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Investigating the Relationship Between Social Capital, Experience and Perception of Suffering, and Happiness in Patients with AIDS Referring to the Behavioral Diseases Counseling Center in Fars Province, Southern Iran: A Cross-Sectional Study

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Abstract

Background & Objectives: This study aimed to determine the associations among social capital, the experience and perception of suffering, and happiness in patients with AIDS. A descriptive, correlational, cross-sectional design was employed. The study was conducted at the Behavioral Diseases Counseling Center in Fars Province, southern Iran, from February to March 2025.

Materials & Methods: To account for an anticipated 15% loss of participants, 127 questionnaires were initially distributed. After completion of data collection, 120 questionnaires were deemed valid, corresponding to a response rate of 94.48%. Data were collected using a demographic questionnaire, the Social Capital Assessment Tool (SOCAT), the Oxford Happiness Questionnaire (OHQ), and the Schulz Perceived Suffering Scale. Statistical analyses were performed using SPSS version 25 and included descriptive and inferential statistical procedures.

Results: The mean ± standard deviation score for social capital among the patients was 45.40 ± 8.99. Pearson's correlation analysis revealed a significant inverse association between the experience and perception of suffering and happiness ($p < 0.001$). In contrast, social capital was positively associated with happiness ($p < 0.001$). the analysis using linear regression showed that economic condition ($B=4.161$, $P < 0.05$) and social capital ($B=0.487$, $P < 0.001$), emerged as the strongest predictors of happiness among patients. The variables of economic conditions ($B=-8.596$, $P < 0.05$) and social capital condition ($B=-0.544$, $P < 0.05$) served as the most powerful predictors of patient suffering .

Conclusion: The findings indicated that greater social capital, particularly trust and a sense of cohesion, was associated with a lower experience and perception of suffering and greater happiness among patients with AIDS. Accordingly, interventions such as support groups could be developed to strengthen social capital, alongside programs aimed at addressing economic inequality.

Keywords: AIDS, Social Capital, Suffering, Happiness

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Introduction

Since HIV and AIDS first emerged in the early 1980s, they have continued to constitute major global public health concerns (1). In Iran,

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epidemiological estimates suggest that the number of people living with HIV has remained relatively stable, at approximately 59,000 individuals annually since 2021 (2). Despite substantial advances in the development and widespread provision of antiretroviral therapy (ART), which have transformed HIV from a terminal condition into a chronic and manageable disease, people living with HIV (PLWH) continue to experience numerous challenges that cannot be adequately addressed through biomedical treatment alone. These challenges include persistent physical symptoms, psychological distress, and severe forms of social marginalization (3). In the Iranian context, social stigma and limited access to medical services further exacerbate these difficulties, underscoring the need to address the psychological and social dimensions of the disease (2).

Among the various aspects of human experience that become particularly salient in the context of HIV/AIDS are suffering and happiness, both of which constitute fundamental dimensions of human life (4). Suffering can be understood as the negative emotional response that individuals experience when confronted with challenges in life (5). For patients with HIV/AIDS, suffering is not limited to the physical consequences of illness; rather, it is compounded by the socially degrading consequences associated with the disease. Given the stigma surrounding HIV/AIDS, receiving a diagnosis may itself be distressing and trigger a range of adverse emotional responses (6). Lmani et al. (2021) found that people who had recently received an HIV diagnosis experienced substantial psychological suffering (6). In addition, the social, economic, psychological, and environmental difficulties encountered by PLWHA are believed to diminish their quality of life and, consequently, affect their happiness (7). Happiness, by contrast, refers to a positive emotional state characterized by satisfaction and well-being (5). Research published in 2022 demonstrated that suffering was directly associated with higher levels of depression and poorer quality of life, whereas happiness was associated with more favorable mental health outcomes (8).

Social capital has also been identified as an important modifiable societal factor that influences psychological conditions and supports positive mental health outcomes among people with HIV. Researcher Adrian Davies conceptualizes social capital in terms of interpersonal trust, social cohesion, perceived social support, and group affiliations, viewing these dimensions as core components in the development of emotional well-being (9). Empirical research has further established social capital as both a potential buffer against stress and a factor that may promote happiness (10). Evidence from China in 2020 similarly showed that higher levels of social capital were associated with more favorable mental health outcomes among older adults living with HIV (11).

Several theoretical perspectives have been proposed to explain the mechanisms through which social capital is linked to mental health. Among these, particular emphasis has been placed on collective efficacy, informal social control, and social influence. Strong community-level social capital can enhance communities' capacity to participate in policy decision-making and exercise social control, thereby facilitating access to healthcare services and strengthening collective action. In communities characterized by high levels of social capital, health-related information and positive emotions can also circulate more effectively, illustrating the role of social influence. Moreover, social capital can contribute to the creation of a safer social environment and the reduction of psychological distress by fostering supportive networks founded on norms of mutual care and collective participation (12, 13). Evidence further indicates that social capital can contribute substantially to HIV treatment and prevention by facilitating

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changes in risk-related behaviors, reducing HIV transmission, and promoting more effective utilization of prevention, care, and medical services through social groups and networks (14).

Although the association between social capital and the psychosocial burden of HIV/AIDS has received considerable international attention, culturally contextualized evidence from Iran remains limited. Because cultural values, family dynamics, and structural stigma in Iran can substantially shape both the development and functioning of social capital, research grounded in the local cultural context is necessary for designing effective, context-sensitive interventions. The scarcity of empirical evidence concerning this population therefore represents a substantial barrier to developing comprehensive mental healthcare strategies that adequately reflect their particular needs.

To address this gap in the existing literature, the present study examined the relationship between social capital and the subjective experiences of suffering and happiness among individuals living with AIDS who attended the Behavioral Diseases Counseling Center in southern Iran in 2025. The following hypothesis was formulated:

There is a relationship between social capital, the experience and perception of suffering, and happiness in patients with AIDS.

Materials & Methods

A descriptive, correlational, cross-sectional design was adopted for this study. The study was conducted at the Behavioral Diseases Counseling Center in Fars Province, southern Iran, from February to March 2025.

Sampling

The target population consisted of 282 individuals diagnosed with AIDS who visited the Behavioral Diseases Counseling Center in southern Iran to receive medical consultations, pharmacological treatment, and counseling services (n = 282). Participants were recruited using convenience sampling. Eligibility criteria included a disease duration of at least six months and an age of more than 15 years. In addition, participants were required to have received a clinical diagnosis of AIDS from an infectious disease specialist at the Behavioral Diseases Counseling Center in southern Iran and to have laboratory findings confirming HIV infection. Individuals were excluded if they failed to complete the questionnaires or voluntarily withdrew from the study at any stage of the research process.

The required sample size was estimated using a formula appropriate for correlational studies, assuming a 95% confidence level and 90% statistical power and based on a previously reported correlation coefficient of r = −0.46 (15). Accordingly, the minimum required sample size was estimated to be 110 participants. To account for an anticipated 15% loss of participants, 127 questionnaires were distributed. Following completion of the data collection process, 120 questionnaires were considered valid, corresponding to a response rate of 94.48%.

$$u = 1/2 \ln [(1 + r) / (1 - r)]$$

$$n = [(Z1-\alpha /2 + Z1-\beta) 2 / u2] + 3$$

Data Collection and Evaluation Tool

Because direct access to participants was essential and the study involved considerable ethical sensitivities associated with this population, the third author (FM), who was responsible for patient counseling and medication distribution at the behavioral disease counseling center and had regular face-to-face contact with patients, was invited to participate in the study procedures. The third author (FM) personally distributed the questionnaires to individuals who met the predetermined eligibility criteria. Before receiving the questionnaires, all participants were asked to provide written informed consent.

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They were also explicitly informed that their responses would be kept confidential and that their identities would remain anonymous.

Each participant completed the questionnaire independently in a quiet room to minimize the potential influence of other respondents. If a participant was uncertain about or did not understand an item, the researcher provided the necessary clarification during questionnaire completion. The questionnaires generally took 20 to 25 minutes to complete, after which participants returned them on the same day.

Data were collected using a structured demographic questionnaire and three standardized assessment instruments. The demographic questionnaire recorded key participant characteristics, including age, gender, marital status, educational attainment, economic conditions, and duration of illness.

Social Capital Assessment Tool (SOCAT)

Social capital was assessed using a questionnaire originally developed based on the conceptual framework of the World Bank Social Capital Assessment Tool (SOCAT) (16). Kassani et al. (2012) subsequently conducted a factor analysis of the Persian version and established its reliability and validity for use in the Iranian context (17). The instrument comprises 27 items and assesses three dimensions of social capital: voluntary participation (9 items), trust (9 items), and a sense of cohesion (9 items). Responses are rated on a five-point Likert scale ranging from 1 ("Never") to 5 ("Always"), yielding possible total scores ranging from 27 to 135.

Baghbanian et al. (2024) reported an overall Cronbach's alpha coefficient of 0.75 for the instrument when administered to patients with COVID-19 (18). In the present study, reliability was additionally assessed using the test-retest procedure. The questionnaire was administered to 50 patients diagnosed with HIV/AIDS on two occasions separated by a two-week interval. The intraclass correlation coefficient (ICC) for the 27 items was 0.85, indicating good test-retest reliability. Internal consistency was also assessed in the current sample using Cronbach's alpha coefficient, which yielded a value of $\alpha = 0.89$, indicating good internal consistency.

Oxford Happiness Questionnaire (OHQ)

The Oxford Happiness Questionnaire was developed by Argyle and his colleagues. The questionnaire consists of 29 items and measures seven dimensions of happiness: life satisfaction, self-concept, psychological preparedness, enthusiasm, aesthetic appreciation, self-efficacy, and hopefulness. Each item is scored on a four-point Likert scale ranging from 0 to 3, with "Never" representing the lowest score and "Always" the highest, resulting in a total score range of 0 to 87.

The conventional interpretation of OHQ scores classifies scores below 22 as low happiness, scores of 22 to 43 as moderate happiness, scores of 44 to 67 as high happiness, and scores of 68 to 87 as very high happiness. Argyle and colleagues reported a Cronbach's alpha coefficient of 0.90, indicating high internal consistency, together with a test-retest reliability coefficient of 0.78 over a seven-week interval (19). Alipour and Noorbala (1999) reported Cronbach's alpha coefficients of 0.94 for male participants and 0.90 for female participants, indicating high internal consistency (20).

The Suffering Experience and Perception Scale (Scalzo et al., 2010)

Developed by Scalzo and colleagues in 2010, the Suffering Experience and Perception Scale consists of 33 items designed to assess three domains of suffering: physical suffering, psychological suffering, and existential and spiritual suffering (21). Physical suffering is assessed using nine items distributed across two subcomponents. These items are scored on a four-point Likert scale ranging from 0 to 3, yielding total scores ranging from 0 to 54. Scores below 18 indicate low physical suffering, scores of 19 to 36 indicate moderate physical

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suffering, and scores of 37 to 54 indicate high physical suffering.

Psychological suffering is assessed using 15 items, with each item rated on a four-point Likert scale ranging from 0 = very little to 3 = very much. The resulting total score ranges from 0 to 45. Scores of 15 or lower indicate low psychological suffering, scores between 16 and 30 indicate moderate suffering, and scores ranging from 31 to 45 indicate high psychological suffering.

Existential and spiritual suffering is assessed using nine specific items rated on a five-point Likert scale ranging from 0 = very little to 4 = very much, producing a possible score range of 0 to 36. Three severity categories are used to characterize existential and spiritual suffering: scores of 0 to 11 indicate minimal suffering, scores of 13 to 24 indicate moderate suffering, and scores of 25 to 36 indicate extreme severity.

Babahasani et al. (2020) reported Cronbach's alpha coefficients of 0.85 for physical suffering, 0.83 for psychological suffering, 0.82 for existential and spiritual suffering, and 0.86 for the total perceived suffering scale (22). In the present study, the reliability of the questionnaire was assessed using the test-retest method. The instrument was administered to 50 patients diagnosed with HIV/AIDS on two separate occasions, with a two-week interval between assessments. Internal consistency reliability was also evaluated using Cronbach's alpha coefficient, which yielded $\alpha = 0.90$ in the present sample, indicating good internal consistency.

Table 1. Frequency distribution of sociodemographic characteristics of the studied Patients.

Variable		Percentage	Frequency
Age	15-25	8.3	10
	26-35	3.23	28
	36-45	2.39	47
	46-55	0.025	30
	65-56	2.4	5
	Total	100	120
Gender	Female	65	78
	Male	35	42
	Total	100	120
Marital Status	Single	7.26	32
	Married	7.46	56
	Divorced	8.20	25
	Widow	8.5	7
	Total	100	120
Education	Elementary	31.7	38
	Secondary	38.3	46
	Diploma	25.8	31
	College Education	2.4	5
	Total	100	120
The economic situation	Low	8.50	61
	Medium	45.8	55
	High	3.3	4
	Total	100	120
Duration of Illness	6 months - 1 year	6.7	8
	1-3 years	7.5	9
	3-5 years	11.7	14
	> 5 years	74.2	89
	Total	100	120

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Data Analysis

All statistical analyses were performed using SPSS version 25. Descriptive analyses were conducted to summarize the study data using means and standard deviations, as well as frequencies and percentages. For inferential analyses, Pearson's correlation coefficient and linear regression models were used to examine the associations among the study variables. A p-value of < 0.05 was considered statistically significant throughout the analyses. To account for the potential influence of confounding factors, multiple linear regression analyses were subsequently performed. Multicollinearity among the variables was assessed using tolerance values and variance inflation factors (VIFs). Accordingly, p-values < 0.05 were considered statistically significant. The Kolmogorov-Smirnov test was also applied to assess whether the data followed a normal distribution, with $p > 0.05$ indicating no significant departure from normality.

Results

Following completion of data collection, 120 questionnaires were deemed valid for

Table 2. Relationship between demographic characteristics and Social Capital, experience and perception of suffering and Happiness of the studied Patients.

		Social Capital			experience and perception of suffering					Happiness
		p-value*	statistic	Mean±SD	p-value*	statistic	Mean±SD	p-value*	statistic	Mean±SD
Age		0.376	1.068		0.537	0.785		0.061	2.321	
	15-25			45.00±7.53			66.30±7.72			24.40±9.13
	26-35			43.43±7.91			69.82±21.11			16.78±13.31
	36-45			46.28±9.11			67.81±15.88			21.59±9.71
	46-55			44.97±8.92			71.53±21.52			20.03±10.09
	56-65			51.60±10.34			56.60±26.24			31.40±11.58
Gender		0.550	-0.599		0.576	0.561		0.980	0.025	
	Female			45.04±8.33			69.32±20.17			20.57±10.00
	Male			46.07±10.16			67.31±15.63			20.52±12.82
Marital Status		0.343	1.121		0.072	2.398		0.055	2.608	
	Single			44.66±8.95			73.12±22.06			17.09±12.39
	Married			44.52±8.71			70.09±18.70			20.23±10.26
	Divorced			47.08±10.22			60.92±12.51			24.48±10.68
	Widow			49.86±5.43			63.71±12.53			25.00±6.35
Education		0.982	0.056		0.823	0.304		0.433	0.921	
	Elementary			45.84±10.64			68.05±20.63			22.45±11.67
	Secondary			45.13±8.91			69.80±20.62			20.54±10.00
	Diploma			45.39±7.24			68.68±12.12			18.06±11.60
	College Education			44.60±8.08			61.60±21.44			21.80±11.45
The economic situation		0.000	16.001		0.011	4.683		0.000	8.200	
	Low			42.28±8.19			72.61±19.14			18.08±10.89
	Medium			47.60±7.72			65.65±17.01			22.00±9.78
	High			62.75±10.01			48.50±16.03			38.50±11.23
Duration of Illness		0.357	1.087		0.208	1.539		0.828	0.297	
	6months-1year			49.00±4.47			71.12±10.13			20.37±12.74
	1-3years			48.00±7.63			61.78±12.28			23.22±9.11
	3-5years			42.78±7.46			60.78±9.37			21.93±7.96
	>5years			45.22±9.55			70.31±20.45			20.09±11.54

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analysis. The mean age of the participants was approximately 40 years. Of the total sample, 65% were female, 46.7% were married, 38.3% had a secondary education, and 50.8% reported a low socioeconomic status. Regarding disease duration, 74.2% (89) of the patients had been living with the disease for more than 5 years. The demographic characteristics of the study participants are presented in Table 1.

The associations between demographic characteristics and patients' scores for happiness, experience and perception of suffering, and social capital were assessed using the independent-samples t-test and analysis of variance. The results showed a statistically significant association between economic status and all three outcomes, including happiness, experience and perception of suffering, and social capital ($p < 0.05$) (Table 2).

The mean happiness score was 20.56 ± 11.02. The mean score for the experience and perception of suffering was 68.61 ± 18.66, while the mean social capital score was 45.40 ± 8.99. Among the dimensions of social capital, voluntary participation had the highest mean score (17.62 ± 4.34), whereas trust had the lowest (13.43 ± 3.33) (Table 3).

Pearson's correlation analysis showed a significant inverse association between the experience and perception of suffering and happiness, with higher levels of perceived suffering associated with lower levels of happiness among the patients ($p < 0.001$). In contrast, social capital was significantly and positively associated with happiness ($p < 0.001$). The results also showed that the "sense of cohesion" and "trust" dimensions of social capital were each significantly and inversely associated with overall suffering and its individual components ($p < 0.05$). However, no statistically significant association was found between voluntary community participation and patients' suffering or any of its subcomponents ($p > 0.05$) (Table 4).

As shown in Table 5, the analysis using linear regression showed that economic condition ($B=4.161$, $P < 0.05$) and social capital ($B=0.487$, $P < 0.001$), emerged as the strongest predictors of happiness among patients. The variables of economic conditions ($B=-8.596$, $P < 0.05$) and social capital condition ($B=-0.544$, $P < 0.05$) served as the most powerful predictors of patient suffering .

Table 3: The average score of research variables in the studied patients.

Variable	Mean±SD	Min	Max
Physical suffering	19.88±9.26	1	54
Psychological suffering	24.90±6.87	4	45
Existential-spiritual suffering	23.83±5.58	1	36
Total of experience and perception of suffering	68.61±18.66	26	135
Life satisfaction	2.23±1.35	0	6
Self-concept	5.48±3.12	0	13
Psychological Preparedness	3.11±1.67	0	7
Enthusiasm	1.39±0.90	0	4
Aesthetic Appreciation	3.54±1.99	0	10
Self-efficacy	2.81±1.67	0	8
Hopefulness	1.44±0.90	0	4
Total of Happiness	20.56±11.02	0	51
Voluntary participation	17.62±4.34	9	25
sense of cohesion	14.35± 3.28	9	25
Trust	13.43±3.33	8	25
Total of social capital	45.40±8.99	27	75

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Table 4. Relationship between the variables of Social Capital, Experience and perception off suffering and Happiness.

Variable	Physical suffering	Physical suffering	Psychological suffering	Existential-spiritual suffering	Total of experience and perception of suffering	Life satisfaction	Self-concept	Psychological Preparedness	Enthusiasm	Aesthetic Appreciation	Self-efficacy	Hopefulness	Total of Happiness	Voluntary participation	sense of cohesion	Trust	Total of social capital
Physical suffering																	
Psychological suffering	r=0.651 p<0.001																
Existential-spiritual suffering	r=0.548 p<0.001	r=0.586 p<0.001															
Total of experience and perception of suffering	r=0.899 p<0.001	r=0.866 p<0.001	r=0.786 p<0.001														
Life satisfaction	r=-0.436 p<0.001	r=-0.352 p<0.001	r=-0.456 p<0.001	r=-0.482 p<0.001													
Self-concept	r=-0.523 p<0.001	r=-0.498 p<0.001	r=-0.573 p<0.001	r=-0.614 p<0.001	r=0.793 p<0.001												
Psychological Preparedness	r=-0.512 p<0.001	r=-0.486 p<0.001	r=-0.553 p<0.001	r=-0.598 p<0.001	r=0.787 p<0.001	r=0.854 p<0.001											
Enthusiasm	r=-0.512 p<0.001	r=-0.578 p<0.001	r=-0.492 p<0.001	r=-0.614 p<0.001	r=0.714 p<0.001	r=0.876 p<0.001	r=0.793 p<0.001										
Aesthetic Appreciation	r=-0.479 p<0.001	r=-0.484 p<0.001	r=-0.555 p<0.001	r=-0.581 p<0.001	r=0.766 p<0.001	r=0.913 p<0.001	r=0.823 p<0.001	r=0.796 p<0.001									
Self-efficacy	r=-0.506 p<0.001	r=-0.553 p<0.001	r=-0.562 p<0.001	r=-0.623 p<0.001	r=0.697 p<0.001	r=0.890 p<0.001	r=0.845 p<0.001	r=0.820 p<0.001	r=0.866 p<0.001								

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Hopeful-ness	r=-0.518 p<0.001	r=-0.462 p<0.001	r=-0.494 p<0.001	r=-0.575 p<0.001	r=0.646 p<0.001	r=0.752 p<0.001	r=0.760 p<0.001	r=0.679 p<0.001	r=0.738 p<0.001	r=0.775 p<0.001			
Total of Happiness	r=-0.543 p<0.001	r=-0.529 p<0.001	r=-0.585 p<0.001	r=-0.639 p<0.001	r=0.848 p<0.001	r=0.972 p<0.001	r=0.921 p<0.001	r=0.883 p<0.001	r=0.943 p<0.001	r=0.931 p<0.001	r=0.821 p<0.001		
Voluntary particpa-tion	r=-0.149 p=0.104	r=-0.121 p=0.189	r=-0.154 p=0.094	r=-0.164 p=0.073	r=0.510 p<0.001	r=0.376 p<0.001	r=0.398 p<0.001	r=0.273 p=0.003	r=0.371 p<0.001	r=0.322 p<0.001	r=0.366 p<0.001	r=0.411 p<0.001	
sense of cohesion	r=-0.262 p=0.004	r=-0.280 p=0.002	r=-0.345 p<0.001	r=-0.276 p=0.002	r=0.399 p<0.001	r=0.438 p<0.001	r=0.426 p<0.001	r=0.425 p<0.001	r=0.431 p<0.001	r=0.437 p<0.001	r=0.353 p<0.001	r=0.459 p<0.001	r=0.574 p<0.001
Trust	r=-0.105 p=0.255	r=-0.243 p=0.007	r=-0.263 p=0.004	r=-0.220 p=0.016	r=0.336 p<0.001	r=0.383 p<0.001	r=0.415 p<0.001	r=0.348 p<0.001	r=0.453 p<0.001	r=0.423 p<0.001	r=0.377 p<0.001	r=0.430 p<0.001	r=0.352 p<0.001
Total of social capital	r=-0.206 p=0.024	r=-0.251 p=0.006	r=-0.255 p=0.014	r=-0.262 p=0.004	r=0.517 p<0.001	r=0.484 p<0.001	r=0.502 p<0.001	r=0.418 p<0.001	r=0.506 p<0.001	r=0.472 p<0.001	r=0.445 p<0.001	r=0.526 p<0.001	r=0.823 p<0.001

Discussion

The present study examined the relationships among social capital, the experience and perception of suffering, and happiness in patients with AIDS who were referred to the Behavioral Diseases Counseling Center in southern Iran. Although advances in medical treatment have transformed AIDS into a manageable condition and substantially reduced its fatal consequences, individuals living with AIDS continue to face a wide range of psychosocial challenges that may have serious implications for mental health (23). The findings of the present study indicated that both happiness and social capital among individuals living with HIV/AIDS were below desirable levels. Multivariate linear regression analysis also identified economic situation and happiness as significant predictors of social capital.

These findings are consistent with those reported by Li et al. (2025), who found a substantial prevalence of low social capital among older adults living with HIV/AIDS. Their analysis showed significant associations among social support, depression, economic status, and social capital, suggesting the value of developing supportive networks to prevent or mitigate deficiencies in social capital and, in turn, facilitate healthy aging (24). Similar findings were reported by Yousaf et al. (2025), who found that people living with HIV/AIDS (PLWHA) had significantly poorer social functioning than their HIV-negative counterparts (25).

Further support for the present findings comes from studies by Sharma (2023) and Nadrian et al. (2024), both of which identified social capital as a significant predictor of happiness (26, 27).

Similarly, Adedeji et al. (2023) found significant associations among socioeconomic status, different dimensions of social capital, and happiness among people living with HIV (28). The contribution of socioeconomic status

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Table 5. Liner regression results of Social Capital on Happiness and experience and perception of suffering among patients.

Variable	Happiness				experience and perception of suffering			
Variable	B	S.E	t	p-value*	B	S.E	t	p-value*
Age	-0.177	0.977	-0.181	0.857	0.880	1.895	0.464	0.643
Gender	-2.589	1.981	-1.307	0.194	2.589	3.841	0.674	0.502
Marital Status	3.271	1.150	2.844	0.11	-5.894	2.230	-2.643	0.09
Education	-2.063	1.117	-1.847	0.067	1.226	2.166	0.566	0.572
The economic situation	4.161	1.804	2.306	0.023	-8.596	3.499	-2.457	0.016
Duration of Illness	-0.583	0.997	-0.585	0.560	1.362	1.933	0.705	0.482
voluntary participation	1.045	0.213	4.904	<0.001	-0.707	0.391	-1.809	0.073
Sense of Cohesion	1.543	0.275	5.619	<0.001	-1.569	0.503	-3.118	0. 12
Trust	1.418	0.274	5.168	<0.001	-1.231	0.502	-2.452	0.16
Social Capital	0.487	0.109	4.456	<0.001	-0.544	0.185	-2.946	0.004

B: Regression coefficient. SE of B: Standard error of B

to happiness is particularly relevant because more favorable economic circumstances may be associated with broader and more supportive social networks, more positive interpersonal interactions, greater financial security, better health outcomes, and greater opportunities for personal and life advancement (29, 30). For individuals affected by HIV/AIDS, progressive deterioration in physical health may coincide with job loss and increased withdrawal from the workforce across different occupational sectors, which can collectively contribute to substantial economic decline (31).

Notably, Ru et al. (2019), in their study conducted in Denpasar, Indonesia, found that individuals living with HIV continued to experience happiness despite their diagnosis. In contrast to the findings of the present study, their analysis indicated that socioeconomic, psychological, and environmental factors were not significant determinants of happiness in the study population. Instead, religiosity emerged as a significant positive determinant of well-being, and the authors concluded that religiosity fully mediated the association between socioeconomic and environmental factors and happiness among people living with HIV (7). Because religiosity was not examined in the present study, differences in the degree of religious engagement among participants may partly explain the difference between the level of happiness observed in the present study and that reported among individuals living with HIV in Denpasar. The observed differences may also reflect variations in the conceptualization and operationalization of social capital, as well as differences in the cultural, social, and regional contexts in which the respective populations were studied.

The findings also showed that individuals living with HIV experience a broad range of physical symptoms. Consistent with this observation, previous investigations have shown that physical symptom burden remains common among people living with HIV who receive antiretroviral therapy (32, 33). However, the burden identified in the present study was not limited to physical manifestations; substantial psychological and existential and spiritual distress was also evident among patients with HIV/AIDS. Consistent with these findings, Lmani et al. (2021) reported that individuals newly diagnosed with HIV experience intense psychological suffering (6).

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Shi et al. (2024) likewise characterized the suffering experienced by patients with AIDS as multidimensional. At the physiological level, patients face systemic symptoms and increased physical vulnerability; at the psychological level, they experience emotional turmoil, limited knowledge concerning HIV/AIDS, and persistent stigma and discrimination; socially, they encounter economic hardship and inadequate support systems; and spiritually, they experience existential conflict, pessimism about the future, and emotional distress associated with death (34). Compared with the general population, individuals living with HIV have a significantly higher prevalence of persistent psychological distress (35).

The analysis using linear regression showed that economic condition and social capital, emerged as the strongest predictors of happiness among patients. The variables of economic conditions and social capital served as the most powerful predictors of patient suffering. These findings are consistent with evidence demonstrating associations between socioeconomic stability, social capital, and physical and psychosocial well-being among this population. Shokoohi et al. (2019), for example, reported substantial associations between social determinants, including structural inequalities and economic status, and self-reported physical and psychological suffering among both HIV-positive and HIV-negative women (36). Likewise, Han et al. (2020) found a significant inverse association between social capital and psychological distress among people living with HIV (37). Carrillo-Alvarez et al. (2022) similarly reported that each component of social capital was inversely associated with psychological distress (38). Adraro et al. (2024) also described the distinctive difficulties faced by adolescents and young adults living with HIV/AIDS, reporting adverse consequences across the physical, psychological, emotional, and social domains of functioning (39).

Limitations

Several limitations should be considered when interpreting the findings of this study. First, the use of convenience sampling may have introduced selection bias. In addition, because participants were recruited exclusively from a behavioral disease counseling center in Fars Province, southern Iran, the generalizability of the findings to patients living in other regions may be limited. The experiences of individuals living with HIV are likely to differ across settings with different cultural, religious, economic, and sociopolitical circumstances. This contextual variability was also emphasized by Adraro et al. (2024), who noted substantial differences in the experiences of people living with HIV according to the communities, cultures, and structural environments in which they reside (39).

Although existential and spiritual suffering was included in the assessment, important baseline indicators of religiosity and spirituality, such as religious attendance, spiritual coping, and personal beliefs, were not specifically measured or statistically controlled for. Because religious and spiritual engagement may contribute to psychological well-being, the absence of these potentially relevant variables constitutes an important limitation.

Most importantly, the cross-sectional correlational design precludes the establishment of causal relationships among the study variables. Longitudinal or prospective investigations are therefore warranted to clarify temporal associations and determine whether the observed relationships persist over time.

Conclusion

The findings demonstrated that greater social capital, particularly with respect to trust and a sense of cohesion, was associated with a lower experience and perception of suffering and greater happiness among patients with AIDS. Whereas suffering was

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inversely associated with happiness, economic circumstances emerged as an important factor in understanding the needs and challenges of this population and, consequently, in determining priorities for healthcare provision. Health planning and service delivery should therefore incorporate targeted interventions that integrate peer support groups with policies designed to reduce economic disparities, with the broader objective of strengthening social capital and improving health services. Further longitudinal research is required to establish the temporal relationships among the principal variables, clarify their associations with social capital outcomes, and determine whether these effects are sustained over longer periods of follow-up.

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Conflict of Interest

The authors declare that they have no competing interests.

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Availability of Data and Materials

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Consent for Publication

Not applicable.

Ethical Consideratons

Written informed consent was obtained from all participants before their inclusion in the study. The study was conducted in accordance with the principles of the revised Declaration of Helsinki, which sets out ethical guidance for medical research involving human subjects. Participants were assured that their information would be maintained anonymously and confidentially. The study was also approved by the Institutional Research Ethics Committee of Fasa University of Medical Sciences, Fasa, Iran.

Code of Ethics

IR.FUMS.REC.1403.120 .

Author Contribution Statements

MB, AP, and ZB contributed to the conception and organization of the study. FM and AD were responsible for study execution and data collection. MB and AD contributed to the design and/or implementation of the statistical analysis. All authors participated in the preparation and critical review of the manuscript, and all authors approved the final version. All authors agreed to accept accountability for the content and conclusions of the article. In addition, the authors declare and confirm that no artificial intelligence software was used in the writing of the article or in the analysis of the data.

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