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The Effect of Expressive Disclosure Writing on Self-Stigma, Depression, and Anxiety among Drug Users in a Governmental Hospital in Egypt: A Non-Randomized Controlled Trial

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Abstract

Background: Stigma and negative emotions among drug using population are intense to a degree that can prevent help seeking, hinder recovery, and accelerate relapse.

Aim: This study examined the effect of Expressive Disclosure Writing (EDW) on self-stigma and depression/anxiety symptoms among inpatient drug users in a governmental hospital, in Alexandria, Egypt.

Methods: In this controlled trial 165 participants (158 males, 7 females, M_{age} = 32.3 years, age range: 19-60 years) were assigned to an intervention group that comprised two didactic sessions plus five 15-minutes sessions of EDW or to a control group. Self-stigma and depression/anxiety were measured at baseline and immediately posttreatment. T-test and Analysis of Covariance (ANCOVA) adjusting for baseline differences were used to detect pre to posttreatment group differences.

Results: Crude analysis revealed a significant effect of EDW on scores of applying stigma to self. Adjusted analysis indicated no group differences at posttreatment for self-stigma or depression/anxiety scores.

Conclusion: It is not clear that EDW is effective for self-stigma or depression/anxiety among inpatient drug users. Further randomized research using a larger sample is needed. [Trial registered as: AEARCTR-0001972 and UMIN000025982].

Keywords

Anxiety, Depression, Expressive disclosure writing, Psychological distress, Stress, Self-stigma, Substance related disorders

Introduction

Worldwide, illicit drugs strike more than 5% of the 15-64 years old population [1]. Egypt reports greater than the double of that rate, 12.6% [2]. The spread of illicit drugs among youths greatly threatens the country's public health and social security [3-5]. Grimly, drug victims endorse stress out of the physiological effect of drugs [6], as well as the rapid progression, chronicity, and high relapse of the disorder [7,8]. Further, they struggle with a trail of related problems such as contacting serious infections, financial difficulties, disturbed relations, violence, criminality and incarceration, poor quality of life, homelessness and the like. Such stressors increase emotional strain and risk of suicide in this group [9,10]. Likewise, the outspread stigma is an additional drain [11,12].

Drug users confront a range of negative views and discrimination that are not only inflicted by the general public, but also by health professionals, families, friends, and even other heavy users [13-15]. Hence, sufferers face extra difficulty on a daily basis being denied various necessary life opportunities e.g., access to education, proper work/income, housing, health care or insurance services, social networks and support [13,14]. Self-stigma stems

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as drug users internalize and apply public negative views to themselves, develop a feeling of shame related to identification with a stigmatized group, fear and anticipate discrimination [16,17]. Since drug users are socially constrained, they do not express distress. Thus, negative self-thoughts and feelings go suppressed and unspoken of [18-20]. Such inhibition invokes a succession of rumination, intrusion, and feelings of depression and anxiety [18-22].

Severe depression and anxiety symptoms are related to common stigma consequences such as poor quality of life, poor community adjustment, and low self-esteem [13,15,23]. In fact, depression, anxiety, and Post-Traumatic Stress Disorder (PTSD) are highly co-morbid psychopathologies that are endured by up to 4/5 of the drug users [24]. Such co-morbidity heightens the level of disability, and negatively affects help seeking behavior, response to treatment, and relapse [24-27]. Drug users with co-morbidities get more help from interventions that involve psychological health as well as coping with symptoms and social situations [28].

There is a paucity of research that applies psychotherapeutic management to drugs self-stigma. A systematic review by Livingston, et al. [29] found only a single study attempting to alleviate drug use self-stigma. In that study, Luoma, et al. [16] reported some effect of Acceptance and Commitment Therapy (ACT) on shame and self-esteem. However, that study lacked control comparisons. More, ACT is a rather costly manipulation [30]. Research shows that narratives of drug users reflect their pain and suffering [31], help them find meaning of their experiences, and discover ways to master their disease [32,33]. Expressive Disclosure Writing (EDW) is a cheap and self-help narrative therapy. It involves expressing the deepest thoughts and feelings related to unpleasant and traumatic experiences through writing for 15-30 minutes on 3 to 4 consecutive days or weeks [34]. Research on gay-related stigma denotes some potentials of EDW for self-stigma [35,36].

Stigma constitutes a complex of stereotypes and distressing self-evaluations such as being untrustworthy and unreliable as well as multiple stressful experiences such as repeated failure of quitting attempts, poor physical and psychological health, wrecked relationships, and being rejected and dehumanized [17,37]. While paradoxical effects can ensue from direct efforts of CBT to abolish negative stereotypes [38], EDW implicitly allows individuals to get a meaning of their troublesome experiences [39,40]. Expressing negative thoughts and emotions in writing permits exposure by re-encountering negative experiences again. Writings that produce coherent narratives involve cognitive restructuring, which occurs when experiences get integrated into one's conscious au-

tobiographical memory [41,42]. As a result, re-organization of defeating self-evaluations and self-schema (e.g., in this case the one pertaining to stigma) takes place, and persons get a sense of perceived control over their negative life experiences [40,43].

In reality, EDW has been used to address drinking intentions, depressive and post-traumatic symptoms among drug users, but reports are inconsistent [7,39,44-46]. Further, all those studies come from western countries.

To bridge the gap, the current study employed a quasi-experimental design to examine effects of EDW on self-stigma and depression/anxiety symptoms among users of illicit drugs. Drawing from the literature on EDW for other stigmatized conditions, it was expected that drug users exposed to EDW should exhibit lower levels of self-stigma and depression/anxiety symptoms compared with Treatment as Usual (TAU) controls.

Methods

Design

This non-randomized controlled study examined the effect of EDW on self-stigma and depressive/anxiety symptoms compared with TAU. Because of lack of funds, the intervention and data collection could be conducted by 1 experimenter. Therefore, allocation concealment and researcher blinding, basic to randomized trials, were not plausible. It was not possible to blind participants either since, for financial reasons, controls were not offered any placebo treatment. Thus, a historical quasi-experimental research design was a sound choice. Data were collected from members of the control group first, and then EDW was delivered for the intervention group.

Study setting

The study took place between January 2014 and May 2015 at the inpatient substance abuse treatment unit of the main governmental psychiatric hospital in Alexandria, Egypt. The educational and socio-economic levels of admitted clients are predominantly low. Unit services include self-help groups based on Narcotic Anonymous (NA) model and manual, individual counseling, reflection, psychodrama, and sport therapy. Following detoxification, treatment takes place over the course of 3 months of stay. After discharge, patients can join the day care program of the unit and take part in therapeutic activities along with their hospitalized mates. The day schedule involves activities from 7 am to 9 pm with 2 hours spare time from 1 to 3 pm for lunch, prayer, and napping. Data collection and intervention took place during that spare time.

Sample

For all available residents, records were checked to

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Table 1: Baseline sociodemographic and clinical characteristics of participants in both groups.

Variables	EDW (N = 87)		Control (N = 78)	
	N (%)	M (SD)	N (%)	M (SD)
Age (years)		32.9 (6.7)		31.7 (6.7)
Gender				
Males	87 (100.0)		71 (91.0)	
Females	0 (0.0)		7 (9.0)	
Marital status				
Single	40 (46.0)		42 (53.8)	
Married	36 (41.4)		25 (32.1)	
Divorced/Widow	11 (12.6)		11 (14.1)	
Educational level				
Primary	21 (24.1)		31 (39.7)	
Preparatory	14 (16.1)		5 (6.4)	
Secondary	31 (35.6)		26 (33.3)	
Associate degree	7 (8.0)		5 (6.4)	
University or higher	14 (16.1)		11 (14.1)	
Occupation				
Professional work	8 (9.2)		4 (5.1)	
Commercial work	4 (4.6)		4 (5.1)	
Occupational work	57 (65.5)		47 (60.3)	
Unemployed	15 (17.2)		18 (23.1)	
Student/House wife/others	3 (3.4)		5 (6.4)	
Financial status[†]				
Not enough	23 (26.7)		25 (32.1)	
Enough	56 (65.1)		52 (66.7)	
More than enough	7 (8.1)		1 (1.3)	
Substances abused[‡]				
Cannabis	66 (75.9)		55 (70.5)	
Bango	19 (21.8)		22 (28.2)	
Heroin	64 (73.6)		63 (80.8)	
Chemical preparations	69 (79.3)		63 (80.8)	
Alcohol	31 (35.6)		35 (44.9)	
Others	15 (17.2)		16 (20.5)	
Duration of abuse (years)		14.8 (10.0)		13.7 (7.4)
No of quitting trials[§]		13.3 (23.3)		13.8 (15.8)
No of hospital admission		3.5 (4.1)		4.4 (5.4)
Time period after last admission (days)		20.4 (9.9)		62.4 (72.0)

EDW = Expressive Disclosure Writing; [†]One respondent in the EDW group had a missing value; [‡]This was a multiple response question where individuals may endorse more than one choice; [§]One respondent in the control group had a missing value.

identify eligible participants. Participants were included if they were 18 years or older, detoxified, and could read and write. The only exclusion criterion was having psychotic disorders and suicidal ideation. The sample comprised 165 participants (158 males, 7 females, M_{age} = 32.3 years, age range: 19-60 years). First, 78 patients were allocated to the control group. Given the logistic constraints and that the researcher was allowed to be available at the unit for only 2 hours/day, we had to stop recruitment of controls. Then, other new 87 participants were allocated to the study group. In other words, both groups were not held simultaneously at the same time; therefore, no allocation ratio was used.

There was baseline significant statistical difference between the intervention and control groups as related to gender, marital status, and the number of days since hospital admission (Table 1 for demographic and clinical characteristics). Meanwhile, completers involved in the final analysis (43 males, 2 females, M_{age} = 32.8 years, age range: 19-20 years) had no baseline sociodemographic or clinical group differences (Table 2). No significant baseline differences were found between dropouts and completers of the control group except for the number of days since hospital admission t(75.28) = 2.85, p = 0.006, Cohen's d = 0.71. Those included in the final analysis in the EDW group had significantly lower pretest scores of applying stigma to oneself than those excluded from the analysis t(44.00) = 3.387, p = 0.001, Cohen's d = 0.86.

Ethics

A short preliminary individual session was held with

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Table 2: Baseline socio-demographic and clinical characteristics, SSAD and DASS-21 for those included in the final analysis in both groups.

Variables	EDW (N = 22)		Control (N = 23)	
	N (%)	M (SD)	N (%)	M (SD)
Age (years)		34.1 (8.7)		31.6 (6.6)
Gender				
Males	22 (100.0)		21 (91.3)	
Females	0 (0.0)		2 (8.7)	
Marital status				
Single	11 (50.0)		12 (52.2)	
Married	7 (31.8)		8 (34.8)	
Divorced/Widow	4 (18.2)		3 (13.0)	
Educational level				
Primary	4 (18.2)		8 (34.8)	
Preparatory	3 (13.6)		1 (4.3)	
Secondary	10 (45.5)		8 (34.8)	
Associate degree	2 (9.1)		3 (13.0)	
University or higher	3 (13.6)		3 (13.0)	
Occupation				
Student/House wife	0 (0.0)		1 (4.3)	
Professional work	4 (18.2)		1 (4.3)	
Commercial work	1 (4.5)		2 (8.7)	
Occupational work	12 (54.5)		12 (52.2)	
Unemployed	5 (22.7)		7 (30.4)	
Financial status				
Not enough	7 (31.8)		8 (34.8)	
Enough	13 (59.1)		15 (65.2)	
More than enough	2 (9.1)		0 (0.0)	
Duration of abuse (years)		17.1 (8.5)		13.8 (6.0)
No of quitting trials		13.8 (14.2)		11.7 (8.3)
No of hospital admission		3.2 (2.5)		4.0 (3.3)
Time period after last admission (days)		21.7 (12.6)		35.8 (36.7)
Scores of SSAD				
Public stigma perception		66.1 (8.3)		62.7 (5.9)
Agreeing to Public stigma		62.8 (8.8)		60.0 (12.7)
Applying stigma to oneself		37.1 (8.9)		47.0 (13.1)
Stigma effect on self-concept		36.8 (11.5)		43.0 (14.0)
Scores of DASS- 21				
Depression		6.9 (4.9)		9.7 (6.2)
Anxiety		7.2 (5.3)		9.1 (8.3)
Stress		8.9 (3.9)		10.6 (4.5)
Overall DASS-21 score		23.0 (10.6)		29.4 (17.5)

Note: EDW = Expressive Disclosure Writing; SSAD = Self Stigma of Alcohol Dependence scale; DASS-21 = Depression, Anxiety and Stress 21-items scale.

potential participants the day before pretest. Details of the study were discussed with participants. They were ensured about voluntary participation and confidentiality of their reports. Informed consents were obtained afterwards. The study was approved by the University of Alexandria Committee for Research Ethics and by The General Secretariat of Mental Health in the Egyptian Ministry of Health.

Intervention

Participants in the study group received intervention on 7 consecutive days in 2 parts. Both parts were deliv-

ered by a PhD student psychiatric nurse. Part I comprised a CBT psycho-education component provided in two 60-minutes group sessions. It was a preparation for the EDW phase. It aimed to help participants be more able to express thoughts and feelings of traumatic life experiences. Through power point presentations and handouts, participants were introduced information related to components of the mind, interactions between thoughts and emotions, effects of negative emotions and thoughts on human behaviors, decisions, and mood. It included training on how to identify and name ones' dysfunctional thoughts and negative feelings, how to

deal with defensiveness, and how to self-disclose through EDW. In the second session, participants rehearsed EDW of a recent traumatic experience for 10 minutes. Emphasis was on thoughts, emotions, and aspects of the event that were never discussed before. The researcher discussed with the group some of these writings. Subsequently, participants received advice on how to apply more effective writing skills.

Part II comprised 15-minutes sessions of EDW on 5 consecutive days. Before the start of each session, Pennebaker's writing instructions were read loudly to participants [47].

For the next five days, I would like you to write about your very deepest thoughts and feelings about the most traumatic experience of your entire life. In your writing, I'd like you to really let go and explore your very deepest emotions and thoughts. You might tie your topic to your relationships with others, including parents, lovers, friends, or relatives, to your past, your present, or your future, or to who you have been, who you will be, or who you are now. You may write about the same general issues or experiences on all days of writing or on different traumas each day. If you have finished by the end of the time, try to consider the causes and consequences of that experience as well as barriers to resolution and your thoughts and feelings about it. All of your writing will be completely confidential.

Participants were told not to write names on their essays. At the end of writing sessions, most writings were collected and kept by the researcher (some patients refused to hand their diaries). Sessions were administered at a lecture/training room at the unit or at the visiting area when the lecture room was not available. Free drinks and cookies were offered, and smoking was allowed during sessions to involve as many patients as possible.

Outcome measures

Self-Stigma: Self-Stigma in Alcohol Dependence Scale (SSAD) [17] was used to measure self-stigma, the primary outcome. This scale consists of 4 subscales that assess 1) Perceptions of negative public beliefs and prejudices of drug users; 2) Level of agreement that public beliefs are true; 3) Level of applying stigma beliefs to oneself; and 4) Perceiving harm to self-concept as a result of the drug use state. Each subscale is composed of 16 items. All items convey negative views of drug users e.g., being untrustworthy, less intelligent, and dirty or untidy. Items are scored on a 5-point scale (1 = strongly disagree and 5 = strongly agree). Higher scores indicate higher stigma. It was modified by substituting 'alcohol dependence' with 'drug use'.

Depression/anxiety symptoms: Depression Anxiety Stress Scale-21 (DASS-21) [48] is a 21-items self-report inventory that consists of 3 subscales comprising 7-items each. It measures depressive symptoms e.g., feeling down-hearted and blue, anxiety symptoms e.g., feeling close to panic, and general stress symptoms e.g., tendency to over-react to situations. Items are scored on a 4-point scale (0 = did not apply to me at all and 3 = applied to me very much). Higher scores indicate severer symptoms. The literature indicates sound psychometrics of the original version of the scale [49,50].

Scales were translated into Arabic. Back translation to English was done by an independent expert. Content validity was examined by 3 experts in the field of psychiatric nursing. A pilot study was conducted in a private drug use treatment clinic. Scales were modified based on experts' recommendations and the reported pilot problems. Measurements took place at baseline and immediately posttreatment, so the whole procedure would take place within 10 days.

Demographic and clinical characteristics: Demographic data such as age, gender, marital status, educational level, occupation, and income were assessed along with a range of clinical data such as types of abused substance, duration of abuse, quitting trials, previous hospital admission, and date of last admission.

Statistical analysis

Normal distribution of continuous variables was checked, and we set alpha to 0.001. Raw data were used in the analysis. Descriptive statistics were conducted for clinical and demographic characteristics. T-test and Chi square test were used to detect baseline differences between groups. T-test was used to detect changes in mean differences from pre to posttreatment in both groups. ANCOVA test was used to control for baseline differences between participants involved in the final analysis in both groups. The analysis involved cases with complete pretreatment and posttreatment measurements. However, analysis based on multiple imputations was conducted for all cases who attended both pre and post-measurements, but results were similar. In this article we only report findings for complete cases (refer to the Supplementary Material for the results of imputed data analysis). Analysis was performed using SPSS version 22, and significance was considered at 0.05 level one-tailed. An excel calculator of effect size was used to calculate Cohen's d [51].

Results

Participants' flowchart

As displayed in the CONSORT flow diagram (Figure 1), participants were recruited from an inpatient unit (N

Figure 1: CONSORT participants' flow diagram.
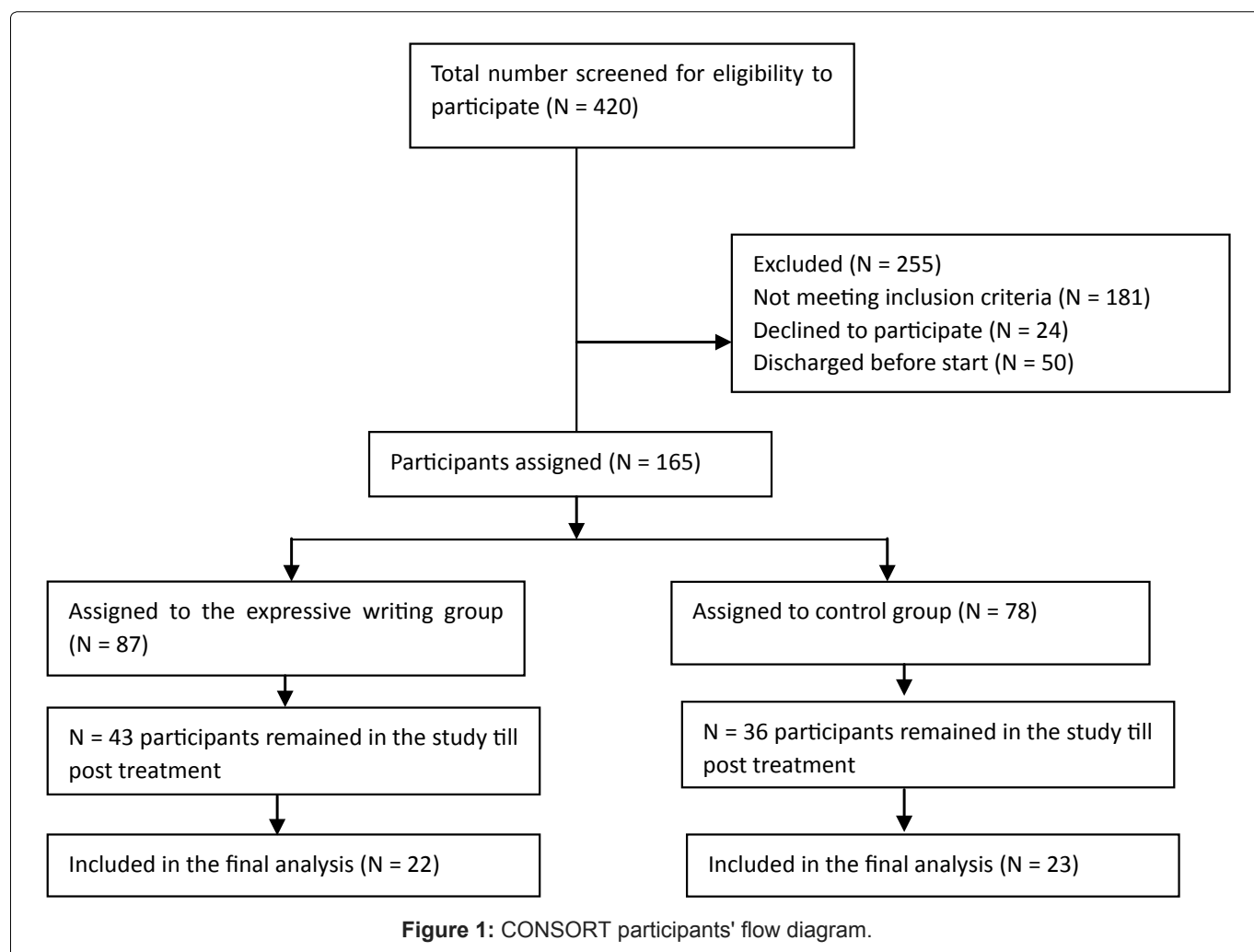
Table 3: Mean (SD) of outcome variables pre and posttreatment for the whole sample in both groups.

Variables	EDW		Control	
	Pretreatment (N = 87)	Posttreatment (N = 22)	Pretreatment (N = 78)	Posttreatment (N = 23)
Scores of SSAD				
Public stigma perception	65.0 (8.7)	66.0 (8.6)	63.3 (7.9)	64.0 (8.8)
Agreeing to Public stigma	62.5 (8.9)	64.6 (7.7)	60.8 (10.8)	61.9 (9.3)
Applying stigma to oneself	42.8 (10.3)	39.1 (10.9)	46.0 (12.4)	42.5 (10.9)
Self-concept	39.8 (11.3)	35.4 (12.4)	41.8 (13.1)	37.2 (11.9)
Scores of DASS-21				
Depression	8.4 (4.9)	6.2 (4.8)	9.6 (5.9)	7.3 (4.6)
Anxiety	7.0 (4.5)	4.7 (3.7)	8.3 (6.3)	6.4 (4.7)
Stress	9.3 (3.7)	8.1 (3.8)	10.4 (4.6)	9.0 (3.7)
Overall DASS-21 score	24.7 (10.5)	19.0 (11.1)	28.4 (15.1)	22.6 (11.4)

Note: EDW = Expressive Disclosure Writing; SSAD = Self Stigma of Alcohol Dependence scale; DASS-21 = Depression, Anxiety and Stress 21-items scale.

= 420). Of those excluded (N = 255), 181 could not read and write, 24 declined participation, and 50 were prematurely discharged before commencing participation. Out of the remaining 165 participants, 78 were assigned to the control group (16 participants were day care attendants), and 87 were assigned to the EDW group (all inpatients). The posttreatment survey was attended by 49.42% of the EDW group and 46.15% of the control group. A total of 45 participants, 25.28% of the EDW group and 28.21% of the control group were involved in the final analysis for having complete records of outcome measures both at pre and posttreatment.

Effect of EDW on outcome variables

Table 3 shows the mean and standard deviation of outcome variables at pre and posttreatment in both groups. Overall, self-stigma and depression/anxiety scores had insignificant improvement in both groups.

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Table 4: Effect of Expressive Disclosure Writing (EDW) on outcome variables.

	EDW group (N = 22)	Control group (N = 23)						
	T2-T1M (SD)	T2-T1M (SD)	SE	t	df	p	Cohen's d	95% CI
Scores of SSAD								
Public stigma perception	0.1 (7.0)	-1.3 (8.1)	2.25	-0.622	42.6	0.26	0.18	-5.93 to 3.14
Agreeing to Public stigma	-1.9 (7.2)	-1.8 (11.6)	2.85	0.013	36.96	0.49	-0.01	-5.74 to 5.82
Applying stigma to oneself	-2.0 (7.5)	4.6 (13.5)	3.23	2.044	34.71	0.02*	-0.6	0.04 to 13.17
Self-concept	1.5 (10.6)	5.9 (9.9)	3.06	1.443	42.41	0.08	-0.42	-1.76 to 10.59
Scores of DASS-21								
Depression	0.68 (4.0)	2.5 (3.9)	1.18	1.524	42.69	0.07	-0.45	-0.58 to 4.17
Anxiety	2.5 (5.8)	2.7 (6.6)	1.85	0.154	42.63	0.44	-0.05	-3.45 to 4.02
Stress	0.8 (4.0)	1.6 (3.5)	1.12	0.745	41.95	0.23	-0.22	-1.43 to 3.19
Overall DASS-21 score	3.9 (10.4)	6.8 (11.4)	3.25	0.897	42.88	0.19	-0.27	-3.64 to 9.47

Note: EDW = Expressive Disclosure Writing; SSAD = Self Stigma of Alcohol Dependence scale; DASS-21 = Depression, Anxiety and Stress 21-items scale, T1 = Pretreatment, T2 = Posttreatment, T2-T1 = pre to posttreatment score difference,*p < 0.05 (one-tailed).

There was no significant baseline difference between both groups concerning outcome variables except for scores of apply stigma to self that were significantly lower in the EDW group than in the control group. Table 4 shows the effect of EDW on outcome variables based on independent-samples t-test as well as effect size (Cohen's d). Crude analysis of both groups showed that none of the self-stigma subscales was significantly affected by EDW except for scores of applying stigma to self which significantly decreased from pre to posttreatment in the EDW group, and the effect size was medium (Cohen's d = -0.6). ANCOVA, controlling for baseline scores, did not reveal significant group differences at posttreatment $F(1, 42) = 0.262$, $p = 0.612$, and Cohen's d = 0.16. Similarly, there was no significant observed pre to posttreatment effect of EDW on scores of depression, anxiety, stress, or the total psychological distress. All effect sizes were small to moderate; Cohen's d ranged from -0.03 to -0.45.

Discussion

The current study indicated a significant effect of EDW on SSAD scores of applying stigma to self; however, the effect became non-significant after adjusting for baseline scores. Contrary to expectations, the present study failed to show therapeutic effects of EDW on self-stigma and depression/anxiety symptoms among drug users. So far, this is the first study to use EDW to address self-stigma of drug use. Meanwhile, trials targeting drug use self-stigma are very scant. Inconsistent with our study, a former non-controlled study reported mixed findings for ACT where it reduced shame, internalized stigma, and self-concealment, but had no effect on perceived stigma, stigma-related rejection, believability of stigmatizing attitudes, and believability of reasons for drug use [16]. Lack of a control group might indicate that the effect of ACT may have been overestimated. However, the complex nature of self-stigma involves deeply rooted negative thoughts about oneself, which makes it slow and difficult to change [52] by time limited interventions such as EDW or ACT. Given that ACT was a group based and a therapist assisted technique, it sounds that using a group-based format of EDW that involves interactions among peers and therapists may enhance the effect of the intervention.

A relatively small number of previous studies used EDW to tackle stress related to certain stigmatized conditions such as being gay, and findings were inconsistent. In one study, placebo writing was associated with a significant decrease of HIV-related traumatic stress compared to a comprehensive program of EDW, psycho education, relaxation, meditation, and positive writing among HIV-positive methamphetamine-using gay men [53]. On the other side, EDW was effective reducing self-stigma, gay-related avoidance [36], and rejection sensitivity as well as inducing more openness about one's sexual orientation [35]. However, it should be noted that these studies come from western countries. Effects of EDW can be limited by individual traits, social constraints, and gender [54]. We further argue that Egyptians' limited levels of emotional awareness and expressivity [55] plus their low appreciation of expressing emotional vulnerability and weakness could have made use of EDW difficult. Therefore, effects of EDW for our participants were restricted. More cultural adaptation of the EDW technique is required in order to develop a useful EDW intervention.

The literature indicates inconsistent outcomes for EDW on psychological-wellbeing among drug users. Some studies reported a short lived improvement in the severity of symptoms of Post-Traumatic Stress Disorder (PTSD), depression and anxiety at posttreatment or at 2 weeks posttreatment, which all vanished at follow up [39,45]. Only one study reported improvements

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in PTSD, depression, and general psychopathology that were sustained at 3 months follow up. However, in that study participants were recruited on admission "i.e., symptoms were most acute", and they received other treatments. Thus, absence of a comparison group throws doubt on the indicated long lasting improvement [56]. On the other side, consistent with our findings, EDW had no effect on depression, stress, and anxiety at 2 weeks post writing in high risk drug using youth with street lifestyle [44]. Similarly, the profile of mood was not influenced by EDW among cocaine dependent patients in another study [7]. Even more broadly, a recent wide scale meta-analysis revealed no evidence of any effect of EDW on depression, anxiety, and physiological or biomarker-based outcomes at short or long-term follow-ups among people with long term conditions, including those with mental health problems [34].

Lack of follow up in the current study may justify the noted non-significance. Most EDW studies follow participants for at least 2 weeks since negative affect guilt, and shame arise after trauma writing [39,46] while the onset of reduction of depression or anxiety ensue later [39]. Similarly, the severity of the condition might be a barrier to expression of EDW benefits since patients were recently admitted, chronic, multiple drug users, with a history of frequent relapse. In support for this argument, a single EDW session resulted in decreased drinking intentions among undergraduate drinkers [42]; on the contrary, drinking intentions increased in those with drinking problems [46].

Conclusion

It is not clear from this study that EDW can be successful improving self-stigma and depression/anxiety symptoms among inpatient drug users. The high rate of attrition limits confidence in reports and calls treatment acceptability into questioning. Generalisability is limited to younger, low socioeconomic, and less educated Egyptian male drug users. Further randomized research using a larger sample is needed.

Limitations

Reported findings should be considered with caution owing to the limitations of the study. Because of the fact that the study targeted only literate patients, a bulky portion of the population was excluded due to illiteracy. A modest number of eligible participants remained in the study till post-measurement. Further, it might have been difficult to notarize tangible effects of EDW due to lack of randomization, including females and day care participants in the control group only, translation of scales into Arabic, which might have affected their psychometric properties.

Implications for Practice

Being the first attempt to use EDW among Egyptian drug users, this study showed feasibility of using EDW among Arabs. Taken into account that EDW is a cheap intervention and that it had some fleeting effect on scores of applying stigma to self, there is a need to identify factors that moderate the effect of EDW on stigma. Moreover, the program should be further enhanced so as to boost effects of EDW. Modifications may involve using techniques such as response training, positive writing and finding meaning in the experience of drug use, group discussions of written content, and providing support for less expressive and illiterate individuals to do it orally or symbolically (through drawing and painting). Further randomized control trials are needed to test the effectiveness of EDW on self-stigma and depression/anxiety symptoms among drug users.

Declaration of Interest

The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

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