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# Investigating the effect of social support, social capital, and coping on the positive state of mind of Iranian older people with human immunodeficiency virus/acquired immunodeficiency syndrome

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## Abstract:

**BACKGROUND:** Social resources help to adapt to stress and might positively affect the well-being of individuals with severe conditions like human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS). The present study investigates the effect of social support, social capital, and coping in a positive state of mind of Iranian older people with HIV/AIDS.

**MATERIALS AND METHODS:** This cross-sectional study was conducted on 160 older people with HIV referred to AIDS clinics in Tehran in 2019. Samples were randomly selected from patients aged 50 years and older. Data were collected using a questionnaire, a positive state of mind, social capital, coping, social support, and a checklist of demographical variables. Data analysis was performed using SPSS software version 21.

**RESULTS:** A significant positive correlation was found between social support, social capital, coping, education, and a positive state of mind. A significant negative correlation was also found between age, several chronic diseases of the patient, and a positive state of mind. The linear regression results showed that social support, social capital, coping, and education improved the positive state of mind.

**CONCLUSIONS:** Based on our findings, we believe that social and psychological interventions effectively enhance patients' positive state of mind with HIV and ultimately, improve their quality of life.

## Keywords:

Aged, coping, human immunodeficiency virus/acquired immunodeficiency syndrome, Iran, social capital, social support, the positive state of mind

## Introduction

Human immunodeficiency virus/acquired immunodeficiency syndrome (HIV/AIDS) is one of the most critical health concerns globally.<sup>[1-3]</sup> According to reliable estimates in 2014, the population of HIV/AIDS patients in Iran

in common was 28,863 people.<sup>[4,5]</sup> Due to medical and health advances, many people with AIDS have entered old age.<sup>[6,7]</sup> This period is associated with a gradual decrease in body function; therefore, due to various physical, emotional-psychological, and

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social cares and needs, the older people are popularly known as a vulnerable group.<sup>[8,9]</sup> Iran's population pyramid is gradually changing from youth and middle age to old age. This situation will be naturally accompanied by an increase in the considerable number of older people with various chronic diseases, including HIV/AIDS.

HIV/AIDS naturally creates many social problems and negative thinking. It also has many direct consequences for the physical, mental, and social health of affected people and their families. Therefore, it increases the risk of adverse events in their lives and chronic medical conditions.<sup>[2,10]</sup> People living with HIV are associated with many challenges such as social pressures, stigma and discrimination, depression, stress, loneliness, and early loss of the job, family, health, and physical appearance.<sup>[11-15]</sup> These people hide their illness because of the fear of social stigma and being rejected by family and society.<sup>[11]</sup>

On the other hand, people who reveal their disease status and seek treatment become more dependent on individuals' support due to memory problems (drug side effects).<sup>[16]</sup> Excessive levels of stress and lack of social support are more or less present in chronic diseases. However, these factors possess significant importance in people living with HIV. It may lead to the disease's progression from HIV (without clinical symptoms) to AIDS (with clinical signs).<sup>[16-19]</sup>

People with HIV are naturally exposed to many stresses and often receive lower levels of practical and emotional support from family and community. For them, this situation can be associated with risky activities like high-risk sexual behaviors and drug use.<sup>[20-22]</sup> On the other hand, studies show the perception of adequate social support can have a beneficial effect on stressful situations and even increase these patients' life expectancy.<sup>[20]</sup>

The positive role of social support on people's health has been investigated in several studies. This beneficial effect can generally help improve the quality of life and reduce anxiety and depression of patients with AIDS.<sup>[12,14,23]</sup> The psychological and social support of HIV/AIDS patients is also extremely effective in adapting to the disease.<sup>[24]</sup> However, in some studies, older people with HIV/AIDS did not hope to receive emotional or financial backing from their relatives, which resulted in a lack of support, low quality of life, and poor physical and psychological health.<sup>[24]</sup>

Besides, the positive association between emotional and psychological needs and the potential risk of HIV-developing behaviors can typically show the

paramount importance of social support (mediating or moderating high-risk demands and actions), especially for men. Because men report fewer psychological needs than women and choose different coping strategies, such as drug and alcohol abuse or high-risk behaviors, they also have less access to supportive and therapeutic resources.<sup>[2]</sup> Thus, social support for people living with HIV is not only important from an individual point of view but also can be useful in ensuring public health and controlling the disease, especially among males, by reducing high-risk behaviors.<sup>[2,25,26]</sup> On the other hand, social interaction with people living with AIDS without stigma and discrimination can increase the proper identification of hidden patients and control HIV.<sup>[27]</sup> Early diagnosis and in-time therapy could undoubtedly help to properly manage the disease and result in better coping and quality of life in patients.<sup>[28]</sup>

Another factor associated with a positive state of mind is social capital. People promote their abilities through social values, norms, and connections (empathy and belonging) that exist in social interactions, and in addition to controlling their lives, enjoy the social support of their communication network.<sup>[28,29]</sup>

As a reliable source of support, social capital can meaningfully improve people's mental health with chronic illnesses and increase their ability to cope adequately with their disease and discomfort. Studies have shown social capital is the social determinants of public health, especially among older people. The confidence that lies in social capital is the strongest predictor of public mental health.<sup>[30]</sup>

There is a considerable body of research in coping with stress and disease, most related to HIV/AIDS. In this regard, some coping mechanisms include acceptance of illness, humor, focus on tasks, and better response to stress. There is evidence that coping techniques can be helpful during acute or daily life stress.<sup>[28]</sup> According to the theory of Lazarus and Folkman, coping represent a mechanism by which stress has less effect on health, well-being, and behavior; in other words, people utilize it to deal with stress.<sup>[31]</sup>

The positive state of mind refers to focused attention, productivity, care responsibility, relaxation, sensory pleasure, and sharing, and are generally inversely related to adverse psychological conditions such as stress, depression, anger, fatigue, confusion, and anxiety.<sup>[32]</sup> There is evidence to suggest that a positive state of mind is associated with healthier living, lower mortality, and longer life expectancy.<sup>[33]</sup>

The positive state of mind seems to be associated with a reduction in risky behaviors and an increase in treatment

adherence.<sup>[34]</sup> Furthermore, an increase in social capital and social support, by affecting the positive state of mind, enhances the ability to adapt to HIV/AIDS. This study hypothesizes that a positive state of mind and mood can be affected by relationships and interactions, social support, and how to deal with illness, so it is essential to know the sources of support and protection in these people and their impact on their health. This study aimed to investigate the effect of social support, social capital, and cope in a positive state of mind of Iranian older people with HIV/AIDS.

## Materials and Methods

This descriptive–analytical study was conducted in 2019. The study population consisted of people aged 50 and over living with HIV/AIDS in Tehran. The sample size was 160 people, which to select them, first a list of counseling centers affiliated to Tehran’s medical universities, Iran was prepared. Then four centers were randomly selected from each university. The code of ethics (No. 97-3-62-13001) and necessary approvals such as data collection permission were obtained from Iran University of Medical. All people aged 50 years and older with HIV/AIDS referred to these centers were the samples of this study. They were selected by the purposeful method, and informed consent was obtained from them before completing the questionnaire.

Data were collected using an anonymous self-reporting questionnaire, which included three sections. Demographic variables (age, place of birth, gender, marital status, level of education, income level, and employment status), HIV/AIDS-related variables (disease stage, prison history, alcohol consumption, unprotected sex), and the variables of standard social support, social capital, positive state of mind, and coping method.

## Positive State of Mind

The positive state of mind as a dependent variable of the model was carefully measured by the self-reporting positive status of mind questionnaire. Six questions were handled to adequately assess an individual’s satisfactory states, including those experienced in the past 7 days.<sup>[26]</sup> The questions in common were in Likert’ scales with a scoring range of 0–3 and a total score of 18, so that a higher rating sufficiently indicated a more responsive state of mind. The content validity and reliability of this questionnaire have been measured and approved in various studies.<sup>[31,32,34,35]</sup>

## Social Support

Social support was assessed with a modified version of the medical outcomes study-social support scale.<sup>[34-36]</sup>

This questionnaire measures the level of social support received by subjects by 19 items on a 5-point Likert scale. The validity and reliability of this questionnaire have been confirmed in other studies.<sup>[37,38]</sup>

## Coping

A 25-question form in four dimensions was employed to measure the coping. For example, seeking support with eight items (find someone to take care of me, seek help from family members and friends, etc.). Acceptance with five parts (I accept the facts, I believe this is my fate, etc.), disengagement/avoidance/escape with nine elements (I pretend that nothing happened, I try hard to forget about it). Finally, direct action with three items (I watch whether my symptoms become worse, etc.). The participants were asked to indicate how often they adopted a strategy in the past 3 months: 1 = Never, 2 = Occasionally, 3 = Sometimes, 4 = often, 5 = Always. Coping measure<sup>[36,39]</sup> and COPE.<sup>[35,36,40]</sup>

## Social capital

A 20-item valid and reliable questionnaire of social capital was used to assess social capital.<sup>[38-41]</sup> This questionnaire included five dimensions. Three of them were related to intra-group social capital (empathy and belonging with items 1–6, trust, related to elements 16–18, and collaboration and participation with questions 19–20). The other two dimensions were related to extra-group social capital (having a relationship with people with diverse interests, related to items 7–11 and having a relationship with people with varying lifestyles with questions 12–15). The scores were on a 5-point Likert scale ranging from 1 to 5 and the total score of 100 so that higher scores indicated a more accountable social capital.

Criteria for entering the study included being HIV-positive, being over 50 years of age, having the ability to answer questions, and providing consent to participate in the study. The exclusion criteria also had mental disorders (including schizophrenia, depression, obsessive–compulsive disorder) and being unwilling to continue with the investigation.

The means, standard deviations, and percentages summarizing the distribution of demographic and other variables are shown in Table 1. Pearson’s correlations (2-tailed) were used to examine the relationships between demographic and independent and dependent variables (positive states of mind) [Table 2]. To assess potential control variables to be entered the regression and between predictor variables to test for multicollinearity. The dependent variable was the total score on the PSOMS, and the independent variables were social support, coping social capital, age, and education. Multiple linear regression analysis using the backward selection method was performed to estimate the effects

of variables on the positive state of mind by adjusting confounders Table 3. To analyze the data received by using the Statistics Software SPSS (Version-23 Inc., Chicago, IL, USA), and applied the required analysis at the significance level of 0.05 ( $P < 0.05$ ).

### Ethical consideration

The authors maintained all the protocol before performing all the procedures engaged in this study involving human participants under the ethical standards of the institutional research committee and with the 1964 Helsinki Declaration and its later amendments or comparable ethical standards.

## Results

The study's sample consisted of 160 participants over the age of 50 years with an average age of 65.82 ( $\pm 6.69$ ),

**Table 1: Characteristics of the participants**

| Variable              | Dimension            | n (%)      |
|-----------------------|----------------------|------------|
| Gender                | Female               | 55 (34.4)  |
|                       | Male                 | 105 (65.6) |
| Education             | Illiterate           | 2 (1.3)    |
|                       | Under diploma        | 85 (53.3)  |
|                       | Diploma              | 47 (29.6)  |
|                       | University education | 25 (15.8)  |
| Marital status        | Married              | 96 (60)    |
|                       | Widow                | 18 (11.3)  |
|                       | Divorced             | 34 (21.3)  |
| Place of birth        | City                 | 144 (90.4) |
|                       | rural                | 15 (9.6)   |
| Number of children    | None                 | 48 (38.4)  |
|                       | 1-2                  | 56 (44.8)  |
|                       | Three or more        | 21 (16.8)  |
| Alcohol consumption   | Yes                  | 102 (64.2) |
|                       | No                   | 57 (35.8)  |
| Drug use              | Yes                  | 32 (20.3)  |
|                       | No                   | 126 (79.7) |
| Smoking               | Yeas                 | 98 (62.2)  |
|                       | No                   | 60 (37.8)  |
| Duration of infection | Less than 3 years    | 34 (21.3)  |
|                       | 4-6 years            | 33 (33.1)  |
|                       | 7-9 years            | 39 (24.4)  |
|                       | Over 10 years        | 34 (21.2)  |

from whom 55 (34.4%) were women, and 105 (65.6) were men. Furthermore, 54.6% of the participants were illiterate or had under-diploma education. Moreover, 21.3% of the samples were divorced, and 20 were born in the city (90.4) and had almost one or two children (44.8). Among the participants, 20.3%, 64.2%, and 62.2% were using drugs, alcohol, and cigarettes. Given that the samples in the study were HIV positive people, the findings showed that the duration of infection in 21.2% of the samples was over 10 years, and for 21.3% of them, this time was 3 years or less [Table 1].

Based on the results, the positive state of mind's mean score among the studied samples was  $3.73 \pm 14.39$ . Given the range of positive state of mind score (0–18), the positive state of mind seemed to be in good shape. Results of analyzes showed a positive and significant correlation between social support ( $r = 0.410$ ,  $P < 0.001$ ), social capital ( $r = 0.242$ ,  $P < 0.002$ ), coping ( $r = 0.333$ ,  $P < 0.001$ ), education ( $r = 0.374$ ,  $P < 0.001$ ), and positive state of mind. However, between age ( $r = -0.296$ ,  $P < 0.001$ ) number of chronic diseases of the patient ( $r = -0.164$ ,  $P < 0.001$ ) and positive state of mind, there was a negative and significant correlation [Table 2].

Multivariate linear regression was used to investigate the role of social support and other independent variables as the predictor of mental state in older patients. The results of this study showed that social support, social capital, coping, and education improved the positive state of mind. Simultaneously, the age and number of chronic diseases reduced the positive state of mind [Table 3]. Furthermore, the rate of model determination coefficient showed that studied variables explained about 34% of the changes in a positive state of min ( $R^2 = 0.34$ ,  $F [14.17]$ ,  $P < 0.05$ ).

## Discussion

The present study aimed to increase the understanding of social characteristics and dimensions of HIV-positive older people that can affect their positive state of mind. According to the current study results, social support, social capital, age, education, coping, and chronic

**Table 2: Correlation coefficients for a positive state of mind and independent variables (Social support, Social capital, Coping, Age, Chronic disease)**

| Variable                   | The positive state of mind |       | Mean $\pm$ SD     | Range of score |
|----------------------------|----------------------------|-------|-------------------|----------------|
|                            | $r^*$                      | $P$   | $P$               |                |
| The positive state of mind | -                          | -     | 14.39 $\pm$ 3.73  | 1-18           |
| Social support             | 0.410 <sup>a</sup>         | 0.001 | 60.72 $\pm$ 19.61 | 19-95          |
| Social capital             | 0.242 <sup>a</sup>         | 0.002 | 77.31 $\pm$ 15.74 | 31-99          |
| Coping                     | 0.333 <sup>a</sup>         | 0.001 | 72.52 $\pm$ 7.88  | 55-96          |
| Chronic disease            | -0.164 <sup>a</sup>        | 0.021 | 3.14 $\pm$ 2.15   | 0-7            |
| Age                        | -0.296 <sup>a</sup>        | 0.001 | 65.82 $\pm$ 6.69  | 55-80          |
| Education                  | 0.374 <sup>b</sup>         | 0.001 | -                 | 1-8            |

<sup>a</sup>Pearson correlation, <sup>b</sup>Spearman's rho, <sup>\*</sup>Correlation coefficients. SD: Standard deviation

**Table 3: Multivariate linear regression analysis examining factors associated with a positive state of mind**

| Variables       | Standardized coefficients |       | T      | P     |
|-----------------|---------------------------|-------|--------|-------|
|                 | Beta                      | SE    |        |       |
| Social support  | 0.282                     | 0.030 | 2.275  | 0.024 |
| Social capital  | 0.237                     | 0.018 | 2.645  | 0.009 |
| Age             | -0.232                    | 0.041 | -3.231 | 0.002 |
| Education       | 0.259                     | 0.172 | 3.709  | 0.000 |
| Coping          | 0.231                     | 0.042 | 2.637  | 0.009 |
| Chronic disease | -0.359                    | 0.113 | -2.927 | 0.004 |

SE: Standard error

diseases had the most correlation with a positive state of mind. The positive state of mind was positively correlated with the variables of social support, social capital, education, and coping, but negatively associated with age and the existence of other chronic diseases.

Hidden interactions and connections in social capital and social support of older people with HIV / AIDS lead to a positive state of mind. Also, the loss of emotional and psychological support and lack of opportunity or strength to face challenges and problems, along with old age and low education, can disrupt people's positive state of mind with HIV / AIDS. According to the available evidence, patients who have more social capital and social support are more likely to feel less embarrassed because of their internal capacities (higher intelligence, better adaptability) or access to external resources (higher income or power and influence). Furthermore, compared to others, they have more hope of receiving social support or acceptance from the family and society, so they have a positive state of mind.<sup>[11]</sup> Social support, especially in the HIV-positive population, is also associated with reduced drug injections, poverty, unemployment, and mental health.<sup>[27]</sup>

The linear regression findings indicated that a positive state of mind is most associated with social support, social capital, and coping with HIV / AIDS. These findings support the idea that social capital and social support improve people's positive mental state by increasing their ability to adapt to HIV / AIDS. Such results align with the existing literature, show that high coping ability increases one's adaptation to stressful situations.<sup>[40]</sup> As mentioned before, patients with a positive state of mind had more significant social support, social capital, and coping ability.

This finding is in line with the results of various studies that show a protective effect and moderating role of social support in the face of adverse events and adaptation to a stressful situation.<sup>[1]</sup> Higher education was also associated with a positive state of mind, which is consistent with the study of Xiao *et al.*<sup>[28]</sup>

Thus, it can be said that people who have higher social and emotional support have a more remarkable ability to adapt to problems.<sup>[12]</sup> Therefore, taking high-risk or self-harming behaviors and mental health problems are less likely to occur in HIV-positive patients with high coping abilities and a more positive state of mind. However, the results of some studies show that people infected with the HIV / AIDS virus do not receive enough support from their families and those around them.<sup>[11]</sup>

Living in conditions and societies with social trust, social capital, and social support is a protective factor for mental health because the interaction and cooperation of older people with HIV / AIDS with others can increase the sense of self-esteem, belonging, and acceptance in communities. This fact can lead to a positive state of mind. Social support and social capital availability as a barrier can prevent or decrease stressful and miserable living conditions.<sup>[3]</sup>

Financial and emotional crises and reduced social support can reduce one's motivation to pursue treatment or control. The feeling of indifference and irresponsibility in preventing the transmission of infection to pollution also increases. In addition to disrupting the patient's rehabilitation process, it puts others' health at risk.<sup>[11]</sup>

According to the World Health Organization, patients with AIDS will respond better to stress caused by infection with appropriate support and a positive state of mind.<sup>[9,20]</sup> Therefore, educating the families of patients and taking cultural, social, and organizational measures to increase psychological and social support through health-care providers may improve the quality of life, adaptation, and positive state of mind of HIV / AIDS-positive people.<sup>[3,14]</sup> Social capital, education, social support, and coping ability are important factors associated with the level of perceived support in people living with HIV / AIDS and their positive state of mind. Future studies can help establish supportive policies (in social and health) by determining the essential needs of HIV / AIDS positive older people. Designing appropriate interventions to meet these needs will pave the way for achieving justice in health.

### Limitations of the study

Since the present study was cross-sectional research, its nature did not allow us to investigate the effect of causal variables on each other. Although we tried to eliminate the impact of confounding variables by controlling the statistics analyzing, we cannot claim that the improvement in a positive state of mind resulted from social support or capital, because we have looked at this relationship simultaneously. We also prevented people from taking part in the study by the exclusion criteria and allowed only HIV-positive older people

studies, so our findings cannot be generalized to all populations. It is acceptable for some people with mood swings to leave the course because they usually suffer from psychological problems.

## Conclusions

Social support, social capital, and the ability to cope positively impact the level of perceived support in people living with HIV/AIDS and their mental health, and low education and other chronic illnesses can harm their positive state of mind. Social capital and social support, directly and indirectly, play an essential role in rehabilitating older people with HIV/AIDS and society's health. Social capital, social relationships and interactions, emotional and psychological support, and the nonrejection of patients by family and community facilitate the process of identifying hidden HIV/AIDS-positive patients. Social support plays a role in patients' adherence to treatment by increasing adaptability and life expectancy. Besides, it can prevent the occurrence of high-risk behaviors by meeting patients' emotional and psychological needs, which will also help prevent the transmission of infection. As a result, we believe that social and psychological interventions effectively improve the quality of life of patients with HIV/AIDS.

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## Conflicts of interest

There are no conflicts of interest.

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