, the thematic analysis was used that is one the most commonly applied analyses for qualitative data. This analysis method is based on induction in which the researcher reaches an analysis typology through the classification of data and input-output modeling. In fact, thematic analysis through coding and analyzing of the data gives us a translation of the content of the data (Mohammadpour 2013).

After the targeted selection of the participants, who were experts in sociology, psychology, and sex-therapy, interviews were performed with open questions. In addition, other questions were added during the interviews for disambiguation of the topic for the participants, if necessary.

To achieve the main objective of the research and to obtain in-depth answers, the researcher tried to maintain a gender balance among the interviewees. Thus, from among 6 interviewees who were faculty members of social sciences, 3 were men and 3 were women. Of the specialists in the field of psychology, 4 were female experts and faculty members and 2 were male experts. In addition, among the sex-therapy experts, 2 were male physicians and 4 were female physicians and all of them were faculty members. In total, 20 professors and specialist physicians of the mentioned fields were interviewed. After reaching theoretical and structural saturation, 2 extra interviews were performed to ensure that saturation was achieved.

After transcription, the interviews were sorted based on their objective and research questions. After conceptual and content analysis, initial and secondary coding was performed, and finally, the major categories were extracted. The level of concepts became more abstract and the central categories were obtained. For example, some of the questions asked of the experts are as follows:

- What do you think about sexual justice?
- In your opinion, as an expert, is there sexual justice in the relationship between couples in our society? If so, why? and how? Please provide some examples?
- If there is no sexual justice, what do you, as an expert, know about the problems? And why do these problems exist?
- What do you think should be done to establish sexual justice in marital relationships? What solutions do you suggest?
- Are these solutions practical?
- What areas does the implementation of these solutions require?

The approach used for reviewing the interviews and coding them was searching for a theory behind what interviewees said. Thus, there was no ready-made theory and the researcher presented a theory by using the speech and idea of experts to respond questions.

The evaluation method of Lincoln and Guba in qualitative research is equivalent to validity and reliability in quantitative research. According to their method, the 4 criteria of credibility, dependability, transferability, and confirmability were considered to evaluate the reliability of the research (Bryman, 2012). Credibility refers to the reality of the descriptions and findings of the research. Through the confirmation of the findings of the research by experts, the transferability of the research was verified. Dependability refers to the recording of details and note-taking in different stages of the research. In order to achieve confirmability, all interviews were transcribed, typed, and transferred to ATLAS.ti software (version 7.5.16; ATLAS.ti Scientific Software Development GmbH, Berlin, Germany). For data analysis, first, the main categories were extracted, and then, they were classified and analyzed under suitable classifications.

Results

The interviews with the experts of the related fields about the barriers and obstacles to achieving sexual justice and suitable approaches to achieving it, and considering the theoretical and empirical background of the experts about these topics was a great help in organizing this concept and explaining the problems of this field.

The problems that experts enumerated for the realization of sexual justice can be studied in 4 groups of factors. Structural factors, institutional factors, individual factors, and action-reaction factors are the 4 macro-categories in this field each of which is briefly explained below.

Structural factors are the barriers caused by the macro-structures of the society, including culture, male-dominant view, law, gender, and religion.

Institutional factors are the barriers caused by family, media, and education. Among the individual barriers are objective and subjective duality, lack of communication skills, diseases and stress, unfamiliarity with the gender role, lack of sexual maturity, and shame.

The misunderstanding between a couple, infidelity in the couples' relationship, and different conceptions of the sexual relationship were items in the action-reaction factors group.

In response to the consequences of not observing sexual justice, the abovementioned items were classified under micro, meso, and macro levels. At the micro level, negative mental background, lack of sexual pleasure, aggressiveness and depression, insecurity, and stressful relationships were the consequences stated by the experts. At the meso level, the disruption of the relationship and social communication between and among families, and at the macro level, regeneration of an unequal relationship were items obtained from the interviews. (Table 1)

Table 1. Table of categories obtained

The main categories	First level subcategories	Second level subcategories
Obstacles to realizing sexual justice	Structural factor	Culture
		Male Domination (patriarchal ideology)
		Law
		Gender
		Religion
	Institutional factor	Family
		Education
		Media
	Individual factor	Objective and subjective duality
		Lack of communication skills
		Diseases and stress
		Unfamiliarity with sexual role
		Lack of sexual maturity
		Shame
	Action-reaction factors	Disagreement of couples
		Infidelity in relationships between couples
		Different perception of sexual relationships
The consequences of not observing sexual justice	Consequence at the micro level	Negative mental grounds
		Lack of pleasure in the relationship
		Aggression and depression
		Lack of security
		Developing stressful relationships
	Consequences at meso level	
	Consequences at the macro level	

Discussion

Obstacles to realizing sexual justice

The obstacle to realizing sexual justice was an item extracted from the interviews. These barriers can be studied at 4 levels.

Structural factor

The life and behavior of people are influenced in various ways by the society they live in.

Culture: The findings of anthropologists show very different attitudes towards sexual behavior throughout history and in different parts of the world. All social organizations try to identity and adjust 2 main biological capacities, i.e., socialization and sexual affairs (Stevens, 2014). A corresponding intra-cultural reality is that in social control of sexual issues, we observe sexual asymmetry. Regulation of male sexuality is not as strong as that of female sexuality. In other words, the sexual limitations imposed on women are stronger than those imposed on men (Ubillos, Paez, & Gozalez, 2000).

Expert number 1, sexologist and researcher in this field, said: "Sexual issues are the most social, political, and cultural issues of the society. Therefore, you can reach social issues through biographical research, because you see that this story is repeating for each person and it is the same for all (interview 1, sexologist, female).

Another sex-therapy expert argued that "Due to the complexity of the field of sex and the complexity of the sexual world, you cannot do anything; because this world is complex and large, you cannot change the laws or the customs. Changing the culture, especially in the field of sex, may seem simple in to other people, but it is very difficult (interview 2, sexologist, female).

Sexual relationships are always ambiguous in Iran and the shame in the Iranian culture accompanies the issues related to sexual relationships with embarrassment and shame (Bostani Khalesi, Simbar, & Azin, 2017).

Male Domination (patriarchal ideology): When in matrimonial relationships one party demands and the other party only provides, the sexual relationship is formed in an unequal power and dignity relationship. The woman cannot say no because not only does the law inhibit her and expect submission, but also religion and religious readings do not allow her to do so.

In this regard, expert number 11, sociologist and faculty member, believed: "Are the opportunities to satisfy a sexual desire equal for men and women? The answer is no. Men have the possibility of polygamy, temporary marriage, and other possibilities, but the possibilities for women are religiously and socially limited (interview 11, sociologist, male).

Previous research shows that in countries that observe sexual justice more than others, the sexual satisfaction of couples is high and matrimonial satisfaction depends on the sexual adaptability of the couple (Mehrabizadeh Honarmand et al., 2013).

Law: The law should support all citizens in obtaining their rights. In this regard, paragraph 14 of article 3 of the constitution states: "providing the rights of all people including men and woman, and fair legal security for all people and equity before the law." The provision of a right for one of the parties in a certain field and determination of no duty for the other party in an article of law signifies bias. In other words, the legal security mentioned in such an article disrupts.

Expert number 6, psychologist and consultant, admitted: "Do you know that there is no law to force men into obedience? There is no way to prove the disobedience of men. Our rules should be reviewed. Nowhere is such. Some

countries even have a prison sentence for infidelity, because they say: why would you betray when you can get a divorce. The law should be equal. If there is a dowry that I can waive to get a divorce, what is the use?" (Interview 6, psychologist, female).

Gender: Sexual cliché is another structural factor that makes the realization of sexual justice more difficult. Sexual clichés are natural reflections of applying sexual schemata. Sexual role schemata are a set of associations related to gender that show the main grounds for processing information based on gender (Khamsei, 2006).

In social communications, although shame and modesty regarding the body and sexual relationships are advised based on the Islamic teachings to both genders, But given gender stereotypes, these teachings about women extend to the family and private relationships.

Expert number 14, psychologist and consultant, believed: "Even the gender discussion, being male or female, is formed in families; you should do or not do some things because you are a girl. There are also some problems for men, such as you should not cry when you face problems because you are men, or places where their power is especially overshadowed by men, or where they can not manage their anger properly. All of these issues have effects that lead to sexual issues and question justice (interview 14, psychologist, female).

Religion: Undocumented readings of religious texts that are more consistent with custom than religion lead to misunderstanding and confusion. In fact, the excessive readings in which some have maximum rights and others have minimum rights is a barrier that makes the path to sexual justice difficult under the title of religion.

In this regard, expert number 4, psychologist and consultant, argued: "I want to say that there are 2 hungry people, but they do not complete the puzzle. They each betray the other. When we talk to men, they say that they are men and they can do it based on their religion. What about you? I want to say that even a man whose wife finds evidence of his infidelity can say my religion allows me to do it (interview 4, psychologist, female).

Institutional Factor

Initial or fundamental institutions of the society, including family, education organizations, government, and religion, meet the basic needs of the formation of society. The coordination between these institutions is necessary for the health of society and its members.

Since any change in social institutions will influence other institutions (Quen, 2011), coordinated policies in institutions like education, family, and media smooth the path of sexual justice in encountering sexual issues.

Family: Family is the first and main institution in which an individual grows, educates, and receives many concepts. Recognition of one's needs and the manner of meeting them is learned in families. Lack of attention to the sexual needs of children can endanger their marital life and future. Therefore, defected gender socialization is an issue which shows the negligence of families. Bandura and others proved the importance of observational learning of the behavioral model of children with the Bobo doll experiment. In fact, one of the most important learning for patterns in emotion behavior and speech is observational learning. In this method, behavior is learned through observation (Amirinia, 2014).

Expert 17, sociologist and researcher, argued that "The most important step to achieving sexual justice is culture and socialization of the next generation, and this will be effective when the legal regulations become amended and supported" (interview 17, sociologist, female).

Sexual education is another task of the family and inattention to it has harmful effects. For example, expert number 5, sociologist and faculty member, believed that

"Our cultural socialization is severely defective. We have no sexual education, formal or informal. There is no plan for the sexual education of children in families and the education system." (interview 5, sociologist, male).

Education: The Education is the largest cultural institution in the country that covers a large population. Therefore, considering the very large population it dominates can plan students' school hours to teach them how to deal with potential harms. Transference of skills, correct and timely education, and coordination with other institutions are the duties of the Education Department that have a direct effect on the formation of students' personality and actions-reactions in marital life.

The necessity of education about marital life issues should be recognized by this organization so that it acts to plan and provide operational solutions to realize it. For example, expert number 15, psychologist and faculty member, argued that "A part of this education should start at the high school and university on how sexual needs are satisfied and how the sexual relationship can be" (interview 15, sexologist, male).

Media: Regarding the role and position of the media in different societies and the widespread scope covered by them, it is necessary to use them to realize educational objectives. Media, as one of the social institutions, is not exempted from coordination with other institutions and when the media highlights is not coordinated with the objectives of other institutions or it lacks the required emphasis, its effectiveness on the people will be reverse.

Expert number 7, Ph.D. in sociology and faculty member, believed that "A reason for this dissatisfaction is the role of media. Because media has the most power in making images, in treatment of self, others, and body, they make these treatments; therefore, in a non-technical definition, we are always in an illusory search for the other, the other that does not exist in reality" (interview 7, sociologist, male).

Individual Factor

Finally, the non-realization of sexual justice is in part the result of factors that are related to an individual, not to the family and society. Of these factors, we can refer to diseases like frigidity and stresses that disrupt the body and soul of one partner, and thus, affect the other. The treatment of couples with total sexual relationship is effective in developing problems and failures. When an individual has not received the required sexual education for matrimonial life and there are clear differences between his/her mentality and the reality of sexual relationships, he/she cannot provide the grounds for a normal life and sexual intercourse, and this will also trouble the other party in the relationship.

Objective and Subjective duality: The term "objectivity" has both metaphysical and epistemological meaning both of which are relate to objective-subjective duality (Baise, 2017). The sexual relationship is the individual experience of the person and it seems that the person lacks an objective view of it. The best possible outcome would be that we achieve a synthesis of our universal subjective experiences and others' experiences. The problem is that every secret mental assumption that people experience gives them insight into how to pursue it in reality, and if they cannot do this objectively, they are faced with problems and frustration.

Expert number 11, sociologist and researcher, said: "Our images of sexual relationships are so bizarre that when we arrive at the sexual relationship, we see that there is a huge gap between reality and our image of it. We experience the sexual relationship where we do not see it and we do not see it where we experience it. We do not see it; we expand it in our imaginations" (interview 11, sociologist, male).

Lack of communication skills: Kouli believes that communication is a mechanism

through which human relationship occurs and develops (Sayadi & Ataie, 2017). Learning correct interpersonal relationships is the prerequisite to achievement of mental health, growth of the personality, formation of identity, increasing of quality of life (QOL), increasing of adaptation, and self-actualization (Fayaz & Karimi, 2010). Couples who lack appropriate communication skills or have not learned them have problems in understanding each other. The lack of understanding will reduce matrimonial satisfaction.

Expert number 14, consultant and psychologists, stated: "Unfortunately, our couples have not had this training; even the men have no training on how to articulate their requests" (interview 14, psychologist, female).

The correct interpretation of communicative behaviors is one of the features of couples with higher matrimonial satisfaction (Mousavi, 2016).

Diseases and Stress: Diseases that disrupt mental health, like depression and anxiety, have a significant relationship with the malfunction of the family (Talaeizadeh & Bakhtiarpour, 2016). Diseases such as mental diseases have a powerful effect on the lack of sexual satisfaction. Various researches have reported a relationship between sexual relationship and reduction of heart attacks in men, and migraine headache, premenstrual syndrome (PMS), and chronic arthritis in women (Rahmani et al., 2011).

For example, expert number 14, psychologist and consultant, argued that "There are some diseases as well as stresses and anxieties that affect sexual justice" (interview 14, psychologist, female).

Unfamiliarity with the sexual role: Erikson believes that one of the important steps of growth is the formation and evolution of the sexual role. This role is one of the most basic identity elements of the human (Erikson, 1950 quoted by Woodhill & Samuel, 2003). Lack of familiarity with this role means lack of recognition of the self and confusion in playing fulfilling roles, especially in matrimonial life.

Expert number 8, psychologist and sexologist, believed that "Our right in sex is related in some part to ourselves and in some part to the other party. We (women) are not aware of the part we ourselves play in these rights" (interview 8, Sexologist, female).

The sexual behavior of humans is not only the result of biological and physiological issues, but it is also the process caused by sexual socialization. Sexual socialization is the development of sexual identity and role, obtaining sexual skill and knowledge, and finally, the formation of the sexual role (Masoumi, Lamimian, Khaljabadi Farahani, & Montzaeri, 2013). Unfamiliarity with this role and lack of socialization makes the understanding of the sexual issue and coordination and adaptation difficult. This will lead to a disorder in the sexual function of couples.

Lack of sexual maturity: Sexual attitude and knowledge are some of the basic psychological components of sexual problems (Bakshizadeh, Samani, Kheir, & Sohrabi, 2018). Zabihi et al. defined the cognitive, emotional, and readiness factors for the sexual act or behavior. The cognitive component includes the beliefs and information of an individual about the related subject. The emotional component is important in terms of sexual attitude and knowledge. Readiness refers to the fact attitudes toward sexuality prepare a person for specific behaviors in dealing with the subject (Zabihi et al., 2011 Quoted by Bakshizadeh et al., 2018).

Expert number 1, sexologist and researcher, stated: "The problem is that they are not aware. This is the problem. People should learn this through formal education which is, unfortunately, non-existent" (interview 1, sexologist, female)/

Shame: The negative mental image of an individual of himself/herself has consequences like dissatisfaction with the body, feeling unattractive, and malfunction

(Ghasemi, 2017). Expert number 18, sociologist and faculty member, stated: "Even when you talk about this issue with women, it is disgusting for them. There is no desire. They look at this issue with shame and embarrassment, as it is a taboo (interview 18, sociologist, female).

Excessive shame and embarrassment are some of the issues that cause trouble in the relationship of couples and this shame is institutionalized with the inductions and treatment of the family from childhood. This is a continuous feeling that women have even after marriage, when middle aged, and even until the end of their life, and they speak about it with shame. In fact, they seldom speak about themselves. In a patriarchal society, defects are not attributed to men. Men are not ready to accept their defects, and thus, refer them to women.

Action-reaction factors

Disagreement of couples: The success or failure of couples in continuing their matrimonial life depends on matrimonial interactions and management of matrimonial conflicts between the couple (Mousavi, 2016). When there is no agreement between the couple, there is no desire for sexual intercourse.

As expert number 14, psychologist and faculty member, said: "The conflicts in families extend to the sexual relationships" (interview 14, psychologist, female).

The agreement of couples is the congruence of the expectations of partner and the behavior of the other partner (Spanier & Lewies, 1980). Experts believe that matrimonial adaptation is the externalization of the husband and wife in each period (Salimi, Mohsenzadeh, & nazari, 2014). If there is not such an adaptation and agreement, conflicts will affect the sexual relationship of couples and this will the beginning of new problems.

Infidelity in relationships between the couples: Gesler states that one of the reasons for infidelity by married men and women is the re-experiencing personal and sexual intimacy (Habibi Asgarabad & Hajiheidari, 2015). One consequence of not observing sexual justice is lack of sexual satisfaction and interpersonal intimacy in a matrimonial relationship that can be a motivation for infidelity by these individuals.

In this regard, expert number 6 (psychologist, university professor, and consultant) said: "Most infidelities, especially by women, are due to their emotional, mental, and sexual needs not being met in the family. In fact, we marry to satisfy these needs and no one marries for other needs" (interview 6, psychologist, female).

Since satisfying sexual needs is one of the main functions of the marriage, inattention to these needs may push people toward infidelity. Infidelity leads to instability in the relationship and a high rate of divorce (Karami, Zakeie, Mohammadi, & Haghshenas, 2015).

Differences in the perception of sex: The difference between men and women in sexual behavior is determined mostly by their gender roles and the cultural variable affecting it (Khamsei, 2006). Even by psychologists like Freud who pay more attention to the individual and psychological factors, external factors are also emphasized. Even from the point of view of psychologists such as Freud, who are more concerned with individual and psychological factors, the reference to external factors is emphasized and in his view, the factors of sexual arousal include internal and external factors. Excessive thought, excessive attention to a sexual subject, including the internal factors of arousal of sexual desire and spatial-temporal and social conditions and circumstances are among the external factors of sexual desire (Mahdavi & Nasimi, 2009).

Expert number 3, sexologist and researcher, said: "Most often women say that they need the emotional discussion, that someone show affection to them, provides them

with security, it is enough for them to hold their husband's hand. This emotional arousal helps their sexual arousal (interview 3, sexologist, female).

In fact, when the conception of the relationship differs greatly between two people and neither of them understands the other's mentality, the sexual relationship is in an unequal position and power and the unequal relationship will not be voluntary. It is done to open the door and only a physical and formalistic commitment remains. There is no pleasure and desire.

An unequal relationship in power and dignity expands through structural factors. For example, since religious or religious readings speak about the obedience of women, women's demands are considered culturally ugly. According to gender clichés, it is normal for men to demand, but abnormal for women to do so. Therefore, it is expected that unequal relationships be repeated and recreated. Therefore, for the realization of sexual justice, it is necessary to require changes in individual factors, structural factors, and institutional factors.

The consequences of not observing sexual justice

Not observing justice and paying no attention to justice in the matrimonial relationship will undoubtedly have consequences. In this section, we will explain the components obtained in this regard.

Consequence at the micro-level

Negative mental grounds: There is a direct relationship between stress, anxiety, depression, and sexual malfunction dysfunction. Depression is the most important factor in sexual malfunction (Yazdanpanahi, Nikkholgh, & Akbarzadeh, & Pourahmad, 2018). The discomfort and anxiety caused by a lack of suitable and fair sexual relationship lead to other mental problems. The matrimonial relationship is a multidimensional relationship and and disruption of its function can impair other parts of the mind and soul of the person and impair efficiency. In this regard, expert number 18, sociologist and faculty member, stated: "Research shows that women whose sexual needs have been met are happier women, with brighter faces and positive features, but those women whose sexual needs are not satisfied generally show mental disorders and pressures (interview 18, sociologist, female).

Lack of pleasure in the affair: Young, Denny, Young, and Luquis (2000) defined sexual satisfaction as satisfaction with sexual relationships and the ability of an individual for mutual pleasure. Sexual satisfaction is one of the most important human pleasures and makes life bearable. Sexual function has a direct relationship with the sexual satisfaction of people and lack of attention to this need results in sexual dissatisfaction and mental and family problems (Tavakol, Mirmolaie, Momeni Movahed, & Mansouri, 2011).

In this regard, expert number 7, sociologist and faculty member, argued that "Most divorces occur due to lack of sexual satisfaction" (interview 7, sociologist, male).

Another sociologist and faculty member said: "If we consider sexual dissatisfaction as sexual injustice, women are not currently in good conditions in most of families in our country" (interview number 11, sociologist, male).

The quality of a relationship is one of its most important elements and it will easily reduce and change if one of the couples is not satisfaction. Since the sexual response is linear in men and nonlinear in women, this helps the couples to provide the conditions for mutual pleasure.

Aggression and Depression: Sometimes the reason for Seemingly physical illnesses like depression and aggressiveness is hidden sexual problems that are not expressed and treated (Mahdavi & Nasimi, 2009). When men receive no response to their demands, they have a feeling of suppression and aggressiveness; women experience

stress and depression under these circumstances. They feel that they are not charming enough. This suppression causes the couple to express their feelings through other ways, like aggressiveness, as expert number 12, psychologists and consultant, said: "The men satisfied unnaturally become angry and women who are not satisfied also become angry (interview 12, psychologist, male).

This is while expert number 19, who is a sociologist and faculty member, believed that "Its result is the same mentally. The woman is mentally annoyed because she is not liked and the man is hurt because his physical needs are not met as much as he wants, but the result is the same" (interview 19, sociologist, woman).

Lack of observance of sexual justice results in depression and anxiety. Researches have shown that lower matrimonial function in couples is associated with depression, lack of social and interpersonal capability, and matrimonial dissatisfaction (Hamid, Aghajani Afjadi, & Saeidi, 2014).

Lack of security: The lack of safety caused by sexual frustration has serious mental consequences for the family (Talaeizadeh & Bakhtiarpour, 2016). The absence of intimacy between couples, even when it is not visible, can affect their behavioral factors such as jealousy and insecurity (Yoo, 2013).

According to Maslow's hierarchy of needs, mental security is the state in which an individual is sure that the atmosphere is secure and free from any damage and threat (Afolabi, & Balogun, 2017). Mental insecurity and interpersonal trust are conflicting concepts. A reduction in the feeling of security causes a reduction in interpersonal trust. This is while mental security is an important variable in the psychological health of an individual and it has a direct relationship with the practical human life of a human (Taormina & Sun, 2015). Expert number 18, sociologist and faculty member, argued that "The husband and wife should at peace with each other. The thought of the husband coming to her at night should not give the wife tension and anxiety. It should not be so" (interview 18, sociologist, female).

The lack of sexual justice and imbalance of power in the relationship induce a sense of insecurity. In such cases, the person is not able to anticipate the request to which she must respond. If the framework and scope of issues, especially in sexual relationships, are not clear in life, the human will always experience a sense of insecurity. Since men only think about the body, they may desire a sexual relationship at every moment. Cultural affirmations and inadequate understanding of religions sometimes cause men to assume that as a man they have the right to demand sexual intercourse at any time and place or under any conditions. Moreover, women think about their feelings and emotions and their stimulation differs from men. Therefore, they feel insecure under these conditions because they are not sure that they can meet the needs of a man emotionally. The sense of insecurity is a feeling that no one can pretend to.

Developing Stressful relationships: The theories of happiness have suggested that by reducing tension (satisfaction of biological and mental needs), happiness and wellbeing will occur (Darvizeh & Kahki, 2008). Dissatisfaction with matrimonial life and the undesired feeling of tension that people experience in these conditions can extend to other parts of the matrimonial life. Sometimes a couple is not aware of the origin of their problem and confusion in their affairs. Awareness of the needs of the spouse and understanding his/her abilities and inabilities leads to higher matrimonial adaptation (Besharat & Rafizedah, 2016).

Expert number 11, Ph.D. in sociology and a faculty member, believed that "One of the problems of women in marriage is the gap between men and women, that men have unequal sexual impotence, but women are still active. These needs will lead to quarrel,

male dominance over women in the family, or anger" (interview number 11, sociologist, male).

Diner et al. argued that people with high levels of tension in their life evaluate their life occurrences as undesirable and have more experiences of feeling negative emotions like anxiety, depression, and anger (Darvizeh & Kahki, 2008).

Consequences at Meso level

Conflict and matrimonial dissatisfaction after marriage not only have adverse effects on the mental actions of the husband and wife, but also influence the growth and development of their children and adolescents (Rahmani et al., 2011). Children of couples with continuous matrimonial dissatisfaction have more behavioral problems in school, create more problems for society, and violate more norms (Elyasi & Montazeralmahdi, 2016). The dissatisfaction of a couple will influence their behavior toward their families; in other words, dissatisfaction will not remain within the couple, but will extend to other social sites. The range of these dissatisfactions will extend to their work and they will lose concentration on their jobs.

Expert number 14 who works in the field of psychology and is a consultant, said: "The couples do not have sufficient sexual information and this causes many problems for them in the family. Many problems! They extend this into their daily life. They react even to their children. This has an effect on all aspects of their life (expert 14, psychologist, female).

Therefore, an issue that is personal and related to the couple can impose widespread damages to their family members and acquaintances in case of incorrect operation.

Consequences at the macro level

Randall Collins believes that when the tools and power are in the hands of one sex, he/she can use this power for domination of the sexual relationship and generate an unequal sexual system (Ritzer, 2016). The theories about sexual inequalities indicate that sexual inequality is caused by structural factors that can be economic, political, normative, or all of them. These factors are effective on the production and reproduction of inequality (Zanjanizadeh, 2007). Expert number 5, sociologist and faculty member, believed that "The social position of women is a more inferior position than men. And when we speak about the social position, we mean all its dimensions, even in the family, education contexts, law, and rights. These are all representations of the inequality that I referred to. This illustrates the inferiority of women to men, the inferiority of women's social position to men…well. It is normal that the situation may repeat itself, and as a result, changing the law and regulations will become more difficult" (interview 5, sociologist, male).

Thus, this cycle is frequently repeated and we observe the fixation of the structures. As if there is no way out. This is while we are observing the increasing agency of women in sexual relationships and, contrary to popular and social and cultural constructs, women no longer want to be seen passively in a relationship. For them, passivity is different from the manner of sexual relationships used by men. Paying attention to the expansion of women's agency along with the point that there is a negative correlation between the sexual dissatisfaction of women and couples' adaptation (Mehrabizadeh Honarmand et al., 2013), increases the importance of sexual justice compared to the past.

Conclusion

Divorces that occur due to sexual problems and the conflicts caused by them make the necessity of research about the realization of sexual justice clear. The obstacles of

and approaches to sexual justice were considered in this study. Sexual justice is the creation of conditions in which the husband and wife are aware of the requirements of having sexual relationships, they are satisfied with their own sexual function and that of their partner, and they are in a balanced position. In these conditions, women's right to having sexual needs is recognized, and satisfying their needs become a priority. It is noteworthy that the term "justice" here means balanced relationships not necessarily equal relationships. The physical and mental conditions of men show that we cannot create equality in the sexual relationships between men and women. The researcher sought to study the consequences of not observing sexual justice and the obstacles to its realization in matrimonial relationships. The concepts presented here by experts showed what measures should be taken to realize sexual justice and where the start and end points are.

There were some limitations in performing this research. Since talking about sex in our culture is a kind of taboo, talking professionally with professors, especially male professors, was difficult and a kind of violation of privacy. Thus, not all professors were willing to talk about this issue.

The results showed that despite the initial perception of the sexual relationship that reduces to an individual level due to its instinctive nature, the realization of social justice and satisfying sexual relationships, even in the case of mutual love and lack of any problems in this regard, can be problematic while these relationships occur in an undetermined and imbalanced structure. In other words, sexual justice cannot be reduced to the individual level. Instead, the realization of sexual justice needs changes in structures, cultural images, and social relationships. Thus, this research showed that sexuality forms in the context of the society and to resolve the problems caused by it and to reduce matrimonial problems, it is not enough to consider only individuals and ignore the social context. Macro-structures and inter-institutions are as involved as individuals..

The interviews with the experts indicated that sexual justice cannot be reduced to the individual level. Factors such as law, religion, gender clichés, social relationships, and even social policy-making are important and impact this issue. This was in line with the research by Froutan and Akhvan Taghavi (2011); but was not in accordance with the research by Movahed and Azizi (2011) who considered sexual satisfaction to be focused on personal relationship. Farnaz et al. (2014) also proved that women's silence in times of dissatisfaction with sexual relations is due to social coercion.

This finding is contrary to the current conventional understanding. The conventional understanding sees sexual justice in the sexual instinct and related to the individual, while this study proved that sexual justice should be considered in the political, cultural, social, and economic contexts. The reduction of the concept of sexual justice to the individual level means the acceptance of the conventional understanding and its production and reproduction, and approval of the study of sexual justice with a reductionist point of view. The result of this reduction is the production and reproduction of an unequal relationship.

Creating a purposeful education network to adopt an educational and training strategy and transfer it to people according to their age in order to educate adults and make them aware of their sexual status and that of the opposite sex, and train them to face their own sexual needs and that of their partner is essential.

It is also suggested that the relevant organizations make the necessary efforts to change the wrong customs and inappropriate religious and cultural readings of how

to meet the sexual needs of men and women.

Conflict of Interests

Authors have no conflict of interests.

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The Mediating Role of Psychosomatic Symptoms in the Relationship between Personality Characteristics and Marital Conflicts

Mohsen Doustkam[1], Sepideh Pourheydari[2], Ahmad Mansouri[3], Amir Shahraki Mohajer[4], Amrollah Ebrahimi[5], Farzad Goli[6], Hamid Afshar[7], Bentolhoda Hekmati Pour[8]

[1] Associate Professor, Attar Institute of Higher Education, Mashhad, Iran
[2] Associate Professor, Khorasan Institute of Higher Education, Mashhad, Iran
[3] Assistant Professor, Department of Psychology, Neyshabur Branch, Islamic Azad University, Neyshabur, Iran
[4] MA, Department of Psychology, Neyshabur Branch, Islamic Azad University, Neyshabur, Iran
[5] Associate Professor, Department of Psychology, School Of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran
[6] Daneshe Tandodrost Institute, Isfahan, Iran AND Professor, Faculty Instructor, Energy Medicine University, California, USA
[7] Isfahan Psychosomatic Research Center, Isfahan University of Medical Sciences, Isfahan, Iran
[8] MA, Department of Psychology, Neyshabur Branch, Islamic Azad University, Neyshabur, Iran

Corresponding Author: Amrollah Ebrahimi; ***Associate Professor, Department of Psychology, School Of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran***
Email A_ebrahimi@med.mui.ac.ir

Quantitative Study

Abstract

Background: Personality characteristics can be used to predict a person's behavior in various life situations, including marriage. This study was conducted to investigate the mediating role of psychosomatic symptoms in the relationship between personality characteristics and marital conflicts.

Methods: The present descriptive correlational study was performed on all conflicting couples referring to the counseling centers in Mashhad, Iran, in 2018. The sample included 200 conflicting couples referring to the thought and behavior counseling centers in Mashhad selected using convenience sampling method. Cattell's Sixteen Personality Factor (16PF) Questionnaire, Takata and Sakata's Psychosomatic Complaints Scale, and the Marital Conflict Questionnaire were used to collect data. Data were analyzed using Pearson correlation coefficient and path analysis in SPSS and LISREL software.

Results: The results showed that personality characteristics can be used to predict a person's behavior in various life situations including marriage, and that there was a significant relationship between personality characteristics and marital conflicts ($P < 0.01$).

Conclusion: It can be concluded that psychosomatic symptoms have a mediating role in the relationship between personality characteristics and marital conflicts.

Keywords: Family Conflict; Psychophysiologic Disorders; Personality

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Introduction

Conflict in marriage occurs when there is disagreement, incompatibility, or lack of understanding between the couple. In addition, marital conflicts can be considered as a function of disagreement in personal goals, values, ideals, and behavioral priorities (Steptoe, Wardle, Pollard, Canaan, & Davies, 1996). Each of the different theories of family therapy has its own definition of conflict. According to Glasser (2001), for example, marital conflict is caused by a couple's differences in the type of needs and method of satisfaction, self-centeredness, desires, behavioral schemas, and irresponsible behavior toward marital relationships. Young and Long (1998), however, see systemic conflict as the result of any conflict over the acquisition of power and resources between couples. In addition, research on the effects of marital conflict has been very extensive and has examined its consequences from parenting to sexual disorders in couples. If the conflict is well managed, it is accompanied by growth and even an increase in marital satisfaction, while failure to manage and resolve the conflict will increase it (Greeff, 2000). Moreover, if stress, which is one of the main consequences of conflict, persists for a long time, short-term body reactions including psychosomatic problems become long-term reactions (Falahati & Mohammadi, 2020). Lack of objective expression of emotions leads to the experience of unpleasant thoughts and arousals, followed by a lack of knowledge of the individual's feelings. Automatic negative thoughts can eventually lead to increased dissatisfaction with marriage due to their negative impact on the maintenance of a strong emotional relationship between a couple (Bjelland, Dahl, Haug, & Neckelmann, 2002).

Moshtaghi and Allameh (2012)investigated the relationship between stress and psychosomatic diseases in nurses in Isfahan, Iran, and showed that psychosomatic disorders such as heartburn, ulcers and indigestion, neck and shoulder muscle cramps, forgetfulness, and anger and worry were increasing significantly among nurses. In this study, in general, moderate stress was seen among most nurses and it was reported that the prevalence of mental illness increases with increasing stress (Shabbeh, Feizi, Afshar, Hassanzade Kashtali & Adibi, 2016). Although studies on psychosomatic disorders in Iran are very limited, they have often been performed on limited and specific populations such as staff, students, the blind people (Sadrai, Barati, Hadadi, Zalpoor Moghadami, 2012), and nurses (Hekmatravan, Samsum Shariat, Khani, Khademi, 2012), or in specific and concentrated areas (Sarason & Sarason, 1987).

In the study by Shabbeh, Feizi, Afshar, Hassanzade Kashtali, and Adibi (2016), based on a large sample of the Iranian adult population and using 32 symptoms, the 4 main categories of psychosomatic disorders in men and women were identified, which include gastrointestinal, general, respiratory, and psychological symptoms. In this study, the mean score of gastrointestinal disorders for men was 15.37 and for women 11.74, the mean of general disorders for men was 12.44 and for women 11.52, the mean of disorders for men was 11.74 and for women was 10.66, and the mean of mental disorders was 5.19% for men and 7.60% for women (Khodayarifard, Sadeghi, & Abedini, 2007). The results of studies on psychosomatic disorders have shown that these disorders are more common among women than men under the age of 70. Symptoms of these disorders usually begin before the age of 30 and continue for several years (Cash, Jakatdar, & Williams, 2004).

Moreover, in relation to the prevalence of these disorders in Iran, the findings of a study on clients of the Welfare Organization of Iran showed that 45.7% of these people were at a mild level and 54.3% were at moderate and high levels. The most

common psychosomatic disorders were knee joint pain, elbow pain, nerve headaches, shoulder and back pain, constipation, gastric ulcer, menstrual disorders, and arthritis, respectively (Bozo, Ar, & Dilay Eldogan, 2019).

For this purpose, using a single subject design (AB type), 5 people with muscle and bone pain who referred to a private center for chiropractic treatment were selected, studied, and treated using a family therapy method based on cognitive-behavioral techniques with chiropractic. The results showed the high effectiveness and efficiency of this combined therapy. Among the possible reasons for the effectiveness of this method of treatment were the regulation of the spine of patients with low back pain and neck pain, and the simultaneous recognition of the underlying psychological causes of these pains and elimination of these causes through cognitive-behavioral psychotherapy. Researchers believed that one of the reasons for the effectiveness of family, cognitive-behavioral therapy combined with chiropractic in the treatment of musculoskeletal disorders (back pain and neck pain) was that it has been tested and controlled not only by regulating the spine (physical symptoms), but also by equipping these patients with skills such as problem solving, effective communication, anger management, and effective coping with daily pressures and tensions by participating in psychotherapy sessions, and as a result, this method has effectively and positively affected the psychological and social factors that create stress. Thus, they have healthy relationships with others and have been able to overcome their conflicts with others (Sayehmiri, Kareem, Abdi, Dalvand, & Gheshlagh, 2020). Therefore, it can be concluded that variables such as the ability to manage emotions and problem solving are among the mediating and influential variables in the patient's vulnerability to psychosomatic disorders.

As personality characteristics become relatively stable over time, they can be used to predict a person's behaviors in various life situations, including marital relationships. The main limitation of this study was that most of the reviewed articles did not provide sufficient information on the subject under study or only examined the relationship between marital satisfaction and neurosis (Ismaili & Shokohian, 2012). In general, past research efforts and findings have rarely addressed the relationship between marital conflicts, psychosomatic complaints, and personality characteristics, and no model has been proposed to determine the vulnerability of individuals to these complaints. In the present study, in addition to determining the relationship between individual personality characteristics and marriage, the mediating role of psychosomatic complaints in this regard was also measured and evaluated (Figure 1).

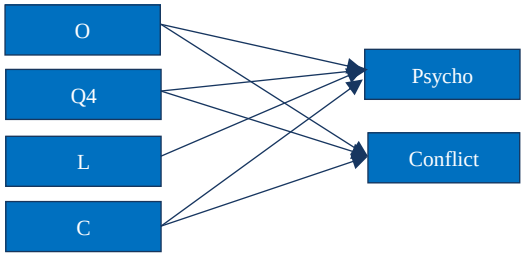

Figure 1. The conceptual model of the mediating role of psychosomatic symptoms in the formation of marital conflicts based on personality traits

Methods

The present study was an applied, descriptive-correlational research. The statistical population included all couples with marital conflicts referring to counseling centers in Mashhad, Iran, in 2018. The sample included 200 couples referring to the thought and behavior counseling centers in Mashhad, who were selected using convenience sampling method. To determine the number of samples, 10 to 15 individuals were selected for each manifest variable and 200 were selected based on the existing variables. The inclusion criteria included a minimum of 1 year of living together, the couple's willingness to complete the tests, no history of psychiatric illness, and a high score on the Marital Conflict Questionnaire. The exclusion criteria were unwillingness to participate in the research and a chronic physical illness in either one or both spouses. After coordinating with Isfahan University of Medical Sciences, Iran, and obtaining the necessary permits, coordinating with Andisheh and Raftar counseling centers, and interviewing the participants and obtaining their informed consent to participate in the study, Cattle's Sixteen Personality Factor (16PF) Questionnaire and Takata and Sakata's Psychosomatic Complaints Scale were distributed among the participants.

Ethical principles were taken into consideration in the present study. All individuals received information about the research in writing and participated in the research voluntarily. They were assured that all information would remain confidential and would be used for research purposes alone. The participants' first and last names were not recorded in order to maintain their privacy.

Cattell's Sixteen Personality Factor Questionnaire: The 16PF Questionnaire was designed based on factor analysis using the list of Allport's personality traits; after reducing them to 171 traits in 36 dimensions, 16 distinct and profound factors that explain the changes in 36 personality dimensions were selected. The validity of the Persian version of the 16PF was evaluated by Barzegar (1996) among high school students. Its average Cronbach's alpha coefficient was 0.54. The mean validity coefficient of the factors was 0.76, which indicated that the validity of the questionnaire was acceptable.

Takata and Sakata's Psychosomatic Complaints scale: The Psychosomatic Complaints Scale was constructed and validated in Japan and consists of 30 items. The items are scored on a scale ranging from 0 to 3 (never-repeatedly), and the total score of the scale ranges from 0 to 90. The Concurrent validity of the questionnaire was 0.64 and 0.65 in 2 separate studies. It had sufficient face validity, content validity, concurrent validity (r = 0.68), and structural validity (explanation of 33.10% of the variance in sections by 1 factor). The scale also had appropriate test-retest reliability (r = 0.83) and internal consistency (a = 0.85).

Marital Conflict Questionnaire: For the variable of marital conflicts, the 54-item Marital Conflicts Questionnaire (2011) was used. This questionnaire measures 8 dimensions of marital conflict. The items are scored on a 5-point Likert scale ranging from 1 to 5 (never to always). The questionnaire includes a number of reverse-scored questions. The maximum and minimum total score of this questionnaire is, respectively, 270 and 54; thus, the score of 54 indicates the lowest level of marital conflicts and the score of 270 indicates the highest level of marital conflicts. Cronbach's alpha obtained for the whole questionnaire in a group of 270 people was equal to 0.96, and for its 8 subscales of reduction of cooperation, decreased sex, increased emotional reactions, increased child support, increased personal relationship with relatives, decreased family relationship with spouse's relatives and friends, separation of finances, and effective communication

reduction it was 0.81, 0.61, 0.70, 0.33, 0.86, 0.89, 0.71, and 0.69, respectively. The Marital Conflicts Questionnaire has good content validity. In the test content analysis stage, after the preliminary implementation and calculation of the correlation of each question with the whole questionnaire and its subscales, no item was deleted due to the appropriate correlation of all questions.

The data collected in the present study were analyzed using descriptive statistics (mean and standard deviation), Pearson correlation coefficient, path analysis, and structural equation method in SPSS (version 22; IBM Corp., Armonk, NY, USA) and LISREL statistical software (version 8.80).

Results

The mean and standard deviation of the age of women, men, and all the participants were 27.85 ± 5.77, 33.33 ± 5.68, and 30.61 ± 6.34 years, respectively. Among the participants, 4, 84, 27, 177, 74, and 18 had high school, diploma, associated degree, bachelor's degree, master's degree, and doctoral degree, respectively. There were also 16 students. Descriptive indices and correlation coefficients between the research variables are reported in table 1.

The results presented in table 1 show that among Cattell's personality factors, apprehension (O), vigilance (L), tension (Q4), abstractedness (M), emotional stability (C), consciousness (G), social boldness (H), and perfectionism (Q3) had a significant relationship with marital conflicts ($P < 0.05$). Moreover, among Cattell's personality factors, O, L, Q4, liveliness (F), C, G, H, and Q3 had a significant relationship with psychosomatic symptoms ($P < 0.05$). Furthermore, there was a significant relationship between psychosomatic symptoms and marital conflicts ($P < 0.05$). Path analysis method was used to investigate data. Nevertheless, first, the normality of the criterion variable was investigated. The results of skewness (K = -0.16) and the Shapiro-Wilk test (Statistic = 0.995; P = 0.21) showed that the distribution of the variable of marital conflicts was normal.

According to the results presented in table 2, the direct effect of O, Q4, and C, and psychosomatic symptoms on marital conflict was significant, but the direct effect of L was removed from the model due to its insignificance. The direct effects of O, Q4, L, and C variables on the psychosomatic symptoms were significant. The indirect effects of O, Q4, L, and C variables on marital conflicts were significant through psychosomatic symptoms.

Table 1. Mean, standard deviation, and correlation coefficients between the research variables

Variables	Marital conflict	Psychosomatic	A	B	C	E	F	G
Marital conflicts	-	0.46**	-0.06	-0.006	-0.52**	0.05	-0.07	-0.13**
Psychosomatic symptoms	-0.46**	-	0.02	-0.07	-0.48**	0.01	-0.13**	-0.11**
Mean ± SD	139.72 ± 18.12	29.96 ± 14.48	7.76 ± 2.21	2.30 ± 1.34	4.76 ± 2.32	5.96 ± 2.21	6.23 ± 2.40	5.25 ± 2.07

Variables	H	I	L	M	N	O	Q1	Q2	Q3	Q4
Marital conflicts	-0.25**	0.01	0.30**	-0.12**	0.03	0.44**	-0.03	0.06	-0.22**	0.49**
Psychosomatic symptoms	-0.27**	0.07	0.34**	-0.04	0.05	0.38**	-0.06	0.05	-0.19**	0.47**
Mean ± SD	6.25 ± 2.36	6.59 ± 1.86	5.09 ± 2.17	5.05 ± 1.86	4.94 ± 2.05	6.11 ± 1.88	4.59 ± 2.02	5.33 ± 1.96	3.86 ± 1.72	6.73 ± 2.17

Table 2. Direct and indirect effects of variables

Effects	Predictors	Variable	β	SE	t	P
Direct	O	Marital conflicts	0.16	1.79	3.20	< 0.01
	Q4	Marital conflicts	0.15	1.61	2.60	< 0.01
	C	Marital conflicts	-0.23	-2.26	-3.95	< 0.01
	O	Psychosomatic symptoms	0.11	0.88	2.23	< 0.01
	Q4	Psychosomatic symptoms	0.19	1.25	3.10	< 0.01
	L	Psychosomatic symptoms	0.15	0.97	3.10	< 0.01
	C	Psychosomatic symptoms	-0.24	-1.52	-4.08	< 0.01
	Psychosomatic Symptoms	Marital conflicts	0.21	0.27	4.33	< 0.01
Indirect	O on marital conflicts	Through psychosomatic symptoms	0.02	0.23	1.99	< 0.01
	Q4 marital conflicts	Through psychosomatic symptoms	0.04	0.33	2.52	< 0.01
	L marital conflicts	Through psychosomatic symptoms	0.03	0.26	2.52	< 0.01
	C marital conflicts	Through psychosomatic symptoms	-0.05	-0.40	-2.97	< 0.01

SE: Standard eror; C: Emotional Stability; L: Vigilance; O: Apprehension; Q4: Tension

Chi-square (x^2), goodness of fit (GFI), adjusted goodness of fit (AGFI), normative fitness index (NFI), curve fitness index (CFI), incremental fitness index (IFI), non-normalized fitness index (NNFI), and root mean square approximation (RMSEA) were equal to 2.11, 1, 0.96, 1, 1, 1, 0.98, and 0.053 (P = 0.15), respectively. Based on available sources (Meyers, Gamst, & Guarino, 2012), it is better if fitness indices are greater than 0.90 and the RMSEA index is less than 0.08. Therefore, the final model of this research has a good fit (Figure 2).

Discussion

This study was conducted to investigate the mediating role of psychosomatic symptoms in the relationship between personality characteristics and marital conflicts.

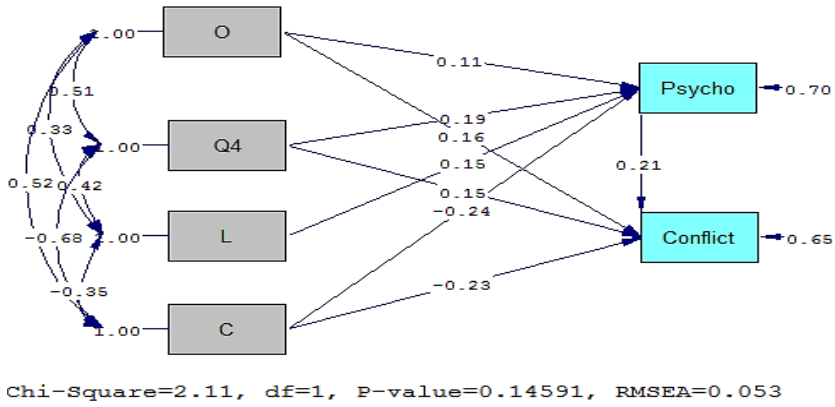

Figure 2. The final model of the mediating role of psychosomatic symptoms in the formation of marital conflicts based on personality traits

The results of the study, it can be stated that personality characteristics can be used to predict a person's behavior in different life situations, including marriage situations. Marital satisfaction, influenced by various factors, is a criterion used to assess the quality of a couple's relationship. The results showed that among Cattle's personality factors, O, L, Q4, M, C, G, H, and Q3 had a significant relationship with marital conflicts ($P < 0.05$). Moreover, among Cattell's personality factors, O, L, Q4, F, C, G, H, and Q3 had a significant relationship with psychosomatic symptoms. Furthermore, there was a significant relationship between psychosomatic symptoms and marital conflicts. It was also found that the direct effect of O, Q4, C, and psychosomatic symptoms on marital conflict was significant. However, the direct effect of L was not significant; thus, it was excluded from the model. The direct effect of O, Q4, L, and C variables on psychosomatic symptoms was significant. The indirect effects of O, Q4, L, and C variables on marital conflicts were significant through psychosomatic symptoms. Janati Jahromi, Moein, and Yazdani (2010) performed a study on 200 participants using the ENRICH Marital Satisfaction Scale and NEO Personality Inventory. They found that nervousness (emotional instability) and extraversion had a negative and significant relationship with marital satisfaction, which is consistent with the results of the present study. Therefore, it can be said that personality characteristics can be used to predict individual behaviors in various life situations, including marriage situations (Janati Jahromi et al., 2010).

Ismaili and Shokohian (2012) studied the effect of personality traits and coping on marital satisfaction of female students of Payame Noor Fasa University. They found that personality traits such as extraversion and psychosis did not have a significant relationship with marital satisfaction; however, neuroticism had a negative relationship with marital satisfaction, which is not in line with some research results. A study of the research background of Cattell's personality traits indicated the correlation of factors O, Q4, and C with inconsistencies and behavioral and normative problems. For example, a comparative study of personality traits among runaway and non-runaway girls showed that the highest means of factors O and Q4 and the lowest means of factor C were related to runaway girls (Rasoulzadeh Tabatabaee, Beshart, & Bazyari, 2005). The association between guilt (factor O) and psychosomatic symptoms has also been confirmed in available sources. For example, in a comparative study, a significant relationship was found between guilt and the mean scores of psychosomatic disorders in addicted women (Razavi, Arab, & Shirazi, 2019). The relationship between the personality characteristics of neuroticism and marital conflicts has also been confirmed in this study, which is consistent with previous studies (Iveniuk, Waite, McClintock, & Teidt, 2014).

In fact, neuroticism and nervous tension (measured by factors C and Q4 in the present study) exacerbate marital conflict because of the individual's desire to experience more negative emotions (Jadiri, Jan Bozorgi, & Rasoulzadeh Tabatabai, 2009). Furthermore, the results of the present study on factor L were consistent with that of the research by Namdarpour, Fatehizade, Bahrami, and Mohammadi-Fesharaki (2017) who showed that mental rumination increases marital conflict. In general, considering the ups and downs of marriage, the inevitability of marital conflicts, and the vulnerability of couples to psychosomatic symptoms based on personality characteristics, one of the most important findings of the present study was the prediction of marital conflicts and vulnerability to psychosomatic symptoms based on the personality characteristics of couples. One of the limitations of this study was the possibility of overestimation and exaggeration in the expression of psychosomatic symptoms and marital conflicts by couples referring to counseling centers.

Conclusion

It can be concluded that psychosomatic symptoms have a mediating role in the relationship between personality characteristics and marital conflicts.

Conflict of Interests

Authors have no conflict of interests.

Acknowledgments

None.

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Effectiveness of a Bioenergy Economy-Based Psycho-education Package on Improvement of Vegetative Function, Forgiveness, and Quality of Life of Patients with Coronary Heart Disease: A Randomized Clinical Trial

Jahanshir Tavakolizadeh[1], Farzad Goli[2], Amrollah Ebrahimi[3], Najmeh Sadate Hajivosough[4], Shahrzad Mohseni[5]

[1] Professor of Clinical Psychology, Department of Psychiatry, School of Medicine AND Social Develipment and Health Research Center, Gonabad University of Medical Sciences, Gonabad, Iran
[2] Professor, Faculty Instructor, Energy Medicine University, California, USA AND Danesh-e Tandorosti Institute, Isfahan, Iran
[3] Professor, Department of Health Psychology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran
[4] Head of Student Counseling Center, Gonabad University of Medical Sciences, Gonabad, Iran
[5] Heart Specialist, Bohlool Hospital, Gonabad University of Medical Sciences, Gonabad, Iran

Corresponding Author: Farzad Goli; ***Professor, Faculty Instructor, Energy Medicine University, California, USA AND Danesh-e Tandorosti Institute, Isfahan, Iran***
Email: dr.fgoli@yahoo.com

Quantitative Study

Abstract

Background: Many treatments make the life of coronary heart patients longer, but they require more psychosocial and spiritual support for a meaningful life. The aim of the present study was to determine the effect of a bioenergy economy (BBE)-based psycho-education package on improvement of vegetative function, forgiveness, and quality of life (QOL) of patients with coronary heart disease (CHD).
Methods: In this clinical trial, using convenient sampling, 40 patients were selected from among patients referring to Bohlool Hospital in Gonabad, Iran, and were randomly assigned to the 2 case and control groups. First, the vegetative function checklist, Forgiveness Likelihood Scale, and World Health Organization Quality of Life (WHOQOL)-BREF questionnaire were completed for all the participants. Then, the case group received 8 sessions of group training for 180 minutes. After the training and the 1-month follow-up, both groups completed the questionnaires again. Finally, all data were analyzed using repeated measures analysis of variance (ANOVA) in SPSS software.
Results: The results showed a significant difference in heart rate, forgiveness, and QOL and its physical and psychological dimensions between the case group and control group after training ($P < 0.05$). The post hoc test showed that heart rate decreased significantly in the posttest compared to the pretest and forgiveness, and QOL and its physical and psychological dimensions increased significantly ($P < 0.05$). However, heart rate increased significantly in the follow-up compared to the posttest and forgiveness, and QOL and its physical and psychological dimensions decreased significantly ($P < 0.05$).
Conclusion: It can be concluded that group education based on BEE as a complementary care system was effective on heart rate, forgiveness, and QOL and its physical and psychological dimensions.
Keywords: Bioenergy Economy, Forgiveness, Quality of Life, Coronary Disease

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Introduction

Cardiovascular diseases (CVDs) including coronary heart diseases (CHDs) are highly common in the world and one of the leading causes of mortality (Baxendale, 1992). In addition to high blood pressure, high blood cholesterol, diabetes, obesity, lack of exercise, and genetic factors, psychological factors, such as stressors, low social support, and negative emotions such as anxiety, depression, and hostility, are also causes of the increased risk of CHD (Fritzsche, Monsalve, Zanjani, Goli, Chen, & Dobos, 2020). Numerous studies have reported the high comorbidity of CHD and psychological distress (Russ, Stamatakis, Hamer, Starr, Kivimaki, & Batty, 2012; Stewart, Davidson, Meade, Hirth, & Makrides, 2000), anxiety disorders, (Cohen, Edmondson, Kronish, 2015; Caldirola, Schruers, Nardi, Berardis, Fornaro, & Perna, 2016), and depression (Cohen et al., 2015; Seligman & Nemeroff, 2015; Williams, 2012; Ren, Yang, Browning, Thomas, & Liu, 2015). From a psychocardiological point of view, psychological factors play an important role in the progression of CHD, and lifestyle changes such as a healthy diet, stress reduction, and increased physical activity help reduce the risk of CHD by up to 80% (Fritzsche et al., 2020). The heart is one of the most important and sensitive parts of the human body; damage to the heart muscle has an adverse effect on mental state, and failure to pay attention to stresses and psychological reactions of patients causes the development heart disease its resulting complications (Brosschot et al., 1994). Therefore, unfavorable psychological condition and ineffective coping style of patients can affect the vegetative function of patients such as high blood pressure, heart rate, and respiration rate and affect their physical status by increasing the burden on the cardiovascular system (Tavakolizadeh, Pahlavan, Basirimoghadam, & Kianmehr, 2018).

According to the World Health Organization (WHO), the quality of life (QOL) of individuals depends on their perceptions of their position in life. According to this definition, the QOL is a purely personal matter and has different meanings for people (Unruh & Hutchinson, 2011). Dimensions of QOL include the dimension of health, which is defined as a state of physical, mental, social, and spiritual well-being, and not only the absence of disease or disability, but also not limited to it (Mooney & Timmins, 2007). Health-related QOL is a reflection of the effects of the disease and its treatment according to the views and experiences of patients (Zuccarini, Johnson, Dalgleish, & Makinen, 2013). Studies show that heart disease has a negative effect on QOL and most patients have an adverse physical, activity, psychological, and socioeconomic status (Rahnavard, Zolfaghari, Kazemnejad, & Hatamipour, 2006; Dunderdale, Thompson, Miles, Beer, & Furze, 2005; Cepeda-Valery, Cheong, Lee, & Yan, 2011; Johansson, Brostrom, Dahlstrom, & Alehagen, 2008). Low QOL is associated with worsened disease, shorter survival time, increased number of hospitalization days, and reduced function of heart patients (Havik et al., 2007). In recent years, the spiritual dimension has been increasingly considered in health literature as 1 of the 4 dimensions of health and its importance has been revealed in health (Fallahi Khoshknab & Mazaheri, 2008). The important role of spiritual care in the cardiovascular system has been considered in some literature (Valente, Quitério, Vanderlei, 2014).

One of the important components of spiritual health is forgiveness. Forgiveness is a moral virtue performed in response to the fault of others. The concept of forgiveness is defined as a process of voluntary renunciation of anger and hatred of a harmful act in which the affected person exhibits a warm and kind behavior to the wrongdoer (Zuccarini et al., 2013). Given the presence of negative emotions such as anger and hostility in patients with CHD and the potential for increased risk of CHD

with these emotions, especially anger, forgiveness can play a cardiovascular protective role against anger (May, Sanchez-Gonzalez, Hawkins, Batchelor, & Fincham, 2014). Forgiveness, especially the type known for trait forgiveness, can be associated with lower blood pressure and improved heart rate (Friedberg, Suchday, & Shelov, 2007; Toussaint, Owen, & Cheadle, 2012). Walker (2012) considers forgiveness to be a basic way of eliminating preoccupations, and believes that QOL can be positively changed through different educational methods. Research shows that forgiveness helps control anger and aggression (Ghamari Givi, Mohebbi, & Sadeghi, 2014; Asgari, Alizadeh, & Kazemi, 2016; Malekzadeh, Ezazi Bojnourdi, Shahandeh, Vatankhah, & Bahadori Jahromi, 2017), manage depression (Shirinkar, Namdari, Jamilian, & Abedi, 2016), and reduce stress, and reduce stress-related physical performance in patients, including heart patients (Puggina, 2016).

Given the high prevalence of CHD, the need for its prevention and treatment, and its comorbidity with psychiatric disorders such as stress, anxiety, and depression, patients with CHD have psychological and spiritual needs during treatment. For this reason, researchers recommend the use of psychological treatment as a complementary treatment to pharmaceutical treatment (Dickens et al., 2013). Currently, various psychological interventions are used to treat cardiovascular patients. One of the integrative care models that has been shown to be effective in treating many mental health problems, such as pain control, anxiety, and depression in migraine patients (Derakhshan, Manshaei, Afshar, & Goli, 2016), anxiety (Keyvanipour, Goli, Bigdeli, Boroumand, Rafienia, & Sabahi, 2019), and depressive symptoms and stress (Shore, 2004), is bioenergy economy (BEE) intervention.

This integrative model of care was founded by Farzad Goli, psychosomatic medicine specialist, in 2010 based on biosemiotic medicine (Goli, Rafieian, & Atarodi, 2016; Goli, 2016a). Since 2011, Goli has been leading a postgraduate course and a faculty on BEE and psychosomatic health at the Energy Medicine University in California, USA (http://www.energymedicineuniversity.org/faculty/goli.html). Presently, BEE is practiced in Iran, Turkey, the United States, and Germany by trained therapists and trainers. BEE is also a part of the curriculum of the postdoctoral program on psychosomatic medicine and psychotherapy, which has been held by Isfahan Universities of Medical Sciences, Mashhad Universities of Medical Sciences, and Danesh-e Tandorosti Institute under the supervision of the department of psychosomatic medicine and psychotherapy of the Albert Ludwig University of Freiburg, Freiburg, Germany (https://www.uniklinik-freiburg.de/asialinkvn009/current-projects/daad-projects.html).

BEE is an integrative, evolutionary, body-centered approach to care. Releasing blockages, reprocessing energy information flows, resonating biofield, and opening the whole body to being are the main strategies of this metadiagnostic approach. The main goal of BEE is sustainable development of happiness. This care system tries to integrate matter-energy-information-consciousness process through the 4 levels of body economy, narrative economy, relation economy, and intention economy (Goli, 2016b).[38]

The main goal of BEE is to coordinate the energy-information stream through the physical, symbolic, and reflective worlds of signs. The higher order of energy-information processing leads to higher body resonance level and body awareness, and unconditioning salutogenesis. This holistic approach focuses on intra/inter-transpersonal integrity of energy investment by fostering body tensegrity, narrative coherence, interpersonal synergy, and boundarylessness experience (Goli, 2016b). The BEE program, with this bio-psycho-socio-spiritual approach, seems to be suited

to the numerous therapeutic needs of patients with CHD. Literature review showed that no study has been performed on the effect of BEE-based training, either individually or in groups or in person or electronically, on vegetative function, forgiveness, and QOL in patients with CHD. This study was conducted to determine the effect of a BBE-based psycho-education package on the improvement of vegetative function, forgiveness, and QOL of patients with CHD.

Methods

This study was a randomized controlled clinical trial. The statistical population included all men and women with CHD living in Gonabad, Iran, and referred to Bohlool Hospital in Gonabad during 6 months in 2019-2020. Using convenient sampling and based on the inclusion and exclusion criteria, 40 patients with CHD were selected and randomly assigned to a case and control group (n = 20 each). The study inclusion criteria included CHD diagnosis by a cardiologist in the hospital record, history of myocardial infarction (MI), a history of hospitalization, severity of the disease in terms of moderate risk stratification, drug use, patient instability, willingness to participate, lack of chronic diseases and debilitating complications (such as thyroid, kidney, and liver diseases), physical ability to attend and follow the process (not too old), Iranian nationality, age of 20 to 65 years, and social, economic, and religious homogeneity. The study exclusion criteria included absence from more than 3 training sessions, patient's migration or patient's death during the study period, and withdrawal from the study.

The data were collected using the Forgiveness Likelihood Scale, the World Health Organization Quality of Life (WHOQOL)-BREF, and the vegetative function checklist.

The vegetative function checklist was used to record the vegetative functions of patients such as heart rate, blood pressure, and respiratory rate using a standard monitoring device (Sadat Company, Iran). The reliability of the questionnaire was determined using equivalent reliability method. For this purpose, before monitoring the patients in each field, the accuracy of the blood pressure measuring device was checked using a mercury pressure gauge made in Germany, and the respiratory rate and heart rate were checked using a watch.

The Forgiveness Likelihood Scale (Rye, Loiacono, Folck, Olszewski, Heim, & Madia, 2001) consists of 15 items and 2 subscales for assessing the forgiveness rate toward the offender. The items are scored based on a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree). Higher scores on this scale indicate higher forgiveness. The validity of the entire scale and its 2 subscales [Absence of Negative (AN) and Presence of Positive (PP) subscales] has been reported to be appropriate; the Cronbach's Alpha for the 2 subscales is, respectively, 0.86 and 0.85, and that of the whole scale is 0.87. The correlation of this scale with the Enright Forgiveness Inventory was reported as high (Rye et al., 2001). The reliability of this scale was determined as 0.96 using Cronbach's alpha coefficient (Zandipur & Yadgari, 2008). In the present study, the reliability of the entire scale was assessed using Cronbach's alpha and was calculated at 0.83.

The WHOQOL-BREF Short Form was used to measure the QOL. The questionnaire contains 26 questions and the first 2 questions measure the overall QOL. However, in the present study, the mean score of all statements was considered as overall score of QOL. In the WHOQOL-BREF, the 4 domains of physical health (7 questions), psychological health (6 questions), social relationships (3 questions), and environmental health (8 questions) are measured through 24 questions. In each of the 4 domains, the responder scores between 4 and 20 points; 4 indicates the worst and 20 indicates the

best QOL (Van Biljon, Nel, & Roos, 2015). The Cronbach's alpha coefficient of the healthy population in the 4 domains of physical health, psychological health, social relationships, and environmental health was 0.70, 0.73, 0.55, and 0.84, respectively. In addition, the test-retest reliability coefficient of the WHOQOL-BREF was reported as 0.70 after 2 weeks. In general, the validity and reliability of this questionnaire is estimated to be appropriate (Soltani Shal & Aghamohammadian Sharbaf, 2013).

After obtaining a letter of introduction from Gonabad University of Medical Sciences and presenting it to officials of Bohlool Hospital, the researcher made the necessary arrangements to perform the sampling process. After selecting the participants, and obtaining informed consent from the participants and explaining the objectives and method to them, the patients were randomly assigned to the 2 groups of case and control. The case and control groups first underwent pretest using measuring instruments. The case group (n = 20) was then trained using an audio BEE-based psycho-education package in 8 weekly 180-minute sessions. The package was based on the BEE program (Goli, 2016c) the topics of which are listed in table 1.

Each podcast includes lessons, exercises, lesson summaries, and weekly assignments. The podcast was played for the group in each session in the hospital, and patients were asked to perform the same exercises performed in each session along with the presentation twice a week. It is worth noting that all the patients of the case group joined a telegram group, and were presented with the exercise file (in more detail) as a separate file after each session. This file consisted of a 30-40-minute audio recording. They were also asked to report on the implementation of the assignments and their number in a form and submit it on the next session. The structure of the first session differed from that of the following sessions, and included introductions, and familiarization with and preparation for the course. Then, 90 minutes of listening to the podcast and performing the exercises began under the supervision of a trained facilitator.

Table 1. Summary of sessions

Session	Topic	Subject	Exercise
1	Relaxation	Work-burden/mind-body coordination, stress response/release	Abdominal breathing/gradual relaxation/body purification
2	Tensegrity	Somatic memory, armor/integrity-safety	Vibration/tensegrity exercises
3	Body awareness	Body sense, salutogenesis	Body awareness (superficial, deep, balanced and visceral senses)
4	Attention work	Attention skewness/conscious direction of attention, danger brain-communication brain/gratitude	Attention/gratitude exercises, Bioenergy work
5	Narrative work	Narrative skewness (resentment/blame/greed/melancholia), non-life/self-care bias, time and narration (memory reconstruction)/narration and body tune	Body caress, lack of interpretation, pragmatic speech, body awareness
6	Relation work	Relation-nature/selves/avoidance of rejection/limit and love/In-field and synergy/relational body	Positive no/sharing, biofield work
7	Liberation from non-life (forgiveness: inter/intrapersonal)	Death instinct?!/Repetition fate/stabilized anger/why we do not forgive/value bias/body bias	Biofield work/ refining resentments (forgiveness with guided imagination), body purification
8	Path of love (forgiveness: transpersonal)	Transpersonal dimension/openness to whole/unconditioned health providing/kindness: mature defense/submission/intentional force	Wholehearedness, love meditation (transpersonal forgiveness)

Subsequent weekly sessions began with 30 minutes of feedback on weekly exercises and physical, mental, and communication changes, as well as answers to the participants' questions. Then, the first part of the podcast (lesson) was presented for 45 minutes, and after a 30-minute rest and break, the second part of the podcast (presenting the exercises) was presented for 45 minutes, and finally, the session ended with 30 minutes of feedback on exercises, answering questions, and presenting assignments. No specific intervention was performed in the control group, although both groups (case and control) received routine cardiovascular medications and routine care. Then, the vegetative function checklist, Forgiveness Likelihood Scale, and WHOQOL-BREF (posttest) were completed for both groups. At the 1-month follow-up, both groups underwent the second posttest using the measurement instruments to ensure the effectiveness of the training package.

All pretest and posttest data were analyzed using repeated measures analysis of variance (ANOVA) in SPSS software (version 26; IBM Corp., Armonk, NY, USA). Data analysis was performed at a significance level of 5% and statistical power of 80%.

Results

Of all the study population, 75% (30) were men and 25% (10) were women, and 10% (4) were single and 90% (36) were married. In terms of academic status, 45% (18) a pre-diploma degree, 37.5% (15) had diploma, 2.5% (1) had associate's degree, 12.5% (5) had a bachelor's degree, and 2.5% (1) had higher education. Moreover, 37.5% (15) were self-employed, 10% (4) had a government job, 27.5% (11) were retired, 22.5% (9) were housewives, and 2.5% (1) were unemployed. The mean age of the subjects was 51.65 years, their mean weight was 72.97 kg, and their mean height was 168.27 cm.

Table 2 shows the mean scores of vegetative functions (in the 3 categories of heart rate, hypertension (systolic/diastolic), and respiration rate), forgiveness, and QOL and its physical, psychological, social relations, and environmental health dimensions in the case and control groups.

To assess the significance of the differences in the scores of forgiveness and QOL, repeated measures ANOVA was used, the results of which are presented in table 3.

Table 2. Mean and standard deviations of scores of vegetative functions, forgiveness, and quality of life and its components in the experimental and control groups

Variable	Group	N	Mean			SD		
			Pretest	Posttest	Follow-up	Pretest	Posttest	Follow-up
Heart rate	Experimental	20	77.10	69.70	76.75	9.64	6.02	7.40
	Control	20	71.70	72.85	74.95	9.18	7.66	6.76
Systolic hypertension	Experimental	20	123.75	118.7	124.50	15.29	14.22	15.75
	Control	20	125.25	111.30	123.40	13.62	35.06	9.58
diastole	Experimental	20	75.0	75.25	81.40	18.85	11.18	7.41
	Control	20	79.75	80.50	79.15	8.19	5.95	5.69
Breath rate	Experimental	20	25.20	24.55	25.00	1.93	1.88	1.75
	Control	20	23.60	23.40	23.40	2.35	2.28	2.52
Forgiveness	Experimental	20	41.25	53.35	44.30	7.70	4.66	5.82
	Control	20	45.95	46.55	45.00	7.66	5.34	3.73
Quality of life	Experimental	20	79.60	95.10	79.90	11.77	8.86	7.96
	Control	20	82.05	83.15	77.25	11.70	9.50	8.00
Physical health	Experimental	20	23.10	28.15	25.05	4.57	3.12	3.23
	Control	20	24.50	25.45	23.65	3.56	3.83	4.49
Psychological health	Experimental	20	19.90	23.75	19.95	3.62	3.42	3.23
	Control	20	19.85	19.55	19.20	3.90	2.72	4.49
Social relationships	Experimental	20	10.60	12.15	9.95	2.39	1.22	2.01
	Control	20	10.25	10.55	9.50	2.33	1.82	1.54
Environment health	Experimental	20	27.30	30.80	25.45	3.84	4.16	3.86
	Control	20	27.50	27.55	24.35	4.90	3.78	5.75

Table 3. Results of repeated measures analysis of variance for pretest, posttest, and follow-up

Variable	Effects	Source	SS	df	MS	F	P-value	Eta Squared
Heart rate	Within subjects	Time	443.32	2	221.66	7.51	0.001	0.166
		Time * group	389.22	2	194.61	6.60	0.002	0.148
	Between-subjects	Intercept	655049.63	1	655049.63	5036.74	0.000	0.993
		Group	61.63	1	61.63	0.474	0.495	0.012
Systolic hypertension	Within subjects	Time	2263.12	1.29	1764.07	3.78	0.048	0.091
		Time * group	423.950	1.283	330.463	0.71	0.438	0.018
	Between-subjects	Intercept	1761521.01	1	1761521.01	3544.50	0.000	0.989
		Group	165.67	1	165.67	0.33	0.567	0.009
Diastolic hypertension	Within subjects	Time	192.23	1.54	124.61	0.98	0.363	0.025
		Time * group	351.67	1.54	227.93	1.78	0.183	0.045
	Between-subjects	Intercept	739627.01	1	739627.01	5492.51	0.000	0.993
		Group	200.20	1	200.20	1.48	0.230	0.038
Breathing number	Within subjects	Time	3.62	2	1.81	2.50	0.089	0.062
		Time * group	1.35	2	0.67	0.93	0.398	0.024
	Between-subjects	Intercept	70228.41	1	70228.41	5732.73	0.000	0.993
		Group	63.07	1	63.07	5.15	0.029	0.119
Forgiveness	Within subjects	Time	926.87	2	463.43	15.29	0.000	0.287
		Time * group	681.67	2	340.83	11.24	0.000	0.228
	Between-subjects	Intercept	254656.53	1	254656.53	5369.32	0.000	0.993
		Group	6.53	1	6.53	0.138	0.713	0.004
Quality of life	Within subjects	Time	2368.82	1	2368.82	51.49	0.000	0.575
		Time * group	936.15	1	936.15	20.35	0.000	0.349
	Between-subjects	Intercept	823529.01	1	823529.01	5065.48	0.000	0.993
		Group	492.07	1	492.07	3.03	0.090	0.074
Physical health	Within subjects	Time	204.07	2	102.03	10.65	0.000	0.22
		Time * group	87.80	2	43.90	4.58	0.013	108
	Between-subjects	Intercept	74900.03	1	74900.03	2978.24	0.000	0.98
		Group	24.30	1	24.30	0.97	0.332	0.025
Psychological health	Within subjects	Time	406.22	2	203.11	20.559	0.000	0.351
		Time * group	89.62	2	44.81	4.536	0.014	0.107
	Between-subjects	Intercept	57860.21	1	57860.21	3004.83	0.000	0.988
		Group	106.41	1	106.41	5.526	0.024	0.127
Social relationships	Within subjects	Time	53.15	1.60	33.11	9.779	0.001	0.205
		Time * group	9.65	1.60	6.01	1.776	0.184	0.045
	Between-subjects	Intercept	13230.00	1	13230.00	2290.73	0.000	0.984
		group	19.20	1	19.20	3.324	0.076	0.080
Environment health	Within subjects	Time	369.02	2	184.51	9.010	0.000	0.192
		Time * group	60.72	2	30.35	1.483	0.234	0.038
	Between-subjects	Intercept	88509.01	1	88509.01	4856.23	0.000	0.992
		group	57.41	1	57.41	3.15	0.084	0.077

SS: Sum of squares; df: Degree of freedom; MS: Mean of squares

It should be noted that the use of this test required several initial assumptions, including normal distribution of scores, homogeneity of variances, and homogeneity of covariance matrices. For the scores of forgiveness and QOL in both groups, Kolmogorov–Smirnov (K-S) test confirmed the assumed normality ($P > 0.05$) and Levene's test confirmed the assumed homogeneity of variances ($P > 0.05$). For the assumption of homogeneity of the covariance matrix, Mauchly's test was used; the value obtained for forgiveness ($P = 0.098$) indicates that the test ($P > 0.05$) was insignificant and the assumed sphericity had not been violated. To examine the hypothesis related to forgiveness, the

information related to assumed sphericity was used. However, the result of this test for QOL (P = 0.002) showed that the assumed sphericity had been violated, and thus, the alternative Greenhouse-Geisser test was used for QOL.

In table 3, the results of repeated measures ANOVA for vegetative function, forgiveness, and QOL and its dimensions are summarized. Based on the results presented in table 3, there is a significant difference in heart rate per minute (P = 0.002) in the 3 stages of the test between the case and control groups; heart rate decreased significantly in the case group compared to the control group (P < 0.05). However, the other vegetative indices, such as systolic and diastolic blood pressure and respiratory rate per minute, did not significantly differ between the groups (P > 0.05). In table 3, the mutual effect of forgiveness and group shows a significant difference between the groups in terms of forgiveness scores in the 3 stages of the study. In other words, the forgiveness score significantly differed between the two groups (P = 0.001). Considering the mutual effect of QOL and group, it is clear that there is a significant difference between the groups in terms of QOL scores in the 3 study stages. In other words, the overall QOL was significantly different in the two groups (P< 0.001). There was a significant difference between the groups in terms of the scores of physical health (P = 0.013) and psychological health (P = 0.014) in the 3 stages of testing (Table 3), indicating that the scores of these dimensions increased significantly in the case group compared to the control (P < 0.05). However, no significant difference (P > 0.05) was observed in the other 2 dimensions of QOL (social relations and environmental health).

The results of the Bonferroni test presented in tables 4 and 5 show the pairwise comparison of the vegetative indices, forgiveness rate, and the QOL and its dimensions in the 3 study stages in the case and control groups.

Table 4. Pairwise comparisons of pretest, post-test, and follow-up scores of vegetative functions and forgiveness

Variable	(I) Time	(J) Time	Mean Difference (I-J)	Std. Error	P-value
Heart rate	Pretest	Posttest	3.25	1.28	0.045
		Follow-up	-1.32	1.36	1.000
	Posttest	Pretest	3.25	1.28	0.045
		Follow-up	-4.57*	0.97	0.000
	Follow-up	Pretest	-1.32	1.36	1.000
		Posttest	4.57*	0.97	0.000
Systolic hypertension	Pretest	Posttest	9.47	4.33	0.105
		Follow-up	0.55	1.99	1.000
	Posttest	Pretest	-9.47	4.33	0.105
		Follow-up	-8.92	4.71	0.197
	Follow-up	Pretest	-0.55	1.99	1.000
		Posttest	8.92	4.71	0.197
Diastolic hypertension	Pretest	Posttest	-0.50	2.64	1.000
		Follow-up	-2.90	2.41	0.708
	Posttest	Pretest	0.50	2.64	1.000
		Follow-up	-2.40	1.41	0.294
	Follow-up	Pretest	2.90	2.41	0.708
		Posttest	2.40	1.41	0.294
Breathing number	Pretest	Posttest	0.42*	0.17	0.050
		Follow-up	0.20	0.18	0.837
	Posttest	Pretest	-0.42*	0.17	0.050
		Follow-up	-0.22	0.22	0.913
	Follow-up	Pretest	-0.20	0.18	0.837
		Posttest	0.22	0.22	0.913
Forgiveness	Pretest	Posttest	-6.350*	1.352	0.000
		Follow-up	-1.050	1.312	1.000
	Posttest	Pretest	6.350*	1.352	0.000
		Follow-up	5.300*	0.999	0.000
	Follow-up	Pretest	1.050	1.312	1.000
		Posttest	-5.300*	0.999	0.000

Based on estimated marginal means

*The mean difference is significant at 0.05 level.

b. Adjustment for multiple comparisons: Bonferroni test

Table 5. Pairwise comparisons of pretest, posttest, and follow-up scores of quality of life and its components

Variable	(I) Time	(J) Time	MD (I-J)	SE	P-value
Quality of Life	Pretest	Posttest	-8.30*	1.99	0.000
		Follow-up	2.250	1.97	0.779
	Posttest	Pretest	8.30*	1.99	0.000
		Follow-up	10.55*	1.20	0.000
	Follow-up	Pretest	-2.25	1.97	0.779
		Posttest	-10.55*	1.200	0.000
Physical health	Pretest	Posttest	-3.0*	0.72	0.001
		Follow-up	-0.55	0.77	1.000
	Posttest	Pretest	3.0*	0.72	0.001
		Follow-up	2.45*	0.57	0.000
	Follow-up	Pretest	0.55	0.77	1.000
		Posttest	-2.45*	0.57	0.000
Psychological health	Pretest	Posttest	-1.77*	0.69	0.041
		Follow-up	-4.47*	0.71	0.000
	Posttest	Pretest	1.77*	0.69	0.041
		Follow-up	-2.70*	0.71	0.002
	Follow-up	Pretest	4.47*	0.71	0.000
		Posttest	2.70*	0.71	0.002
Social relationships	Pretest	Posttest	-0.92	0.41	0.095
		Follow-up	0.70	0.41	0.285
	Posttest	Pretest	0.92	0.41	0.095
		Follow-up	1.62*	0.26	0.000
	Follow-up	Pretest	-0.70	0.41	0.285
		Posttest	-1.62*	0.26	0.000
Environment health	Pretest	Posttest	-1.77	0.85	0.133
		Follow-up	2.50	1.11	0.093
	Posttest	Pretest	1.77	0.85	0.133
		Follow-up	4.27*	1.05	0.001
	Follow-up	Pretest	-2.50	1.11	0.093
		Posttest	-4.27*	1.05	0.001

MD: Mean Difference; SE:Standard error
Based on estimated marginal means
*The mean difference is significant at 0.05 level.
b. Adjustment for multiple comparisons: Bonferroni test

As seen in table 4, the vegetative index of heart rate significantly decreased in the posttest compared to the pretest and vice versa (P = 0.045), but significantly increased in the follow-up compared to the posttest vice versa (P = 0.001). The other two vegetative indices, systolic/diastolic blood pressure and respiratory rate, did not significantly differ between the groups (P > 0.05). As can be seen in table 4, the rate of forgiveness increased significantly in the posttest compared to pretest vice versa (from posttest to pretest) (P = 0.001), while this difference from posttest to follow-up was not significant and vice versa (P = 1.00). However, the forgiveness score significantly decreased in the follow-up compared to posttest and vice versa (P < 0.001). Based on the data presented in table 5, the overall QOL score significantly increased from in the posttest compared to the pretest (and vice versa from posttest to pretest) (P = 0.001), but it significantly decreased in the follow-up compared to the posttest and vice versa (P = 0.001). Moreover, the difference in the QOL score from pretest to follow-up and vice versa was not significant (P = 0.779). The results of the Bonferroni test on the dimensions of physical health and psychological health are presented in table 5; the level of physical and psychological health has increased significantly in the posttest compared to pretest and vice versa (P < 0.05). Moreover, the increase in these two dimensions in the follow-up compared to posttest and vice versa was significant (P < 0.05).

Discussion

The aim of the present study was to determine the effect of a BBE-based psycho-education package on the improvement of vegetative functions, forgiveness, and QOL of patients with CHD. Repeated measures ANOVA and Bonferroni test showed that group education through an audio podcast reduced heart rate in the posttest compared to the pretest; however, this effect was only significant after a month of follow-up. This finding is consistent with that of similar studies (Friedberg et al., 2007; Toussaint et al., 2012; Derakhshan et al., 2016; Keyvanipour et al., 2019; Shore, 2004). However, in the present study, the effect of this intervention on the improvement of blood pressure and respiration rate was not confirmed in either the posttest or follow-up.

This educational intervention appears to have been effective on some vegetative functions of patients with CHD, including reduced heart rate. The effect of the training package on heart rate reduction may be related to reduction of emotional experiences such as anger, anxiety, and depression, and the effect of the training package techniques including relaxation, body awareness, and self-awareness on stress management. In addition, the forgiveness-related section of the training may explain the findings on the effect of forgiveness on stress reduction and its somatic symptoms (Puggina, 2016) and the relationship between the components of forgiveness and relaxation and body-awareness and its effect on stress management, and thus, reduced heart rate in cardiac patients (Valente et al., 2014). Nevertheless, the unsustainability of this effect is consistent with the results of this study regarding the unsustainable effect of education on forgiveness and QOL. In fact, reduction in the effect of BEE education on these variables reduces its direct and indirect effects on heart rate. Another assumption could be related to the psychological distress of patients due to negative social events (such as Soleimani's martyrdom, plane crash, and corona outbreak) that have been reported by many patients, which made them less likely to follow these exercises. This likelihood is increased by comparison of heart rate in the pretest, posttest, and follow-up stages between the case group and the control group and the increased heart rate in the control group compared to the case group in the follow-up phase compared to the pretest (although insignificant).

The findings of this study did not confirm the effect of the training package on reduction of systolic and diastolic blood pressure and respiratory rate, either in the posttest or in the follow-up phase. In interpreting this finding, we can point to the overlap and interaction of somatic symptoms of stress and symptoms of CHD. In fact, some vegetative functions of patients with CHD affected by stress respond with the effect of BEE program on body awareness relaxation, reduced stress levels, anxiety, improved mood and emotions and their management, increased forgiveness, and reduced negative emotional experiences and physical symptoms of stress, but some of these symptoms which are the result of dysfunction in the cardiovascular system are not affected.

The results of the present study also showed that the BEE-based psycho-education package increased the forgiveness scores of patients in the posttest compared to the pretest; however, this increase was not significant in the follow-up compared to posttest. This finding is consistent with the findings of similar studies in which face-to-face training has been used to influence forgiveness (Ghamari Givi et al., 2014; Asgari et al., 2016; Malekzadeh et al., 2017). It seems that BEE-based educational intervention can increase forgiveness scores of patients through training

and using intrapersonal, interpersonal, and transpersonal forgiveness as part of the training program, and possibly reduce negative emotions such as anger (Ghamari Givi et al., 2014; Asgari et al., 2016; Malekzadeh et al., 2017). However, the unsustainability of the positive status of patient forgiveness after 1 month may be due to abandonment of exercises and homework during the follow-up and/or short duration of exercises.

The results of this study showed the effect of the psycho-educational intervention on QOL. After the intervention, QOL scores increased significantly in the posttest compared to the pretest in the case group compared to the control group. This finding is consistent with the findings of similar studies in which face-to-face training has been used to influence QOL (May et al., 2014; Walker, 2012; Shiyasi & Khayatan, 2015). It seems that a BEE-based audio package used in coordination with different physical, cognitive, and communication levels and different techniques (such as relaxation, body awareness, orientation, relationship building, and forgiveness) can reduce negative emotions, cognitive barriers, and social adjustment and positively alter patients' perceptions of their QOL. However, it was found that positive effect of research intervention on QOL was only limited to the posttest stage and QOL was significantly reduced in the follow-up stage to almost that in the pretest stage. From this finding, two conclusions can be drawn. The first is the overlap and similarity of some of the forgiveness, QOL, and health constructs associated with CHD. Everything that happened in the posttest or follow-up phase for patients in one variable occurred in another variable. A health-related training program is associated with relaxing the body, regulating mood and emotions, and recognizing and forgiving all of which are important in forgiveness and QOL of heart patients. The second inference is related to psychological distress of patients in social events. Here, the assumption can be considered by looking at the findings presented in table 1 and comparing the pretest scores and tracking the patients of the 2 groups in terms of QOL.

The results of this study showed the effect of educational intervention on different dimensions of QOL; this intervention only caused a significant increase in scores of physical health and psychological health in the case group in the posttest compared to the pretest and the scores of these variables significantly reduced in the follow-up compared to posttest. The results also showed that the other 2 dimensions of QOL (social relations and environmental health) were not affected by the intervention. For interpretation of this finding based on the effect of the educational program on dimensions of QOL, we should take into consideration the content of the educational program (such as relaxation, and self-awareness and its closeness to the dimensions of physical and mental health), differences in individual characteristics and health status and its adaptation to dimensions of health and QOL, the timing of the educational intervention (time constraints for using techniques in areas outside of oneself such as relationships with others and environmental health), and limitations of self-reporting method in performing homework assignments (e.g., uncertainty about the complete and correct performance of exercises) and its effect on QOL and its dimensions. Therefore, further studies seem to be needed for a more accurate assessment of these two variables.

One of the limitations of the present study was the application of self-assessment questionnaires and the possibility of bias in them, impossibility of a longer follow-up such as 3 months or more due to the coronavirus outbreak, small sample size for the study of individual and socio-economic factors that can be effective in these interventions and lack of control over some of the confounding variables during the

intervention (the mentioned social events). Based on the limitations of the present study, it is suggested that these cases be considered in subsequent studies and that the training be conducted on a larger scale to assess individual-social factors with a longer follow-up stage. It is also recommended that future studies perform these interventions for a longer period of time to stabilize their positive effects.

Conclusion

BEE-based psycho-education had significant effects on reducing heart rate, and improving forgiveness and QOL of patients with CHD. However, these effects did not persist during the follow-up period due to pervasive social crises that prevented the program from being pursued appropriately. In order to sustain the positive effects of the intervention, more long-term exercises and methods were needed to strengthen motivation and monitor the continuation of this psychosomatic intervention.

Conflict of Interests

Authors have no conflict of interests.

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The ethical approval of this study was obtained from the ethics committee of Isfahan University of Medical Sciences (code IR.MUI.RESEARCH.REC.1398.467) and the study protocol was registered in the clinical internship database (IRCT20200404010469 13N1).

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Comparison of the effectiveness of Cognitive-Behavioral Therapy and Acceptance and Commitment Therapy on Anxiety, Perceived Stress, and Pain Coping Strategies in Patients with Cancer

Manouchehr Faryabi[1], Amin Rafieipour[2], Kobra Haji Alizadeh[3], Soheila Khodavardian[4]

[1] Department of Psychology, Kish International Branch, Islamic Azad University, Kish island, Iran
[2] Assistant Professor, Tehran Branch, Payame Noor University, Tehran, Iran
[3] Associate Professor, Department of Psychology, Bandar Abbas Branch, Islamic Azad University, Bandar Abbas, Iran
[4] Assistant Professor, Department of Psychology, Karaj Branch, Islamic Azad University, Alborz, Iran

Corresponding Author: Amin Rafieipour***; Assistant Professor, Tehran Branch, Payame Noor University, Tehran, Iran***
Email: rafiepoor@pnu.ac.ir

Quantitative Study

Abstract

Background: Cancer is one of the main and basic dilemmas of health and treatment all around the world. The purpose of this study was the comparison of the effectiveness of cognitive-behavioral therapy (CBT) and acceptance and commitment therapy (ACT) on anxiety, perceived stress, and pain coping strategies in patients with cancer.

Methods: The methodology of the current study was of practical, semi-experimental, and pretest-posttest design with a control group. The statistical population of this study included all patients with leukemia who were hospitalized between April and June 2019 in Sayed Al Shohada Hospital, Isfahan, Iran, and their disease was confirmed. The study sample included 45 people who were selected from the mentioned population using convenience sampling and were assigned to the 3 groups of ACT (n = 15), CBT (n = 15), and control group (n =15) through simple randomization method. Data were collected using the Perceived Stress Scale (PSS) (Cohen et al., 1994), Beck Anxiety Inventory (BAI) (Beck et al., 1991), and Coping Strategy Questionnaire (CSQ) (Rosenstiel and Keefe, 1985). Data analysis was conducted using analysis of covariance (ANCOVA) in SPSS software.

Results: The results showed that CBT and ACT were effective on decreasing anxiety and perceived stress, and increasing pain coping strategies in patients with cancer. ACT was more effective than CBT on anxiety, perceived stress, and pain coping strategies.

Conclusion: It can be concluded that CBT and ACT are effective on anxiety, perceived stress, and pain coping strategies and can be used for patients with cancer.

Keywords: Anxiety disorders; Cognitive-behavioral therapy; Pain

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Introduction

Cancer is one of the main and basic dilemmas of health and treatment all around the world, and it is considered the third cause of death and the second chronic non-communicable disease. Cancer includes a group of diseases characterized by uncontrollable and unusual expansion of cells (Baitar et al., 2018). Unfortunately, statistics of the individuals affected by this disease is increasing in all age groups, and has a significant effect on different dimensions of the patients' life and even on their caregivers and surroundings (Batinic, Nesvanulica, & Stankovic, 2017). Patients with cancer suffer from physical (such as fatigue, shortness of breath, neurological disease, poor bowel and urine control, bone fractures, pain, sleep, and endocrine problems, and increased risk of chronic diseases such as heart attack and osteoporosis) and psychological (such as depression, anxiety, cognitive disorder, negative thoughts, fear of disease recurrence and death, loneliness, sexual problems, and body image) complications (Baudry, Lelorain, Mahieuxe, & Christophe, 2018).

One of the most common cancers is leukemia. This disease is categorized into myeloid, and lymphoma based on cell origin and chronic and acute disease progression. It is categorized into the 4 groups of acute lymphoblastic, acute myeloblastic, chronic lymphoblastic, and chronic myeloblastic leukemia (Boyle, Stanton, Ganz, Crespi, & Bower, 2017). Leukemia constitutes 8% of the total cancers of the human population, and it is the fifth most common cancer group in the world. Cancers of the hematopoietic tissue such as bone marrow and lymphatic system are created with the help of white blood cells and lymph. White blood cells grow and divide when the body needs in a regular and controlled way, but blood cancer disturbs this process and makes blood cell development uncontrollable. In acute leukemia, bone marrow generates many immature white cells. Meanwhile, the natural production of the blood white cells is interrupted, which in turn destroys the ability of the body to confront diseases (Brunault et al., 2016).

Although surgery, chemotherapy, radiotherapy, and hormone therapy have increased the survival rate of these people, these common cancer treatments, in turn, lead to short-term and long-term complications in these patients so that patients with breast cancer suffer from a broad range of somatic, psychological, and social signs and symptoms during the diagnosis and treatment process (Chambers et al., 2018). Researchers believe that coping strategies affect individual perception of pain severity, and the ability to control and tolerate pain and continue everyday activities (Cuijpers, Cristea, Karyotaki, Reijnders, & Huibers, 2016). Patients with chronic pain apply various coping strategies and some are adaptive and others are maladaptive. Studies on patients with chronic pain have indicated that while using active coping strategies (such as trying to perform one's duties despite having pain, lack of attention to pain, and use of muscle relaxation) have adaptive results, using inactive coping strategies (dependence and reliance on others to gain contribution for the controlling of the pain and restriction of activity) is accompanied with severe depression, more pain, and physical disability (Dezutter, Dewitte, Thauvoye, & Vanhooren, 2017).

One of the major issues which patients with cancer face is the stress and anxiety resulted from confrontation and adjustment with the patient. Different researchers have found that the perceived stress number of patients with cancer as an explanatory mechanism explains the increasing decline in multiple quality of life (QOL) indicators (Emmert et al., 2017). Based on the interactive-cognitive model of

stress, the person's assessment of his/her communication with the environment has a determinate role in creating stress. If a person conceives his/her environment as extremely stressful and feels that he/she does not have the ability to confront dilemmas, his/her stress is increased, but if he/she knows that he/she can face stressful events, he/she will experience less stress. Moreover, those individuals who perceive their disease experience negatively, have a higher level of perceived stress (Sarid, Berger, & Segal-Engelchin, 2010).

There is much evidence that implies that there is a relationship between cancer and psychological pressure and those emotional factors which are an integral part of civilized societies. In addition to the effect of psychological issues on the formation of cancer, diagnosis and treatment of cancer are accompanied by stress and anxiety, which affects the health of the person negatively. The most common psychological disorders in these patients, according to studies, are adjustment disorder in addition to anxiety, accompanied by depression, and accompanied simultaneously by depression and anxiety (Borji, Nourmohammadi, Otaghi, Salimi, & Tarjoman, 2017). Anxiety entails insecurity or a threat that the person does not clearly understand its source, a threatening situation which is perceived under the effect of increased arousals, both internal and external, that the person is unable to control (Abad, Bakhtiari, Kashani, & Habibi, 2016).

Today, a set of treatment approaches, named third-wave behavioral therapy, are designed to solve chronic problems. One of these treatment approaches is acceptance and commitment therapy (ACT) that is a kind of clinical behavioral analysis applied in psychotherapy. ACT is a psychological intervention based on evidence that integrates acceptance and mindfulness in different ways with commitment and behavior change strategies. It can be said that one of the main objectives of ACT is to increase psychological flexibility. In other words, it helps the patients to expel avoidance and cognitive fusion (Majeed & Sudak, 2017). ACT is focused solely on a better life regardless of whether or not that better life is accompanied by a better feeling. ACT is based in the idea that the individual must give up fighting with himself and not restrict his life in order to be relieved from unpleasant inner experiences. Through clarification and explanation of values, the person tries to improve his/her life (Mozafari, Nejat, Tozandehjani, & Samari, 2020).

Psychological consequences of cancer and its treatment have been the subject of many research activities. In this regard, the cognitive-behavioral approach is among the approaches in psychology that have attracted the attention of researchers and psychologists during the last few decades. This approach can help patients minimize the negative psychological effects of their disease. There is strong empirical support for the use of cognitive-behavioral therapy (CBT), as a novel health care method, in common psychological problems in somatic diseases. Hitherto, cognitive-behavioral models and their treatment protocols have been reported as effective on a great number of psychological disorders and chronic medical diseases, including cancer, in clinical studies. Therefore, considering variables that can have a protective role against stress is important. Moreover, lack of sufficient scientific resources regarding protective variables for stress in patients with cancer is a gap that can be filled with the present study. The results of such a study will be a preliminary basis for further studies and designing specific interventions for the improvement of psychological problems in patients with cancer. Thus, the present study was conducted with the aim to compare the effectiveness of CBT and ACT on anxiety, perceived stress, and pain coping strategies in patients with leukemia.

Methods

This study was a semi-experimental research with a pretest-posttest design and control group. The statistical population of this study included all patients with leukemia who were hospitalized between April and June 2019 in Sayed Al Shohada Hospital, Isfahan, Iran, and their disease was confirmed. The study sample included 45 people who were selected from the mentioned population using convenience sampling and were assigned to the 3 groups of ACT (n = 15), cognitive-behavioral group training (CBGT) (n = 15), and control group (n = 15) through simple randomization method. The sample volume was determined based on an effect size of 0.25, alpha of 0.05, and power of 0.80 in 3 groups. The minimum number of samples to achieve the desired power was calculated as 15 people in each group, a total of 45 people. The study inclusion criteria included complete consent to participate in the research, a specialist's diagnosis of leukemia, a minimum education of guidance school, lack of any other chronic diseases and physical and mental disabilities, and a maximum age of 80 years. The exclusion criteria included having any kind of chronic condition such as diabetes and cardiovascular disease, having any kind of physical or mental disabilities, misusing any kind of drug, taking any kind of antidepressant drugs, having a history of psychological diseases, and absence from more than 3 treatment sessions. Ethical principles were taken into consideration in the present study. Before conducting the study, the objectives of the study were explained for participants. They were assured that participating in the study is completely optional and failure to participate does not have any effect on their health care process. They were also assured of the confidentiality of their information. Then, they were asked to sign a consent form, and all questionnaires were completed by the individuals.

Perceived Stress Scale: The Perceived Stress Scale (PSS) was developed in 1994 by Cohen et al. This scale includes 14 items of which 7 items are positive, and 7 items are negative. Every item is scored on a 5-point scale ranging from never (0) to most often (4). This scale includes items with reverse scoring. In other words, all 7 positive items are scaled contrariwise. Higher scores in this questionnaire represent higher perceived stress, and lower scores represent lower perceived stress. Cohen et al. reported Cronbach's alpha coefficients of 0.86 and 0.77 for the 7 positive items and 7 negative items, respectively, and 0.83 for the whole scale (Cohen et al., 1994). Maroufizadeh, Zareiyan, and Sigari, (2014) implemented this scale among female teachers and evaluated its validity using Cronbach's alpha as an internal consistency index of the PSS ($\alpha = 0.81$).

Beck Anxiety Inventory: The Beck Anxiety Inventory (BAI) was designed by Beck et al. in 1991 for measuring the amount of anxiety and includes 21 statements. Each statement reflects a symptom of anxiety; symptoms experienced by those who are clinically anxious or those who are at anxiety making position. To complete the BAI, the responder must read a list of the symptoms and grade the symptoms quantitatively. Changes ranged from 0 to 63. The higher scores are indicative of the severity of the anxiety. Beck et al. (1991) found the internal consistency of this scale to range between 0.73 and 0.92. Khesht Masjedi, Omar, and Masoleh (2015) reported that the test-retest reliability of the BAI ranges between 0.48 and 0.86 based on the kind of the statistical population.

Coping strategy questionnaire: The Coping Strategy Questionnaire (CSQ) was developed by Rosenstiel and Keefe in 1983. The CSQ measures 6 cognitive coping strategies

(distraction, catastrophizing, ignoring pain sensations, distancing from pain, coping self-statements, and praying) using 42 statements. Every coping strategy measures behavior (raising behavioral activity). Each of the 7 coping strategies is made up of 6 statements. The subject is asked to read each statement carefully and specify how much he/she uses each mentioned strategy when experiencing pain. Higher scores on this scale indicate higher pain coping strategies and lower scores indicate lower pain coping strategies. Rosenstiel and Keefe have norm-referenced this questionnaire among a group of patients with chronic back pain and measured the internal consistency coefficient of its 7 subscales (0.71 and 0.85) (Rosenstiel & Keefe, 1983). The reliability coefficient of the subscales of the Persian version of the CSQ in the Iranian population has been reported between 0.74 and 0.83 (Saffari, Pakpour, Yaghobidoot, & Koenige, 2015).

Data were analyzed using descriptive statistics such as mean and standard deviation, and inferential statistic such as univariate analysis of covariance (ANCOVA) in SPSS software (version 22; IBM Corp., Armonk, NY, USA). Shapiro-Wilk test was used to measure the normality default of the ANCOVA, and Levene's test was used to assess the homogeneity of the regression slopes to study the homogeneity of the variances. Significance level was considered as 0.05.

Results

Mean ± standard deviation of age in the CBT, ACT, and control group was 56.12 ± 3.44, 53.27 ± 10.89, and 55.10 ± 3.4, respectively.

As can be seen in table 1, as the probability value was higher than the significance level, the studied groups were identical in terms of gender, education, and marriage. Before conducting ANCOVA, Shapiro-Wilk and Levene's test were used to measure the observation of the required pre-assumptions. Shapiro-Wilk test for the distribution of perceived stress, anxiety, and coping strategies with stress in the pretest stage did not reject the normality assumption. Levene's test was used to measure the pre-assumption of the homogeneity error variance. The results of Levene's test did not reject the hypothesis of the homogeneity of the variances. Studding the homogeneity of the regression slopes also indicated that the pre-assumption of the homogeneity of the regression slopes was established. Therefore, the required pre-assumptions for conducting univariate ANCOVA existed. Descriptive indices, in addition to the results of ANCOVA, are presented in table 2.

Wilk's lambda criterion was used to measure the significance of the multivariable effect. Wilk's lambda criterion indicated that the effect of group on the linear composition of the group on the dependent variables is significant (Partial η^2 = 0.77; F = 42.27). In other words, there was a statistically significant difference between the 3 groups at least in one of the studies.

Table 1. Frequency distribution and comparison of the demographic features of the participants

Demographic features		ACT n (%)	CBT n (%)	Control n (%)	P-value
Gender	Woman	6 (40)	86 (53.3)	7 (46.7)	0.44
	Man	9 (60)	76 (46.7)	8 (53.3)	
Education	Pre-diploma	9 (60)	86 (53.3)	10 (66.7)	0.29
	Diploma	5 (33.3)	56 (33.3)	30(2)	
	Bachelor's	1 (6.7)	16 (6.7)	1 (6.7)	
	Master's	0 (0)	16 (6.7)	1 (6.7)	
Marital status	Single	2 (13.3)	16 (6.7)	2 (13.3)	0.51
	Married	13(86.7)	146 (93.3)	13 (86.7)	

ACT: Acceptance and commitment therapy; CBT: Cognitive-behavioral therapy

Table 2. Central and dispersion index of the studied variables in the experimental and control groups

Variable	Group	Pretest	Posttest
		Mean ± SD	Mean ± SD
Anxiety	Acceptance and commitment therapy	14.20 ± 2.48	9.80 ± 2.67
	Cognitive-behavioral therapy	15.40 ± 3.35	12.73 ± 3.34
	Control	15.47 ± 1.55	15.00 ± 1.51
Perceived stress	Acceptance and commitment therapy	14.27 ± 3.08	10.33 ± 3.08
	Cognitive-behavioral therapy	15.00 ± 3.7	12.60 ±2.97
	Control	13.73 ± 2.08	13.27 ± 2.08
Pain coping strategies	98.80	11.15 ± 21.40	14.23 ± 98.80
	101.60	8.44 ± 115.07	8.30 ± 101.60
	100.07	10.54 ± 100.53	10.37 ± 100.07

SD: Standard deviation

Univariate ANCOVA was conducted separately for each variable in order to determine the significant source of the multivariable effect. The results presented in table 3 indicate that the group significantly effects the scores of anxiety (Partial $\eta^2 = 0.78$; $P < 0.0001$; $F(2,39) = 72.89$), perceived stress (Partial $\eta^2 = 0.78$; $P < 0.0001$; $F(2,39) = 71.01$) and pain coping strategies (Partial $\eta^2 = 0.85$; $P < 0.0001$; $F(2,39) = 113.14$).

In order to determine the groups in which there was a significant difference, Bonferroni post hoc test was used. Paired comparison using the post hoc test (Table 4) showed that the mean anxiety score in the ACT group was lower compared to the CBT and control groups at the end of the training ($P < 0.01$). The mean perceived stress score in the ACT group was lower compared to the CBT and control groups at the end of the training ($P < 0.01$). Moreover, the mean coping strategies score in the ACT group was lower compared to the CBT and control groups at the end of the training ($P < 0.01$). No significant difference was observed between the ACT group and CBT and control groups in terms of the scores of anxiety, perceived stress, and pain coping strategies ($P > 0.05$). Thus, ACT had a greater effect on the improvement of anxiety, perceived stress, and pain coping strategies compared to CBT ($P < 0.01$).

Discussion

This study was conducted to compare the effectiveness of CBT and ACT on anxiety, perceived stress, and pain coping strategies in patients with cancer. The findings indicated that CBT and ACT are effective on anxiety, perceived stress, and coping strategies in patients with cancer. The results of this study were consistent with the findings of Borji et al. (2017), which indicated that CBT is effective on the anxiety, depression, and stress of family caregivers of patients with cancer. Furthermore, this finding is consistent with the results of the study by Abad et al. (2016), which indicated that CBT is effective in decreasing stress and anxiety in patients with breast cancer.

To explain these findings, it can be said that the patient's assessment of the effect of cancer on his/her life progress and excessive tension and irritability resulted from negative thoughts are among the factors that cause anxiety and worry in the patients more than the disease itself.

Table 3. The results of analysis of covariance of anxiety, perceived stress, and pain coping strategies in the experimental and control groups

Variable	SS	df	MS	F	P-value	Eta	Observed power
Anxiety	112.64	2	56.32	72.89	0.0001	0.78	1.00
Perceived stress	82.35	2	41.17	71.01	0.0001	0.78	1.00
Pain coping strategies	3608.04	2	1804.02	113.14	0.0001	0.85	1.00

SS: Sum of squares; df: Degree of freedom; MS: Mean of squares

Table 4. Bonferroni post hoc test results

Dependent variable	Group	Group	MD	P-value
Anxiety	Acceptance and commitment	Cognitive-behavioral	-1.92	0.0001
		Control	-3.96	0.0001
	Cognitive-behavioral	Control	-2.04	0.0001
Perceived stress	Acceptance and commitment	Cognitive-behavioral	-1.51	0.0001
		Control	-3.38	0.0001
	Cognitive-behavioral	Control	-1.86	0.0001
Pain coping strategies	Acceptance and commitment	Cognitive-behavioral	9.58	0.0001
		Control	22.33	0.0001
	Cognitive-behavioral	Control	12.75	0.0001

MD: Mean difference

Certain beliefs about the disease lead to incompatible coping methods, and intensification of the physical-psychological symptoms and the resulting suffering and disability. CBT first allows patients to state their thoughts and ineffective beliefs and cognitive distortions freely and without fear, then, these thoughts, structural beliefs, and cognitive distortions are reviewed and corrected (Jennings, Flaxman, Egdell, Pestell, Whipday, Herbert, 2017).

According to Beck's cognitive therapy model, cognitive therapy is most effective when the therapist amends these structural assumptions in the patients and replaces these thought distortions with positive rational and non-extreme thoughts (Majeed & Sudak, 2017). Cognitive reconstruction, which is also known as logical empiricism, helps individuals use logical reasoning for practical testing of the content of anxious thoughts against the realities of life experiences to diagnose the flow of anxious thoughts and even to test them behaviorally (Borji et al., 2017).

In this way, cognitive training of the events affects the reaction to those events and will be a preliminary for changing cognitive activity. CBT has a great influence on generating or changing understanding and attitude in individuals. Given that followers of CBT believe that the existence of some common mental errors can confuse our interpretation and perception of reality and generate further inappropriate behaviors and moods, CBT can be effective in improving anxiety, which depends on their ability to clearly, correctly, and effectively transfer their thoughts, emotions, needs, and requests.

The results also indicated that after controlling the pretest, there was a significant difference between experimental and control groups in terms of perceived stress. In other words, CBT has been effective on the perceived stress of patients with cancer. The results of this study show congruence with the results of the study by Serid, Burger, and Segal-Anglechine, which indicated that cognitive-behavioral intervention is effective on perceived stress and moods of nurses (Borji et al., 2017).

To describe these findings, it can be said that CBT decreases the perceived stress of patients. Based on the cognitive-behavioral model, peoples' beliefs affect their feelings and behaviors. Understandings and attitudes of patients greatly affect their attitudes. Negative attitudes toward and understandings of controlling the disease improve perceived stress. The fundamental principle of the cognitive-behavioral model is the effect and continuous and mutual interaction between the understandings and beliefs of an individual regarding the disease (thought), emotions, behaviors, and relationships with others. The cognitive-behavioral approach increases individuals' awareness of irrational beliefs and documents. Furthermore, through performing the practices and assignments given in the training

sessions, wrong beliefs and documents are amended (Abad et al., 2016).

The results also indicated that after controlling the pretest, there was a significant difference between experimental and control groups in terms of coping strategy. In other words, CBT has been effective on the coping strategies of patients with cancer. The results of this study were in line with the results of the study by Majeed and Sudak (2017), which indicated that CBT is effective on chronic pain. Moreover, it was consistent with the study by Mozafari et al. (2020) that indicated that CBT is effective in the management of chronic pain in patients with breast cancer.

In addition, the results of the current study indicated that ACT is effective on the anxiety of patients with cancer. These results were consistent with the findings of Jennings et al. (2017) and Melo et al. (2015). To explain these findings, it can be stated that ACT is a treatment method which includes acceptance and transformational variables in such a way that the position of this treatment method against unchangeable problems is acceptance and against changeable problems and behaviors is a commitment to alignment with change (Karekla & Constantinou, 2010). Another key component in acceptance and commitment-based therapy is values. In ACT sessions, participants are asked to identify their values, specify their objectives towards those values in their life, and commit to themselves that live to realize these value-oriented objectives, and this value and objective clarification can lead to the determination of an individual route of life, and in turn, decrease their anxiety. Indeed, this part of the treatment helps patients find their motivation again for living a rich and valuable life, which is basically the objective of acceptance and commitment-based therapy. The results indicated that after controlling the pretest, there was a significant difference between the experimental and control group in terms of perceived stress. In other words, CBT was effective on the perceived stress of patients with cancer. The results of this study were in accordance with the results of the studies by Jennings et al. (2017) and Karekla and Constantinou (2010). In addition, these findings were in line with that of Pankowski, Adler, Andersson, Lindefors, and Svanborg (2017), which reported that CBT is effective on psychological flexibility, The findings of the present study were also in line with that of Mohabbat-Bahar, Maleki-Rizi, Akbari, and Moradi-Joo (2015); they found that ACT is effective on anxiety and depression in patients with breast cancer. To explain these findings, it can be said that stress and disability (imaginary or real) in facing a threat is understandable. Cognitive stress emphasizes the perception and organism assessment of probable damage from confronting motivating environmental experiences. When people assess the demands of their surrounding environment and consider them to be beyond their total contrastive resources, they will experience stress, and this will consider their desirable physical, mental, emotional, or spiritual conditions as threatening (Sklenarova et al., 2015).

Of the limitations of this study the following items can be noted. The study results are limited to patients with leukemia. This study was conducted only on patients with leukemia in Isfahan, and thus, generalization of results to other areas and cities should be done with caution. It is recommended that this study be conducted in other cities and their results be compared, and this study is followed after group training as individual counseling.

Conclusion

It can be concluded that CBT and ACT are effective on anxiety, perceived stress, and pain coping strategies and can be used for patients with cancer.

Conflict of Interests

Authors have no conflict of interests.

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Psychometric Properties of the Persian Version of the Chronic Pain Acceptance Questionnaire in Patients with Chronic Pain in Isfahan, Tehran, and Yazd, Iran

Amrollah Ebrahimi[1], Hamid Afshar-Zanjani[2], Farzad Goli[3], Hamid Reza Rohafza[4], Hamid Nasiri Dehsorkh[5]

[1] Associate Professor, Department of Health Psychology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran
[2] Professor, Department of Psychiatry, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran
[3] Professor, Faculty Instructor, Energy Medicine University, California, USA AND Danesh-e Tandorosti Institute, Isfahan, Iran
[4] Cardiovascular Research Institute, Isfahan University of Medical Sciences, Isfahan, Iran
[5] Psychosomatic Research Center, Isfahan University of Medical Sciences, Isfahan, Iran

Corresponding Author: Amrollah Ebrahimi; ***PhD in Psychology, Associate Professor, Department of Health Psychology, Isfahan University of Medical Sciences, Isfahan, Iran***
Email: a_ebrahimi@med.mui.ac.ir

Abstract

Quantitative Study

Background: Acceptance and commitment therapy (ACT) is one of the evidence-based therapies for chronic pain. One of the measuring tools used in this approach is the Chronic Pain Acceptance Questionnaire (CPAQ). The aim of the present study was to determine the psychometric properties of the CPAQ in a sample of patients with chronic pain in Isfahan, Tehran, and Yazd, Iran.

Methods: This was a cross-sectional, methodological study. The statistical population included all Iranian patients with chronic pain. The sample consisted of 228 patients with chronic pain; the patients were simultaneously selected from medical centers affiliated to Isfahan University of Medical Sciences, Baqiyatallah Hospital in Tehran, and the Medical Clinics in Yazd. To determine the validity of the CPAQ, the Pain Disability Index (PDI), Pain Catastrophizing Scale (PCS), Pain Anxiety Syndrome Scale (PASS-20), and Satisfaction with Life Scale (SWLS) were used. SPSS software and correlation analysis methods, confirmatory factor analysis, and Cronbach's alpha were used.

Results: The reliability of the CPAQ was determined to be 0.79 using Cronbach's alpha method, and its validity was confirmed through inverse correlation with the scores of the PDI (-0.319), PCS (-0.228), PASS (-0.355), and SWLS (0.19); all correlation coefficients were significant ($P < 0.01$).

Conclusion: The validity and reliability of the CPAQ in Iranian patients with chronic pain have been confirmed. Thus, it can be used as a research tool for the measurement of acceptance index and commitment therapy outcome in Iranian patients.

Keywords: Chronic pain; Psychometric properties; Chronic Pain Acceptance Questionnaire; Validity; Reliability

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Introduction

The International Association for the Study of Pain (IASP) defines pain as "an unpleasant sensory and psychological experience that is associated with possible or actual tissue damage or occurs during periods of such damages" (Caraceni & Portenoy, 1999). Chronic pain syndrome (CPS) is a common problem that poses grave challenges for therapists due to its complex nature, ambiguous etiology, and poor response to treatment (Treede et al., 2015). Chronic pain is a very common problem, and it is estimated that 20% of people in the world suffer from it; some studies have reported that 15 to 20% of referrals to physicians are patients with chronic pain (Gureje, Von Korff, Kola, Demyttenaere, Posada-Villa, & Iwata, 2008). The prevalence of chronic pain in Iran is estimated to range from 14% to 21% (Ghaffari, Alipour, Jensen, Farshad, & Vingard, 2006). One of the reasons that chronic pain is one of the most problematic issues of the present age is its comorbidity with psychiatric disorders. The most common psychiatric disorders associated with chronic pain are depression (10 to 100% in these patients), anxiety (with a higher prevalence than that of depression), sleep disorders, and substance abuse (a much higher prevalence than that in the general population) (Mohammadzadeh et al., 2015).

The annual cost of pain management is $ 60 billion, which is more than the annual cost of cardiovascular diseases (CVDs). It is also the cause of the loss of 700 million working days. Furthermore, chronic pain is a disorder that affects behavior and lifestyle (Akmaz, Uyar, Yıldırım, & Korhan, 2018) and can be associated with extensive physical and emotional suffering and occupational limitations (Breivik, Collett, Ventafridda, Cohen, & Gallacher, 2006). Cross-sectional and prospective studies show that these consequences can be improved with a degree of pain acceptance associated with better performance (Mason, Mathias, & Skevington, 2008; McCracken, 1998; McCracken & Eccleston, 2003; McCracken & Eccleston, 2005). Significant improvements have been made regarding the physical, psychological, and quality of life (QOL) outcomes of these patients after the implementation of acceptance-based programs in an interdisciplinary setting for pain management (McCracken, MacKichan, & Eccleston, 2007; McCracken, Vowles, & Eccleston, 2005; Vowles, McCracken, & Eccleston, 2007). Therefore, psychological therapies for chronic pain have recently obtained a special position, and acceptance and commitment therapy (ACT) is the most novel one (McCracken, Vowles, & Eccleston, 2004; Anvari, Ebrahimi, Neshatdoust, Afshar, & Abedi, 2014).

The 4 most common questionnaires for measuring pain acceptance are the Chronic Pain Acceptance Questionnaire (CPAQ), Illness Cognitions Questionnaire (ICQ), Pain Solutions Questionnaire (PaSol), and Acceptance of Illness Scale (AIS) (Reneman, Dijkstra, Geertzen, & Dijkstra, 2010). McCracken (1998), with 160 chronic pain patients referred for a pain management treatment, reported the Cronbach's alpha without factor analysis of the CPAQ to be equal to 0.84 and approved its construct validity through negative correlation with pain intensity, pain-related anxiety, avoidance, depression, and physical and psychosocial disability ($-0.66 < r < -0.28$).

Reneman et al. (2010), in a review study, compared the psychometric features of these 4 questionnaires in 9 dimensions (including construct and criterion validity, and internal reliability) and concluded that the CPAQ is the most appropriate tool for this purpose. Moreover, the CPAQ is the only questionnaire developed in the theoretical framework of pain acceptance. The CPAQ has been translated and its psychometric features have been determined in different languages, including German (Nilges,

Köster, & Schmidt, 2007), Chinese (Ning, Ming, Mae, & Ping, 2008), Swedish (Wicksell, Olsson, & Melin, 2009; Rovner, Årestedt, Gerdle, Börsbo, & McCracken, 2014), Italian (Bernini, Pennato, Cosci, & Berrocal, 2010; Monticone, Ferrante, Rocca, Nava, Parini, & Cerri, 2013), Spanish (Rodero, García-Campayo, Casanueva, del Hoyo, Serrano-Blanco, & Luciano, 2010), Korean (Cho, Heiby, McCracken, Moon, & Lee, 2012), Turkish (Akmaz et al., 2018), and Finnish (Ojala, Piirainen, Sipilä, Suutama, & Häkkinen, 2013). The aim of the present study was to investigate the psychometric properties of the Persian version of the CPAQ in a sample of patients with chronic pain in Tehran, Isfahan, and Yazd, Iran.

Methods

This was a cross-sectional, methodological study. The study participants included 228 patients with chronic pain; they were simultaneously selected through convenience sampling method from multiple centers in Baqiyatallah Hospital in Tehran, Educational and Medical Centers affiliated to Isfahan University of Medical Sciences, and the Neurology Clinic in Yazd in 2017. The study inclusion criteria were diagnosis of chronic pain based on the criteria of the IASP, age of 20-65 years, duration of pain of at least 6 months, non-cancerous pain, normal intelligence, and literacy to understand the questionnaire items, and willingness to participate in the study. The study exclusion criteria included serious neurological problems, cognitive and intelligence problems, and serious psychiatric disorders such as psychotic disorder.

Demographic and pain details questionnaire: This questionnaire includes items regarding age, sex, education, and type, duration, and location of pain.

Chronic Pain Acceptance Questionnaire: The CPAQ was developed by McCracken et al. (2004). It is widely used in researches related to chronic pain. The CPAQ includes 20 items in the 2 subscales of activity engagement (daily activities despite the pain) and pain willingness (relative lack of effort to avoid or control pain). The items are scored on a 7-point scale. The total score of the CPAQ ranges from 0 to 120, and higher scores indicate more pain acceptance. Psychometric studies in different cultures have reported the validity and reliability of the CPAQ to various degrees. The reliability (Cronbach's alpha) of the CPAQ in German, Chinese, Italian, Spanish, Korean, and Finnish samples was reported as equal to 0.84, 0.92, 0.91, 0.83, 0.80, and 0. 88, respectively. (Nilges et al., 2007; Bernini et al., 2010; Monticone et al., 2013; Rodero et al., 2010; Cho et al., 2012; Ojala et al., 2013).

Pain Anxiety Symptoms Scale: Pain-related fear and avoidance behaviors are assessed using the Pain Anxiety Symptoms Scale (PASS-20). The PASS consists of 20 items, which assess the frequency of symptoms on a 6-point scale. The total score of the PASS-20 ranges from 0 to 100, and higher scores indicate more avoidance and anxiety. The PASS-20 has an internal reliability of 0.81 and convergent and divergent validity of 0.95 (McCracken & Dhingra, 2002).

Pain Catastrophizing Scale: The Pain Catastrophizing Scale (PCS) is a 13-item scale that measures pain-related catastrophizing in the 3 subscales of helplessness, magnification, and rumination. The range of the total score of the PSC is 0-52. A high validity and reliability have been reported for this scale (Sullivan, Bishop, & Pivik, 1995).

Pain Disability Index: The Pain Disability Index (PDI) is a 7-item self-report scale that measures the extent to which chronic pain affects physical and mental functioning in 7 important aspects of life (family responsibility, recreation, social and occupational activity, sexual behavior, self-care, and life support practices). The items are scored on a scale ranging from 0 (full capacity) to 10 (full disability). The range of

the total score of this questionnaire is 0-70, and higher scores indicate more disability. A high predictive and structural validity have been reported for this scale, and its intra-class correlation was reported as equal to 0.76 (Soer et al., 2013).

Satisfaction with Life Scale: The Satisfaction with Life Scale (SWLS) was developed by Diener et al. and includes 5 statements that measure the cognitive component of well-being. The internal consistency of this scale using Cronbach's alpha and test-retest methods was reported at 0.83 and 0.69, respectively. Its validity was approved through convergent and divergent validity based on a positive correlation with the Oxford Happiness Inventory (OHI) and a negative correlation with the Beck Depression Inventory (BDI) (Pavot, Diener, Colvin, & Sandvik, 1991).

Implementation procedure: First, the questionnaires were translated by 2 translators simultaneously (forward translation). Then, the revised version was translated into the original language by a bilingual translator. The final version was reviewed, adapted, and finalized in the meetings of the research team. After preparing the final questionnaires, 228 participants who had referred to clinics in Isfahan, Baqiyatallah Hospital (Tehran), and Yazd due to chronic pain were selected based on the study inclusion and exclusion criteria. Questionnaires were completed by participants in appropriate psychological conditions.

Data analysis: Data were analyzed using psychometric statistical methods in SPSS software (version 20, IBM Corp., Armonk, NY, USA). To evaluate the questionnaire's reliability, the internal consistency test (Cronbach's alpha) and intraclass correlation coefficient (ICC) were used. Pearson's correlation coefficient was used to determine convergent and divergent validity, and factor analysis was performed to determine the construct validity and its factors structure.

Results

The participants included 288 patients with chronic pain. Their mean age was 45 ± 16.07 years; a majority of the participants were women (71.9%), married (91.7%), and had a diploma and lower education level (87%). The most common pain type was various pain (23.4%), low back pain (17.5%) joint and musculoskeletal (21.5%), and internal pain (18.8%). The demographic characteristics of the participants are presented in table 1.

Reliability: The results are presented in table 2. Findings show that the CPAQ and both of its subscales have good reliability, but the total score of the CPAQ showed a higher internal consistency with Cronbach's alpha of 0.79. The ICC of the CPAQ (ICC = 0.694) was higher than its subscales. However, the total coefficients of the questionnaire and its subscales were significant ($P < 0.01$).

Table 1. Demographic characteristics of participants and type and location of pain

Variable	Value
Age (Mean ± SD)	45 ± 16.07
Gender: female [n (%)]	167 (71.9)
Married [n (%)]	209 (91.7)
Illiterate and elementary education	17 (7.5)
Under diploma and diploma	200 (87)
Bachelor's degree or higher	11 (4.8)
Headache	27 (11.8)
Low back pain	40 (17.5)
Joint and musculoskeletal pain	49 (21.5)
Pain in the hands and shoulders	17 (7)
Internal pain	43 (18.8)
Various pains	53 (23.4)

Table 2. Cronbach's alpha coefficient and intraclass correlation coefficient of the Persian version of the Chronic Pain Acceptance Questionnaire

Subscales	Cronbach's alpha	ICC (CI)*
CPAQ	0.79	0.694 (0.663-0.748)
Pain Willingness	0.73	0.574 (0.485-0.748)
Activity Engagement	0.71	0.624 (0.546-0.693)

*ICC: Intraclass correlation coefficient; CI: Confidence interval; CPAQ: Chronic Pain Acceptance Questionnaire

Validity: To determine the validity of the Persian version of the CPAQ in a sample of Iranian patients with chronic pain, the simultaneous convergent and divergent validity was calculated using the correlation of the CPAQ with some questionnaires that were theoretically convergent or divergent. Its construct validity was also determined through factor analysis.

As seen in table 3, the total CPAQ score and the pain willingness subscale scores have a significant correlation with life satisfaction (0.19 and 0.17, respectively) ($P < 0.01$). Moreover, they have a significant inverse correlation with scales that theoretically contradict acceptance, such as pain anxiety, pain catastrophizing, pain disability, helplessness, pain magnification, and rumination ($P < 0.01$). Although the subscales of activity involvement did not correlate with life satisfaction, they showed a significant inverse correlation with other psychopathological scales of pain anxiety, pain magnification, and rumination (-0.18, 0.18, and 0.14, respectively) ($P < 0.05$), revealing its divergent construct validity.

Factor structure: To determine the construct validity and factor structure of the CPAQ in the Iranian culture, the factor analysis was used with confirmatory and oblimin rotation methods. Sample adequacy indices (KMO = 0.751) were calculated, which confirmed the sample size adequacy, and Bartlett's test of sphericity revealed homogeneity of variance (chi-square test = 1124.672; $P < 0.0001$). The minimum factor load was considered to be 0.30, so items with a value lower than this value on the factors were removed. The results presented in table 4 show that 10 items are loaded on the first factor, and 8 items are loaded on factor 2, and 2 items (numbers 3 and 17) are not loaded on any of the factors.

Discussion

The aim of the present study was to determine the psychometric features of the Persian version of the CPAQ in a sample of patients with chronic pain.

Table 3. Correlation coefficient of the Persian version of the Chronic Pain Acceptance Questionnaire score with criterion questionnaires (Part I)

Questionnaires	Life satisfaction	Pain Anxiety Symptoms Scale	Pain catastrophizing	Disabling pain
CPAQ	0.19**	-0.36**	-0.28**	-0.32**
Willingness subscale	0.17**	-0.21**	-0.19**	-0.35**
Activity subscale	0.025	-0.18**	-0.012	-0.05
Questionnaires	**Helplessness**	**Magnification of pain**	**Ruminant with pain**	**Pain intensity**
CPAQ	-0.22**	-0.27**	-0.29**	0.29
Willingness subscale	-0.19**	-0.13	-0.18**	0.06
Activity subscale	-0.03	-0.18*	-0.14*	0.05

CPAQ: Chronic Pain Acceptance Questionnaire
* Significant at the level of 0.95, ** Significant at the level of 0.95

Table 4. Factor analysis of the Persian version of the Chronic Pain Acceptance Questionnaire

Items	Factor 1	Factor 2
9. I lead a full life even though I have chronic pain.	0.807	
8. There are many activities I do when I feel pain	0.782	
13. Keeping my pain level under control takes priority whenever I am doing something.	0.707	
4. My life is going well, even though I have chronic pain.	0.699	
12. Despite the pain, I am now sticking to a certain course in my life.	0.675	
20. I have to struggle to do things when I have pain.	0.620	
6. Although things have changed, I am living a normal life despite my chronic pain.	0.579	
1. I am getting on with the business of living no matter what my level of pain is.	0.373	
10. Controlling my pain is less important than any other goals in my life.	0.322	
5. It is not necessary for me to control my pain in order to handle my life well.	0.303	
3. It is OK to experience pain.	-	-
14. Before I can make any serious plans, I have to get my pain under control.		0.764
11. My thoughts and feelings about pain must change before I can take important steps in my life.		0.619
7. I need to concentrate on eliminating my pain.		0.606
16. I will have better control over my life if I can control my negative thoughts about pain.		0.588
15. When my pain increases, I can still take care of my responsibilities.		0.518
4. I would gladly sacrifice important things in my life to better control this pain.		0.517
19. It is a great relief to realize that I do not have to change my pain to get on with life.		0.422
18. My worries and fears about what pain will do to me are real.		0.407
17. I avoid putting myself in situations in which my pain might increase.		-

The reliability of the CPAQ and the pain willingness and activity engagement subscales was determined through internal consistency using Cronbach's alpha to be 0.79, 0.73, and 0.71, respectively, and their ICC was 0.69, 0.57, and 0.62, respectively. According to our findings, Cronbach's alpha coefficient of the Persian version of the CPAQ ($\alpha = 0.88$) is similar to that of the Italian version ($\alpha = 0.86$) (Bernini et al., 2010; Monticone et al., 2013), and the Turkish version ($\alpha = 0.94$) and its pain willingness ($\alpha = 0.88$) and activity engagement subscales ($\alpha = 0.91$), the Swedish version ($\alpha = 0.80$) and its pain willingness ($\alpha = 0.83$) and activity engagement subscales ($\alpha = 0.73$) (Wicksell et al., 2009), and the Finnish version ($\alpha = 0.86$) (Ojala et al., 2013). These results are consistent with the meta-analysis findings of psychometric studies of the CPAQ (Reneman et al., 2010), which reported its reliability as 0.62-0.85. The findings of the present study are within this range. Therefore, these findings indicate the optimal reliability of this questionnaire in the Iranian patient population.

The convergent and divergent validity of the CPAQ was assessed through its correlation with the scales commonly used in various pain studies. The results showed that the total score of the CPAQ had a significant direct correlation with the SWLS. Moreover, it had a significant inverse correlation with the PSS-20, PCS, and the subscales of pain disability, helplessness, pain magnification, and rumination with pain. These findings confirm the validity of the questionnaire in Iranian patients with chronic pain. These findings support the psychometric results of the Arabic version of the CPAQ (Huijer, Fares, & French, 2017) that established convergent validity through the correlation of the CPAQ scores with QOL, anxiety, and depression scales. These findings are also consistent with the psychometric results of the Italian version reported by Monticone et al. (2013); they reported a divergent

validity through correlation with the PCS, and Hospital Anxiety and Depression Scale (HADS). Moreover, it supports the convergent validity of the Swedish version (Wicksell et al., 2009) through correlation with the Quality of Life Scale (QOLS), anxiety and depression questionnaire, and fear of pain scale. In addition, the findings of the present study are consistent with the results of psychometric studies of the Korean version (Cho et al., 2012) and the Finnish version (Ojala et al., 2013) that confirmed the convergent and divergent validity of the CPAQ through its correlation with QOLS, and Pain Anxiety Symptoms Scale, pain intensity, and BDI.

The findings of this study support this questionnaire and the theory of ACT, emphasizing that pain acceptance, rather than trying to control and avoid pain, can lead to more flexibility, and thus, psychological adjustment (Mason et al., 2008; McCracken, 1998; McCracken & Eccleston, 2003; McCracken et al., 2005).

One of the findings in this study was the lack of a significant correlation between pain acceptance and pain intensity, which is not consistent with the findings of previous studies (Rovner et al., 2014; Cho et al., 2012). Seemingly, accepting pain is theoretically associated with psychological resilience, which leads to value-based action and activity despite the pain. This finding supports the results of clinical trials (Anvari et al., 2014) that showed the effectiveness of ACT in improving life satisfaction, and reducing pain anxiety, pain catastrophizing, and pain disability but did not have effect on pain intensity.

Another goal of this study was to determine the factor structure of the CPAQ and determine its construct validity. The results of the factor analysis of the CPAQ items (Table 4) showed that the best CPAQ factor structure in the context of the Iranian cultural is 2-factor structure. Factor load of 0.32-0.80 on 2 factors indicates the construct validity of the Persian version of the CPAQ. CPAQ and its 2 subscales of activity engagement and pain willingness have the desired validity in the Iranian population. These findings are consistent with previous studies on the Turkish (Akmaz et al., 2018), Korean (Cho et al., 2012), and Italian (Monticone et al., 2013) versions, which found the 2-factor structure to be the best structure.

The important difference between the factor structure of the questionnaire in the present study and previous studies is that items number 3 and 17 had no significant load on any factors and needed to be revised and corrected. Furthermore, items number 15 and 19, which in the original version were loaded on pain willingness, are loaded on activity engagement. In contrast, items number 13 and 20 are loaded on the pain willingness subscale instead of loading on the activity engagement subscale. This difference in factor structure may indicate a difference in the social perception of pain and activity between the Iranian society and Western societies.

Conclusion

The findings indicate that the Persian version of the CPAQ has desirable psychometric features and a high reliability and validity. This questionnaire, as a valid tool for research related to pain, can also be considered as a valid instrument in clinical trials to measure changes based on third-wave behavioral therapies.

Conflict of Interests

Authors have no conflict of interests.

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