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Correlation of self-compassion and spiritual well-being with drug craving in people with substance use disorders

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Abstract

Background: Globally, drug abuse is a serious and exacerbating phenomenon, not only in terms of its prevalence and its impact on individuals, families, professional and social aspects but also because of its economic and medical repercussions. Cravings, the main feature of addiction, are the drivers of continued drug abuse and a return to addiction after recovery. This research aimed to explore the relationship between self-compassion and spiritual well-being with drug cravings. This research used a descriptive correlational study design. The study sample consisted of all accessible addiction patients who had visited the outpatient clinics or were admitted to the Addiction Unit of the Psychiatry Department at Mansoura University Hospital during a 3-month period from October to December 2020. Patients were asked to respond to questionnaires assessing self-compassion, spiritual well-being, and drug craving.

Results: The results showed that the majority of the participants had a moderate level of self-compassion and spiritual well-being. However, drug cravings were negatively related to both self-compassion and spiritual well-being.

Conclusions: People with drug addiction consistently need programs to increase their self-compassion and spiritual well-being to overcome the intensity of cravings. Improving feelings of self-compassion and spiritual well-being has a positive effect in reducing craving for substance abuse among drug-addict patients.

Keywords: Addiction, Drug craving, Self-compassion, Spiritual well-being, Substance dependence

Background

Drug addiction, a highly prevalent disorder affecting more than 10% of the world's population, is a major public health problem associated with increased mortality, morbidity, sociocultural problems, and healthcare costs [1]. Several factors may hinder maintaining drug abstinence over time. Among the most important of craving is a symptom of withdrawal and is caused by changes in neurochemicals induced by psychotropic substances; cravings may be triggered by exposure to internal or external environmental problems [2].

Many countries around the world have established national programs to regularly monitor drug use rates within their borders and study how these rates have changed over time. Egypt, for example, began monitoring in 1994, which revealed that 6.2% of the population had previously reported using the substance at least once [3]. The second report of the National Program for Addiction Research in Egypt in 2005 revealed that 12.6% of the population were regular users. These results highlight the growing severity of the drug abuse crisis in the country [4]. Despite these high levels of use of psychoactive substances, there were limitations in the treatment of drug abusers due to difficulties in recognizing the preventive aspects and risk factors affecting the unhealthy use of drugs [5].

Relapse and lack of control over substance abuse are major issues [6]. Post-treatment relapse of addiction is likely as the belief in craving perpetuates opioid addiction; In other words, the physiological state of craving is

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an indicator of drug abuse and relapse [7]. Craving for substance abuse is a strong and persistent desire to abuse drugs and produces a strong drive to pursue substance abuse and addiction [6].

Craving refers to a physical and mental state of craving for a specific psychoactive drug, which is manifested by the individual and directed to a drug previously taken [8]. Sometimes users themselves attribute their cravings to their inability to control their cravings to use drugs, which leads to burglary, theft, or fraud.

Self-compassion is a multifaceted concept that is made up of factors that promote empathy with oneself, including mindfulness, self-kindness, and common humanity. Mindfulness is the present-focused awareness of an individual's reactions to life events. Self-kindness involves being understanding and providing self-care for yourself when faced with difficulty. Common humanity indicates that all human beings face difficulties, challenges, and negative or contradictory emotions [9].

Self-compassion is a positive and emotional attitude towards self. Previous research has shown that self-compassion is positively associated with positive effects and negatively associated with negative effects. In addition, self-compassion is an emotional adjustment technique that allows an individual to notice, tenderness, understand, and accept negative emotions with a shared sense of humanity. Therefore, during times of suffering and distress, self-sympathy helps turn negative emotions into more positive emotions [10].

Studies have shown that self-compassion is associated with much positive psychological strength. For example, people with a high level of self-compassion reported more happiness than those with a low level of self-compassion. More generally, higher levels of hope, gratitude, and positive impact are also shown. Self-compassion is often associated with emotional intelligence, wisdom, personal initiative, intellectual flexibility, curiosity, life satisfaction, and emotions of social connection—all are essential components of a fulfilling existence. In addition, self-compassion traits are associated with independence, abilities, relationships, and self-determination [11].

Various studies suggest that aspects that promote self-compassion may serve as protective factors for alcohol abuse. However, studies investigating these positive aspects of sympathy or self-compassion for alcohol use after treatment of substance use disorders are still needed and recommended by several studies [9].

We need to consider the different dimensions that make up humans. Spirituality and religiosity are powerful partners in people's lives and are partly responsible for helping prevent self-destructive behavior associated with substance use. Spirituality and religiosity are separate components because spirituality embraces the existential realm and human nature, provides meaning to life through feelings of hope and faith, and enhances human well-being. Religiosity, on the other hand, is an expression of spirituality characterized by the adoption of ritual values, beliefs, and customs [5].

Douaihy and Singh [12] described spiritual well-being as a special condition. It is linked to the positive emotions, behaviors, responses of perception, and powers associated with self and others. The individual in a state of spiritual well-being is content with identity, honesty, loyalty, pleasure, happiness, elegance, affection, respect, optimistic outlook, comfort, inner harmony, and spiritual well-being to achieve the goal. Mental health has two aspects: religious health and existential health. Religious health represents the relationship between the individual and God or eternal power, while existential well-being refers to the relationship between the individual and others surrounding him in this world, and his internal relationships [13]. In the context of drug addiction, one study found that both religiosity and spirituality are protective factors that prevent the abuse of alcohol and other drugs and are associated with improved human life skills and physical and mental health [14].

Craving is an important factor in continued alcohol and drug use, and their recurrence during abstinence [8]. Therefore, it is useful to know the factors that may cause cravings behavior in drug addicts. Therefore, this study aims to investigate the relationship between self-compassion, mental well-being, and craving among people with substance use disorders.

Methods

Research design and setting

This study employed a cross-sectional descriptive research design in which the participants were asked to fill out a self-report questionnaire. The study was implemented at the addiction unit and outpatient clinics of the psychiatric department of Mansoura University Hospital due to the convenience to the researchers. This psychiatric department includes an inpatient addiction treatment unit that specializes in the treatment and rehabilitation of drug addictions and their follow-up after hospital discharge. The addiction unit includes a detoxification unit (10 beds) a rehabilitation unit (20 beds), intermediate care unit, two outpatient clinics, in addition to a gym and an entertainment hall that contains tennis and billiards tables, a video player, and a PlayStation. This department, which is a research center that supports research into the social and psychological factors that promote drug addiction, works to improve the environment to achieve the best treatment outcomes and rehabilitation plans for drug addicts in Egypt.

Participants

A non-probability convenience sampling procedure, total sampling specifically, was used to select the study sample. Data was gathered from all accessible patients with drug addiction who had visited the outpatient clinics or who had been admitted to the inpatient unit during a period of three months from October to December 2020 at the psychiatric department of Mansoura University Hospital. Both male and female patients were included in the study sample. During the study period, 123 patients had visited the addiction unit or clinics; however, 115 clients had agreed to participate in the study and were offered the questionnaire. The number of completed questionnaires that were returned was 100, representing a response rate of 87%.

Inclusion criteria

- Drug addiction patients who visited the clinics or were admitted to the inpatient unit.
- In the period from October to December 2020.
- Willing to participate in the study.

Data collection tool

Four data collection tools were used in the study:

1. Socio-demographic datasheet: gathers demographic information and drug abuse history such as age, education level, marital status, employment status, income, residence, age of drug abuse onset, how drugs were first time used, family history of drug abuse, type of drug, and number of withdrawal attempts.
2. Brief Substance Craving Scale (BSCS): a self-reporting scale consisting of four items to assess the level of craving tendency and desire of the patient for each addictive substance, which was developed by Somoza et al. [15]. This instrument measures the intensity, frequency, and length of time spent craving in the past 24 h, using a five-point Likert scale ranging from 0 to 4 with a mean score of 0 indicating no cravings in the past 24 h and a mean score of 4 indicating a high tendency for drug craving. This scale is highly correlated with addiction severity scales, and its reliability tested using Cronbach's α was reported as 0.88 [15]. Translation and reverse translation of the tool into the Arabic language was conducted by experts; the tool was then tested for content validity and piloted before being used.
3. Spiritual Well-Being Scale (SWBS): This scale is a self-reported scale consisting of 20 items, which was developed by Ellison [16]. This study used the Arabic version of the SWBS which was translated and implemented by Musa and Pevalin [17]. This scale measures levels of spiritual well-being and consists of two subscales: a religious well-being subscale (10 items) provides a self-assessment of one's relationship with God, and an existential well-being subscale (10 items) gives a self-assessment of one's sense of life purpose and life satisfaction. The scale uses a six-point Likert scale ranging from "strongly agree" to "strongly disagree." The total scores of this scale range from 20 to 120, with higher scores indicating greater well-being. The SWBS has a high internal consistency, high reliability, and high alpha coefficients ranging from 0.83 to 0.87 [17, 18].
4. Self-Compassion Scale (SCS): the SCS was first published by Neff [19]; however, this study used the Arabic version of SCS which was developed and translated by Hacheem [20]. The scale measures the characteristics of self-compassion and consists of 26 items that measure six subscales: self-kindness, common humanity, self-judgment, isolation, mindfulness, and over-identification. Each item was rated on a five-point Likert scale (1 = almost never to 5 = almost always). The total scores of this scale range from 26 to 130, with higher scores indicating greater self-compassion. The SCS has a high internal consistency, high reliability, and high alpha coefficients ranging from 0.84 to 0.86 [20]. The mean of the scores was used for the last three scales (BSCS, SWBS, and SCS) for statistical analysis and to classify the responses into categories based on a cut score.

Pilot study

Piloting the questionnaire was carried out on 10% of the estimated study sample (13 cases). The estimated study sample was calculated using the sum of outpatient and inpatient cases who had visited the drug addiction unit for the previous three months (July through September 2020). This was 130 cases, and piloting was carried out on 13 of these participants. Piloting was conducted to evaluate the applicability and clarity of the questionnaire and assessment of the feasibility of fieldwork and to detect any possible obstacles that the researcher might face that could interfere with data collection. Necessary modifications were carried out based on the pilot study findings, such as omission and modification of some questions in order to strengthen the questionnaire contents and to improve the simplicity and clarity. The pilot sample was excluded from the main study sample. The validity and reliability of the questionnaire were then tested by a jury of experts in psychiatric and mental health specialties.

Validity and reliability

For content validity testing, the questionnaire was given to a panel of five experts of psychiatric staff members and nursing professors who reviewed the instruments for clarity, relevance, comprehensiveness, understandability, applicability, and level of difficulty. The alpha Cronbach's test was used to check the stability of the internal consistency of the instrument and was deemed acceptable for the BSCS, SWBS, and SCS at 0.81, 0.84, and 0.89, respectively.

Study procedures

The data collection process was completed over the course of three months (October to December 2020). The electronic questionnaires were disseminated to the patients using Google Forms via a link that allowed them sufficient time to read and answer appropriately. The completed forms were collected by the researcher for statistical testing and analysis. The data were tabulated, coded, and analyzed, then descriptive and correlation statistics were performed. Missing data was not expected as all questions needed to be answered before moving on to the next question.

Statistical analysis

The data collected was organized and analyzed using the Statistical Package for Social Sciences (SPSS) version 26.0 [21]. Data were presented using descriptive statistics in the form of frequencies and percentages for the qualitative variables, and the mean and standard deviations of the quantitative variables. The Kolmogorov-Smirnov test returns a significance of less than 0.05, indicating that the data was not normally distributed. Therefore, we used a nonparametric test for the detection of the differences. The Kruskal-Wallis test was used to identify the significance in scores' differences between groups of participants from more than two groups. On the other hand, the Mann-Whitney *U* test was used to assess the scores' difference between two independent groups.

The Pearson correlation test was used to determine the correlation between the variables. The Pearson correlation test result was considered statistically significant at p value ≤ 0.05 and highly significant at p value ≤ 0.001.

Ethical consideration

All official permits to conduct the study have been secured from the competent authorities. All patients were made aware of the importance and purpose of this study. Written consent was obtained from all participants in the current study. All patients were informed that their participation was voluntary; and that they have the right to withdraw at any time. The confidentiality of the information obtained is guaranteed. Participants were also informed that the data collected will only be used for the purpose of the current study, as well as for their benefit.

All ethical issues related to this scientific research were considered in accordance with the Declaration of Helsinki [22]. Moreover, an official written approval letter explaining the purpose of the current study was approved in September 2020 by the Research Ethics Committee of the Faculty of Nursing at Mansoura University and the Head of the Psychiatry Department at Mansoura University Hospital.

Results

The results of the study are illustrated in eleven tables. As shown in Table 1, the total number of participants was 100, and over half of them (55%) were young (20–29 years old), with an average age of 29.21 ± 7.49 years old. The vast majority were males (97%), and just below half of them (45%) had a secondary school education;

Table 1 Participant sociodemographic characteristics (N = 100)

Sociodemographic data		*n*	%
Age category	20–29	55	55.0%
	30–39	38	38.0%
	40 and over	7	7.0%
	M ± SD	29.21 ± 7.49	
Sex	Male	97	97.0%
	Female	3	3.0%
Education	Illiterate	7	7.0%
	Primary school	4	4.0%
	Secondary school	45	45.0%
	High school	24	24.0%
	University education	20	20.0%
Marital status	Single	88	88.0%
	Married	12	12.0%
Occupation	No job	73	73.0%
	Has a job	27	27.0%
Place of residence	Suburb	40	40.0%
	City	60	60.0%
Income	Not sufficient	52	52.0%
	Sufficient	48	48.0%
Number of family members	Small (2–4)	48	48.0%
	Medium (5–7)	33	33.0%
	Large (8 and more)	19	19.0%
Order within family members	1st	1	1.0%
	2nd	30	30.0%
	3rd	32	32.0%
	4th	17	17.0%
	5th	11	11.0%
	6th	4	4.0%
	7th or more	5	5.0%

n = frequency, % = percent, M = mean, SD = standard deviation

only 11% of them were illiterate or with primary school education. Most of them were single (88%) and had no job (73%). More than half of the participants resided in cities and had insufficient monthly income (60% and 52%, respectively). Less than half of the participants (48%) lived in small families (two to four family members), and almost 62% of them were the second or third members in the order within their families.

Regarding the history of addiction in the participants, Table 2 shows that the majority of participants (41%) became addicted to drugs between 2016 and 2020, and almost one-third of them became addicted to drugs between the years 2006 and 2010 (34%). The majority had a psychotherapy duration of 3–6 months, one to two times admissions to a psychiatric hospital (2.96 average admissions), with no psychiatric or mental illness history among their families (80%, 71%, and 92%, respectively). Participants reported using heroin, cannabis, Strox, Tramadol, and benzodiazepine (56%, 17%, 17%, 5%, and 5%, respectively). However, no cases of addiction affecting family members were reported in the participant sample.

Table 3 shows the distribution and the mean of the self-compassion scale and its six subscales for the participants. As shown, the vast majority of participants (92%) had a moderate level of self-compassion, with a mean of 3.03 out of 5 on the Likert scale. The self-compassion subscales were moderate for the majority of the participants, with the highest subscale mean scores reported for the over-identified, self-judgment, and isolation categories (3.26 ± 0.52, 3.22 ± 0.49, and 3.19 ± 0.53, respectively).

As shown in Table 4, the majority of respondents (83%) had a moderate mean score in the spiritual well-

Table 2 Self-reported participant addiction data (*N* = 100)

Addiction-associated data		*n*	%
Onset of the disease categories	2005 or before	11	11.0%
	2006–2010	34	34.0%
	2011–2015	14	14.0%
	2016–2020	41	41.0%
Duration of psychotherapy	1–3 months	14	14.0%
	3–6 months	80	80.0%
	More than 6 months	6	6.0%
Number of admissions to the psychiatric hospital	1 time	30	30.0%
	2 times	41	41.0%
	3 times	17	17.0%
	4 times or more	12	12.0%
	M ± SD	2.96 ± 3.79	
Presence of mental illness in the family	No	92	92.0%
	Yes	8	8.0%
Type of narcotic	Tramadol	5	5.0%
	Strox	17	17.0%
	Heroin	56	56.0%
	Cannabis	17	17.0%
	Benzodiazepine	5	5.0%
Family usage of narcotics	Yes	0	0.0%
	No	100	100.0%

n = frequency, % = percent, M= Mean, SD = standard deviation

Table 3 Distribution and the mean of the self-compassion scale and its subscales (*N* = 100)

Self-Compassion Scale		*n*	%	M ± SD
Self-kindness subscale	Low	22	22.0%	2.74 ± 0.50
	Moderate	66	66.0%	
	High	12	12.0%	
Self-judgment subscale	Low	3	3.0%	3.22 ± 0.49
	Moderate	52	52.0%	
	High	45	45.0%	
Common humanity subscale	Low	18	18.0%	2.79 ± 0.60
	Moderate	43	43.0%	
	High	11	11.0%	
Isolation subscale	Low	1	1.0%	3.19 ± 0.53
	Moderate	52	52.0%	
	High	31	31.0%	
Mindfulness subscale	Low	14	14.0%	2.83 ± 0.53
	Moderate	72	72.0%	
	High	14	14.0%	
Over-identified subscale	Low	5	5.0%	3.26 ± 0.52
	Moderate	59	59.0%	
	High	36	36.0%	
Total self-compassion scale	Low	1	1.0%	3.03 ± 0.18
	Moderate	92	92.0%	
	High	7	7.0%	

Low 1.00–2.33, moderate > 2.33–3.66, high > 3.66–5.00
n = frequency, % = percent, M = mean, SD = standard deviation

Table 4 Distribution and the mean of the spiritual well-being scale and its subscales (*N* = 100)

Spirituality Scale		n	%	M ± SD
Religious well-being	Low	11	11.0%	3.67 ± 0.87
	Moderate	62	62.0%	
	High	27	27.0%	
Existential well-being	Low	0	0.0%	3.85 ± 0.52
	Moderate	81	81.0%	
	High	19	19.0%	
Total spiritual well-being	Low	0	0.0%	3.76 ± 0.56
	Moderate	83	83.0%	
	High	17	17.0%	

Low 1.00–2.66, moderate > 2.66–4.33, high > 4.33-6.00.
n = frequency, % = percent, M = mean, SD = standard deviation

Table 5 Self-reported drug craving of participants

Drug craving		*n*	%
The intensity of your feelings of addiction/the extent of your desire to take narcotics during the past 24 h	Never	44	44.0%
	Mild	26	26.0%
	Moderate	22	22.0%
	Strong	5	5.0%
	Very strong	3	3.0%
Addiction rate/how many times you wanted to take narcotics during the past 24 h	Never	50	50.0%
	Probably not	22	22.0%
	Many times,	18	18.0%
	Regularly	8	8.0%
	Continuously	2	2.0%
The length of time you wanted to take narcotics during the past 24 h	Never	49	49.0%
	Very short period	22	22.0%
	Short period	16	16.0%
	To some extent	10	10.0%
	Long time	3	3.0%
Mention the number of times you wanted to take narcotics	None	59	59.0%
	One time	17	17.0%
	Two times	23	23.0%

n = frequency, % = percent

Table 6 Difference in the mean scores of Self-Compassion Scale based on the sociodemographic and clinical data (*N* = 100)

Personal characteristics		Mean rank	Test	*P* value
Age category	20-29	50.6	Kruskal-Wallis test Chi-square = 5.441	0.066
	30-39	45.9		
	40 and over	70.1		
Gender	Male	50	Mann-Whitney *U* = 96	0.338
	Female	67		
Marital status	Single	53	Mann-Whitney *U* = 371	0.096
	Married	64		
Occupation	No Job	50	Mann-Whitney *U* = 927	0.65
	Has a Job	53		
Education	Illiterate	49	Kruskal-Wallis test Chi-square = 2.085	0.721
	Primary school	35		
	Secondary school	49		
	High school	51		
	University education	55		
Place of residence	Suburb	54	Mann-Whitney *U* = 1071	0.366
	City	49		
Income	Not Sufficient	52	Mann-Whitney U = 1153	0.514
	Sufficient	48		
Presence of mental illness in the family	No	51	Mann-Whitney *U* = 284	0.286
	Yes	42		
Type of narcotic	Tramadol	62	Kruskal-Wallis test Chi-square = 1.595	0.810
	Strox	49		
	Heroin	49		
	Cannabis	54		
	Benzodiazepine	46		

being scale (mean score: 3.76 ± 0.56 out of 6 on the Likert scale) and in both the religious and existential well-being subscales (mean scores: 3.67 ± 0.87 and 3.85 ± 0.52, respectively).

Regarding drug craving in the participants, Table 5 shows that more than two-thirds (70%) of the participants reported that they had none or mild feelings of intensity and desire to take narcotics during the past 24 h. They had a minimal addiction rate (10%) as indicated by the times in which the participants indicated continuously or regularly wanting to take narcotics in the past 24 h, and they had none or relatively very short desire to take narcotics period during the past 24 h (71%). The reported frequency in which the participants wanted to take narcotics was zero or just one time during the last 24 h (76%).

The sample of participants was neither large nor random; however, the findings of the nonparametric tests revealed no significant differences in mean scores of Self-Compassion Scale (Table 6), Spiritual Well-Being Scale (Table 7), and Craving Scale (Table 8) based on the participants' sociodemographic characteristics and some addiction associated clinical data.

Concerning the correlation among the self-compassion scale and its subscales for participants, Table 9 indicates a positive correlation between all self-compassion subscales and the self-compassion main scale, with a significant correlation found with the self-judgment, isolation, mindfulness, and over-identified subscales. Also, there were various positive and negative significant correlations among the self-compassion subscales, reflecting that half of the subscales (3 out of 6) were inverted in coding since they consisted of negative statements ($p < 0.01$).

Table 10 shows the correlations between the spiritual well-being scale and its subscales. As shown, there was a significant positive correlation between the spiritual well-being scale and both the religious well-being and existential well-being subscales ($p < 0.001$). Additionally, there was a significant positive correlation between the religious well-being and existential well-being subscales ($p < 0.05$).

Table 7 Difference in the mean scores of Spiritual Well-Being Scale based on the sociodemographic and clinical data ($N = 100$)

Personal characteristics		Mean rank	Test	*P* value
Age category	20–29	45	Kruskal-Wallis test Chi-square = 3.971	0.137
	30–39	57		
	40 and over	48		
Gender	Male	50	Mann-Whitney $U = 106$	0.450
	Female	42		
Marital status	Single	53	Mann-Whitney $U = 440$	0.060
	Married	42		
Occupation	No job	50	Mann-Whitney $U = 965$	0.877
	Has a job	49		
Education	Illiterate	36	Kruskal-Wallis test Chi-square = 6.895	0.142
	Primary school	40		
	Secondary school	47		
	High school	50		
	University education	52		
Place of residence	Suburb	50	Mann-Whitney $U = 1182$	0.899
	City	51		
Income	Not Sufficient	42	Mann-Whitney $U = 857$	0.314
	Sufficient	51		
Presence of mental illness in the family	No	49	Mann-Whitney $U = 289.5$	0.318
	Yes	60		
Type of narcotic	Tramadol	33	Kruskal-Wallis test Chi-square = 9.373	0.058
	Strox	47		
	Heroin	57		
	Cannabis	40		
	Benzodiazepine	45		

Table 8 Difference in the mean scores of Craving Scale based on the sociodemographic and clinical data ($N = 100$)

Personal characteristics		Mean rank	Test	*P* value
Age category	20-29	53	Kruskal-Wallis test Chi-square = 1.525	0.466
	30-39	46		
	40 and over	53		
Gender	Male	50	Mann-Whitney U = 128	0.746
	Female	56		
Marital status	Single	55	Mann-Whitney U = 350	0.078
	Married	69		
Occupation	No Job	48	Mann-Whitney U = 793	0.122
	Has a Job	57		
Education	Illiterate	55	Kruskal-Wallis test Chi-square = 4.395	0.355
	Primary school	57		
	Secondary school	52		
	High school	48		
	University education	46		
Place of residence	Suburb	53	Mann-Whitney U = 1124	0.589
	City	49		
Income	Not Sufficient	56	Mann-Whitney U = 848	0.224
	Sufficient	47		
Presence of mental illness in the family	No	51	Mann-Whitney U = 301	0.377
	Yes	44		
Type of narcotic	Tramadol	64	Kruskal-Wallis test Chi-square = 8.067	0.089
	Strox	54		
	Heroin	49		
	Cannabis	59		
	Benzodiazepine	50		

For the correlation between the self-compassion scale, spiritual well-being scale, and the drug craving scale for participants, Table 11 indicated a significant inverse correlation between the drug craving scale and both the self-compassion scale ($p < 0.05$) and the spiritual well-being scale ($p < 0.001$). However, there was a non-significant positive correlation between the self-compassion scale and the spiritual well-being scale ($p = 0.613$).

Discussion

Craving is a key addiction trait that predicts treatment outcomes and has been added as a criterion for diagnosing substance use disorders in the DSM-5, as cited by Preston et al. [23]. Understanding the factors that influence cravings will enhance the outcome of treatment and help patients avoid relapse; these factors include self-compassion and spiritual well-being. Hence, this study aimed to explore the relationship between self-compassion, spiritual well-being, and craving. In this study, more than half of the study participants (55%) were young people (20–29 years) with a mean age of 29.21 ± 7.49 years. More than half (56%) were dependent on heroin and the majority of participants have received 3–6 months of psychotherapy.

These results were consistent with Mahjoub et al. [24] who reported that drug dependence was significantly higher among individuals between the ages of 18 and 25 years (44%) compared to individuals between the ages of 26 and 40. For heroin users, the average age when using heroin for the first time was 19.67 years. Kumar et al. [25] reported that 7% of heroin users began using heroin before the age of 16 years, and about 83% of them began using heroin between the ages of 16 and 24 years.

Our results showed that cravings and self-compassion have a strong negative correlation. These results are consistent with other scientific studies by Gilbert [26], Gilbert [27], Iskandar, Akin [28] and Neff et al. [29], Raes [30], Shapira and Mongrain [31], and Shapiro et al. [32]. These studies reported that cravings were negatively related to self-compassion and were positively related to self-judgment. Likewise, Gilbert [27] acknowledged that few

Table 9 Correlations among the self-compassion scale and its subscales for participants

		Self-kindness subscale	Self-judgment subscale	Common humanity subscale	Isolation subscale	Mindfulness subscale	Over-identified subscale	Self-compassion scale
Self-kindness subscale	Pearson correlation	1	− 0.347**	0.186	− 0.374**	0.110	− 0.138	0.051
	Sig. (2-tailed)		0.000	0.064	0.000	0.275	0.171	0.614
Self-judgment subscale	Pearson correlation	− 0.347**	1	− 0.266**	0.190	− 0.109	0.010	0.350**
	Sig. (2-tailed)	0.000		0.008	0.058	0.279	0.918	0.000
Common humanity subscale	Pearson correlation	0.186	− 0.266**	1	− 0.263**	− 0.023	− 0.057	0.108
	Sig. (2-tailed)	0.064	0.008		0.008	0.819	0.576	0.283
Isolation subscale	Pearson correlation	− 0.374**	0.190	− 0.263**	1	− 0.192	0.382**	0.579**
	Sig. (2-tailed)	0.000	0.058	0.008		0.056	0.000	0.000
Mindfulness subscale	Pearson correlation	0.110	− 0.109	− 0.023	− 0.192	1	− 0.016	0.283**
	Sig. (2-tailed)	0.275	0.279	0.819	0.056		0.875	0.004
Over-identified subscale	Pearson correlation	− 0.138	0.010	− 0.057	0.382**	− 0.016	1	0.599**
	Sig. (2-tailed)	0.171	0.918	0.576	0.000	0.875		0.000
Self-compassion scale	Pearson correlation	0.051	0.350**	0.108	0.579**	0.283**	0.599**	1
	Sig. (2-tailed)	0.614	0.000	0.283	0.000	0.004	0.000	

**Correlation is significant at the 0.01 level (2-tailed).

Table 10 Correlation between the spiritual well-being scale and its subscales for participants

		Religious well-being subscale	Existential well-being subscale	Total spiritual scale
Religious well-being subscale	Pearson correlation	1	0.252*	0.893**
	Sig. (2-tailed)		0.011	0.000
Existential well-being subscale	Pearson correlation	0.252*	1	0.660**
	Sig. (2-tailed)	0.011		0.000
Total spiritual scale	Pearson correlation	0.893**	0.660**	1
	Sig. (2-tailed)	0.000	0.000	

*Correlation is significant at the 0.05 level (2-tailed).
**Correlation is significant at the 0.01 level (2-tailed).

studies have explored the relationships between compassion and drug use (e.g., Rendon, 2006; Brooks et al., 2012).

Rendon [33] identified a significant negative association between alcohol and self-compassion for 300 undergraduate psychology students. Alcohol abuse was negatively associated with self-esteem, self-compassion, and psychological symptoms [34]. Phelps et al. [35] additionally, found that self-compassion can be associated with substance use disorder and risk factors that lead to addiction.

Our findings showed that there was a significant negative correlation between drug cravings and spiritual well-being among participants. These results were consistent with Heinz et al. [36] who reported that spirituality was an important and independent predictor of recovery and /or improvement in treatment outcome indicators. Spirituality also positively correlated with the length of sobriety, while adherence to a higher strength can reduce the severity of recurring episodes. In retrospective studies, recovering addicts frequently mentioned spirituality and religiosity as important components of recovery efforts that were helpful in maintaining the changes made during treatment.

Weiss-Ogden [37] has demonstrated a link between spiritual well-being and other dimensions of well-being, including recovery from illness, treatment of psychological symptoms, and maintenance of recovery from substance use disorders (SUDs).

Our findings revealed that the majority of participants had a moderate level of self-compassion and spiritual well-being, with the highest level of self-compassion and well-being for over-identification, self-judgment, and isolation. Likewise, Phelps et al. [35] found that the risk of developing SUD was associated with the sub-scale of isolation and self-compassion. This is consistent with previous studies in which intimate relationships were more complex for individuals with low self-compassion [38].

Basharpur et al. [39] reported that people with negative self-judgment constantly engage in rumination and self-criticism, focusing on the negative aspects that increase craving in drug-dependent people. In short, self-compassion can protect individuals from negative consequences. Participants with low SUDs risk also had higher degrees of mindfulness and lower degrees of autonomy compared to their high-risk counterparts. This aligns with the belief that people with strong self-compassion should use inner skills to deal with pain without self-judgment, such as empathy, awareness, tolerance, and forgiveness [40]. There is currently evidence that individuals' perception, a feature of self-compassion, helps protect against relapse [41].

Brooks et al. [34] found that sample participants scored significantly lower on common humanity, self-kindness, and mindfulness compared to the general population. Excessive self-identification, perceived isolation, and self-judgment were also significantly higher in participants than standard scores in the general population.

Table 11 Correlation between the self-compassion scale, spiritual well-being scale, and drug craving scale for participants

		Self-compassion scale	Spiritual well-being scale	Drug craving scale
Self-compassion scale	Pearson correlation	1	0.051	− 0.210*
	Sig. (2-tailed)		0.613	0.036
Spiritual well-being scale	Pearson correlation	0.051	1	− 0.631**
	Sig. (2-tailed)	0.613		0.000
Drug craving scale	Pearson correlation	− 0.210*	− 0.631**	1
	Sig. (2-tailed)	0.036	0.000	

*Correlation is significant at the 0.05 level (2-tailed)
**Correlation is significant at the 0.01 level (2-tailed)

Conclusions

In conclusion, more than half of individuals with drug addiction were young, with the vast majority of them being single males with no job or sufficient income. The vast majority of participants had a moderate level of self-compassion as reflected on the self-compassion scale. The majority of respondents also had a moderate spiritual well-being level in terms of both religious and existential well-being, as shown using the spiritual well-being scale. Regarding drug craving, more than two-thirds of the participants reported that they had no or just mild addiction feelings intensity, or desire to take narcotics during the past 24 h.

There was a positive correlation between all self-compassion subscales and the self-compassion main scale. Additionally, there was a significant positive correlation between the spiritual well-being scale and both the religious well-being and the existential well-being subscales. In contrast, there was a significant negative correlation between the drug craving scale and both the self-compassion scale and the spiritual well-being scale.

Recommendations

The use of national-wide orientation or educational programs about drug addiction and the negative consequences of addiction utilizing social and mass media should be a high priority, especially for the young population. Similarly, the government is responsible to make job opportunities available for individuals, which may have a positive effect in reducing the chances of drug addiction.

Focusing on demonstrating the importance of life to people with substance use disorders and for concerned people or family, self-love, meaning-of-life awareness, and socialization are highly recommended. All of these factors will help individuals improve their self-esteem and self-compassion. Focusing on developing religious practices and existential well-being is likely to improve people's spiritual well-being as well. Improving individuals' spiritual well-being and enhancing self-compassion will have significant effects on reducing cravings for drug abuse and addiction.

Limitations

The use of cross-sectional research design and convenience sampling techniques are not ideal research designs. The use of in-depth longitudinal design and random sampling techniques, including participants from more hospitals, is highly recommended for future research.

Abbreviations

BSCS: Brief Substance Craving Scale; SCS: Self-Compassion Scale; SUDs: Substance use disorders; SWBS: Spiritual Well-Being Scale

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Authors' contributions

MAS is the corresponding author and contributed to the design and submission of the research. SAH collected the data and contributed to the implementation. SMT contributed to the analysis of the results and the writing of the manuscript. All authors participated in the preparation, editing, and approval of the final manuscript.

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Availability of data and materials

The present study data sets are available from the corresponding author on reasonable request.

Declarations

Ethics approval and consent to participate

All ethical considerations related to scientific research in humans have been taken into account in accordance with the Declaration of Helsinki [22]. Written consent was obtained from all participants in the current study; also, the research ethics committee at the Faculty of Nursing at Mansoura University approved to conduct the current research (Ethics committee approval, Ref. No. P. 0210).

Consent for publication

Not applicable.

Competing interests

The researchers declare that there are no conflicts of interest associated with this research work.

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