

## THE ROLE OF EMOTION REGULATION DIFFICULTIES IN THE RELATION BETWEEN SUICIDE RISK AND THE QUALITY OF LIFE IN DEPRESSIVE PATIENTS

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**Abstract:** This research is based on existing research in the literature referring to the relationship amongst emotion regulation difficulties, quality of life, depression and suicide risk in depressed patient. The main goal of this research is to identify the role of emotion regulation difficulties in the relationship between suicide risk and quality of life in depressed patients. Data were collected using a general demographic questionnaire plus specific psychometric tests: Difficulties in emotional regulation scale (DERS-SF), Quality of life inventory (Qoli), Columbia suicide severity rating scale (C-SSRS), and Depression Anxiety Stress Scales (DASS21-R). The study included 109 participants, aged 18 – 60 years (M= 36, SD=12.75), 37 (33.9%) men and 72 (66.1%) women, 49 from a rural background (45%) and 60 from urban background (55%), 43 in the clinical group - patients with depression (39.4%) and 66 in the non-clinical group - controls (60.6%). The results reinforce all the hypotheses of the research and point out the role of emotion regulation difficulties in the relation between suicide risk and the quality of life in depressive patients. Thus, the level of depression, severity of suicide risk and emotion regulation difficulties negatively influence the quality of life. The research findings point out that emotion regulation difficulties should be taken into account when designing psychotherapy programs and protocols aiming at increasing the quality of life and reducing the risk of suicide in depressive patients.

**Keywords:** suicide risk, quality of life, depression, emotion regulation difficulties.

### INTRODUCTION

#### *Depression*

Depression is the fourth most prevalent disease worldwide. Some authors even consider that the frequency of depression is underestimated, as a very small proportion of depressive persons ask for support from mental health specialists [1].

APA dictionary of psychology [2] emphasizes that “depression is a continuum of associated disorders rather than one diagnostic entity”.

#### *Suicide risk*

According to literature, suicide is a major concern nowadays, with almost a million deaths per year by suicide worldwide [3]. One of the main objectives of the WHO in the near future is the minimization of suicide-related mortality [4].

Authors [5] state that, according to the WHO, the suicidal act is when an individual attempts to do

physical self-harm, with more or less intention to take her/his life, aware or not of her/his intentions.

According to Perrotta [6] within the clinical setting the risk of suicide is a typical variable whenever well identified psychopathology is present, such as depressive disorders, bipolar disorders, personality disorders, somatic disturbances, posttraumatic stress disorders, nutrition and sleep disorders, addiction or addictive behavior (e.g. gambling), burnout and psychotic conditions (including schizophrenia).

#### *The quality of life*

Rapaport, Clary & Fayyad [7] mention that the quality of life has many definitions and use many instruments for its assessment. The quality of life is represented by three facets: 1) as a theoretical concept submitted to conceptual defining and delimitation; 2) as an objective to be fulfilled by national programs and strategies;

According to the literature [3] as a means

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and criterion of evaluation of social performance at individual, collective, community, society and global levels [8]. Most of the definitions emphasize the fact that the patients' subjectivity should be taken into account when evaluating the quality of life.

Quality of life [9,10] has been described as an individual's subjective perception on life in the context of the culture and system of values to which they belong and in relation to their personal goals, expectations, standards and concerns.

Though the term "quality of life" makes sense for almost everybody and is tackled by several academic disciplines, its meaning has variations according to the person or group. Most definitions of the quality of life explicitly state that the assessment should take into account the patients' perception of their various life circumstances. This includes the perception of the social behavior, physical condition, daily life and work activities, economic status and the general feeling of wellbeing.

### ***Depression and suicide risk***

The main psychiatric disorders associated with suicidal behavior are related to emotion (major depression, bipolar disease), schizophrenia, alcohol and psychoactive substance abuse, personality disturbances (spectrum and antisocial), organic diseases (epilepsy, dementia), anxiety (post-traumatic stress disorder) unipolar depression [5].

Among the suicide victims, 45-64% had suffered from a condition in the depression range, and, on the other hand, 15% of the depressive patients commit suicide [8].

Suicide attempts and suicide are relevant in psychiatric patients and represent a major concern worldwide, both from a clinical and public health point of view. The risks are high in case of major mood disturbances, especially bipolar, and major severe depression ([10].

According to Jang, Jung, Wang and Kim [11], previous studies have reported divergent results regarding the relation between depression and suicide. The authors (14) showed that prevention of seasonal depression dramatically reduced suicide-related mortality. According to the US Department of Health and Human Services report, 60% of people who committed suicide suffered from a mood disorder (e.g. major depression, bipolar disorder, dysthymia).

### ***Depression and quality of life***

Functioning in depression leads to the Quality

of Life deterioration, or the subjective perception of occupational, social or even health wellbeing [12].

Depression is not only a common disease, but is also associated with the actual decline of social and mental wellbeing. Therefore severe depression deeply affects the social and economic status, often representing a high proportion in complex comorbidity and mortality (e.g. increased risk of cardiovascular diseases, with their detrimental results and suicide); the quality of life is diminished, at the expense of higher personal and social costs entailed by poor work performance, absenteeism and use of health care services [13].

According to Jang, Jung, Wang, & Kim [11], the suicide risk probability is higher in elderly people rather than the younger population, because older people resort to methods more likely to be fatal, such as fire arms, drowning and suffocation. Among risk factors are physical or mental illnesses, which are significant predictors.

Moreover, besides the demographic variables (age, sex), the duration of disease and associated conditions have also been investigated as predictors of the quality of life in each psychiatric disorder [7].

### ***Emotion regulation difficulties***

According to Cole PM *et al.* [14,15], the ability to regulate emotions is an essential skill for a healthy mental functioning, problems appearing when the emotional skills are poor, or there is an increased risk of developing a psychopathological condition [16]. More widely, emotion regulation includes first the identification, understanding and acceptance of the emotion experience followed by the control of impulsive behavior and a flexible response to the situation [15,17-20].

Gratz and Roemer [18] propose six dimensions of emotion regulation: non-acceptance of emotion responses reflects a tendency for secondary negative response and/or denial of pain. The difficulty in engaging on a behavioral scale based on objectives reveals concentration and task-solving problems during the time we experience negative emotions. The subscale of difficulties in controlling impulses reflects a difficult control of our behavior when we are upset. The scale of the lack of emotion awareness grasps the lack of attention to emotional reactions.

And finally, the last subcategory, called lack of emotional clarity, reflects the degree of uncertainty of a person regarding the emotions s/he experiences.

## **MATERIALS AND METHODS**

### **Objective**

The general objective of this research is to investigate the role of emotion regulation difficulties in the relation between suicide risk and the quality of life in depressive patients.

### **Hypothesis**

The following hypotheses were developed to fulfill the objectives:

H1. There are statistically significant differences between participants fulfilling the criteria for a depressive episode and those without a psychiatric diagnosis

H2. The level of depression, severity of suicide risk and emotion regulation difficulties influence negatively the quality of life

### **Participants**

This transversal study included adult patients aged 20-60 years, recruited consecutively from a convenient sample at the 3rd Psychiatry Department (County Emergency Clinical Hospital, Cluj-Napoca), based on the ICD-9 and DSM 5 diagnostic criteria.

The study finally included 109 participants aged 18-60 years ( $M=36.95$ ,  $SD = 12.75$ ), 43 in the clinical group (39.4%) and 66 in the non-clinical one (60.6%), 37 men (33.9%) and 72 women (66.1%), 49 from rural areas (45%), 60 from the urban background (55%). Education level: 2 primary school (1.8%), 6 middle school (5.5%), 40 high-school (36.7%), 19 post-high school level (17.4%), 19 college/university (17.4%), 15 graduate university education, master level (13.8%), and 8 postgraduate doctoral level (7.3%). Marital status: 44 unmarried (40.4%), 46 married (42.2%), 16 divorced (14.7%), 3 widows (3.8%). Socio-economical status: 9 students (8.3%), 65 employed (59.6%), 4 unemployed (3.7%), 20 no occupation (18.3%), 11 pensioners (10.1%). Personal medical history: 66 no disease history (60.6%), 43 with psychiatric history (39.4%), 43 with suicide attempts (39.4%) and 66 without suicide attempts (60.6%).

The selection criterion of depressive patients was the score of the depression, anxiety scale DAS21R. It was attempted to identify patients in the acute phase of depression, based on case sheets and also confirmed by the DAS21R questionnaire. To be mentioned that excluded patients with a psychotic intensity of their depression and under medications.

### **Research instruments**

1. Quality of life inventory (QOLI) developed by Frisch [22], was used to assess satisfaction and dissatisfaction in the 16 areas of life. The 16 areas of life are assessed both in terms of importance (e.g. How important is HEALTH for your happiness?) and satisfaction (e.g. How satisfied are you with your HEALTH?)

2. Columbia Suicide Severity Rating Scale, C-SSRS [22] was used to assess: severity of suicidal ideas; intensity of suicidal ideas; suicidal behavior; lethality of suicidal thoughts and plan.

3. Depression Anxiety Stress Scales - DASS21R (23) was used to assess depression, anxiety or stress.

4. Difficulties in Emotion Regulation Scale – DERS-SF was developed by Kaufman *et al.* [24]. The instrument contains 8 items on a 5 point Likert scale, from 1 to 5 - of which 3 items are reversed - evaluating 6 aspects of emotion regulation, with 3 items each, evidencing the difficulties of emotion regulation in the following areas: [17]: Strategies, Non-acceptance, Impulse, Objectives, Awareness, Clarity.

5. Questionnaire on the demographic features includes questions regarding the social and demographic aspects: Gender (male/female), background (rural, urban), education (primary, secondary, high school, college, master, doctoral studies), marital status (married, single, divorced, widow(er)), social-economic status (student, employed, unemployed, retired), family history, disease history (psychiatric or somatic), suicidal tendency (present or absent).

### **Data analysis and processing**

Statistical analysis of the data was performed with the SPSS software (version 22). Statistical methods were: calculation of main scores tendency (mean, standard deviation, Skewness, Kurtosis and score reliability – Cronbach's Alpha) of the scales, and Pearson's correlation. Pearson's correlation and Student's t tests were used, with a significance value of  $p = .05$ . A multivariate regression model was performed to exam the association between QoL and the clinical characteristics (age, sex, demographic and health-related characteristics) depression, emotion regulation difficulties, suicide risk.

## **RESULTS**

### **Descriptive statistics**

The preliminary data analysis checked for normality distribution. The values of Skewness and

Kurtosis indices were within normal ranges (less than 3 for skewness and less than 8 for kurtosis). The mean scores of measured variables are shown in Table 1.

Table 2 shows the correlations between measured variables.

As evidenced, the Quality of life (QOLI) is negatively correlated with all the variables, except the DERS Awareness strategies, which means that high scores of depression, suicide behavior and emotion regulation difficulties are associated with low QOL scores, or, in other words, the more severe depression, suicide behavior and emotion regulation difficulties, the lower the quality of life.

To test the first hypothesis of the study (H1: There are statistically significant differences between participants fulfilling the criteria for a depressive episode and those without a psychiatric diagnosis) regarding the quality of life and associated variables

(suicide risk, emotion regulation difficulties), we used the Student t test for independent samples.

Regarding the differences related to the presence or absence of depression (experimental condition: clinical, non-clinical), the comparison of mean scores evidences the following:

On the scale of QOLI the clinical group scored less (M=8.13, DS=.27) than the non-clinical group (M=51.28, DS=13.87). The difference is statistically significant according to  $t(107) = 10.07; p < .001$ ;

On the total DASS-21R scale the clinical group scored higher (M=160.48, DS=43.47) than the clinical one (M=117.19, DS=24.26). The difference is statistically significant according to  $t(107) = 6.66; p < .001$ ;

On depression measured by DASS-21R the clinical group scored higher (M=13.83, DS=5.52) than the non-clinical one (M=2.47, DS=2.56). The difference

**Table 1.** Descriptive statistics for the measured variables

	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
QOLI_overall score	2.19	1.98	-1.050	.231	.252	.459
C_SSRS Severity of ideation	.94	1.28	1.124	.231	.698	.459
C_SSRS Suicide behavior	.52	.75	1.447	.231	1.721	.459
C_SSRS Suicide idea or behavior	.39	.49	.438	.231	-1.842	.459
DAS_A_Total	134.27	39.25	.680	.231	-.077	.459
DASS_Depression	6.95	6.85	.826	.231	-.681	.459
DASS_Stress	7.44	6.08	.793	.231	-.443	.459
DASS_Anxiety	5.87	5.63	1.045	.231	.263	.459
DERS_Strategies	7.09	4.07	.825	.231	-.731	.459
DERS_Non-acceptance	6.69	3.47	.917	.231	-.159	.459
DERS_Impulse	5.96	3.96	1.337	.231	.517	.459
DERS_Objectives	7.69	4.04	.706	.231	-.893	.459
DERS_Awareness	8.66	2.74	-.198	.231	-.375	.459
DERS_Clarity	6.30	2.69	.821	.231	-.021	.459

**Table 2.** Relations between the quality of life, suicide risk, depression, anxiety, stress and difficulties of emotion regulation

<b>Correlations</b>		1	2	3	4	5	6	7	8	9	10	11	12	13
1.QOLI_Overall scores	Pearson	1												
2.DAS_A_Total	Pearson	-.57**	1											
3.DASS_Depression	Pearson	-.73**	.73**	1										
4.DASS_Stress	Pearson	-.61**	.72**	.84**	1									
5.DASS_Anxiety	Pearson	-.51**	.61**	.75**	.84**	1								
6.C_SSRS Severity of ideation	Pearson	-.71**	.55**	.78**	.70**	.66**	1							
7.C_SSRS Suicide behavior	Pearson	-.69**	.55**	.75**	.69**	.65**	.98**	1						
8.DERS_Strategies	Pearson	-.70**	.65**	.76**	.76**	.75**	.77**	.76**	1					
9.DERS_Non-acceptance	Pearson	-.46**	.57**	.61**	.67**	.76**	.59**	.58**	.75**	1				
10.DERS_Impulse	Pearson	-.64**	.57**	.72**	.75**	.67**	.68**	.80**	.63**	.63**	1			
11.DERS_Objectives	Pearson	-.58**	.60**	.71**	.72**	.69**	.69**	.68**	.85**	.71**	.79**	1		
12.DERS_Awareness	Pearson	-.11	.04	.03	.05	.06	.06	.08	.018	-.09	-.02	-.08	1	
13.DERS_Clarity	Pearson	-.32	.56**	.58**	.62**	.60**	.46**	.43**	.61**	.61**	.49**	.59**	-.01	1

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

is statistically significant according to  $t(107) = 14.49$ ;  $p < .001$ ;

On Stress measured by DASS-21R the clinical group scored higher ( $M=13.06$ ,  $DS=5.53$ ) than the non-clinical one ( $M=2.84$ ,  $DS=3.06$ ). The difference is statistically significant according to  $t(107) = 11.67$ ;  $p < .001$ ;

On Anxiety measured by DASS-21R the clinical group scored lower ( $M=10.51$ ,  $DS=5.53$ ) than the non-clinical group ( $M=8.13$ ,  $DS=.27$ ). The difference is statistically significant according to  $t(107) = 9.29$ ;  $p < .001$ ;

On Difficulties in Emotion Regulation measured by DERS-SF the clinical group scored higher ( $M=10.88$ ,  $DS=3.69$ ) than the non-clinical group ( $M=4.62$ ,  $DS=1.76$ ). The difference is statistically significant according to  $t(107) = 11.88$ ;  $p < .001$ ;

On the Non-acceptance measured by DERS-SF the clinical group scored higher ( $M=9.18$ ,  $DS=3.52$ ) than the non-clinical group ( $M=5.07$ ,  $DS=2.29$ ). The difference is statistically significant according to  $t(107) = 7.38$ ;  $p < .001$ ;

On the Impulse scale measured by DERS-SF the clinical group scored higher ( $M=9.23$ ,  $DS=4.43$ ) than the non-clinical group ( $M=3.83$ ,  $DS=1.33$ ). The difference is statistically significant according to  $t(107) = 9.28$ ;  $p < .001$ ;

On the Objectives scale measured by DERS-SF the clinical group had higher scores ( $M=11.11$ ,  $DS=3.86$ ) than the non-clinical one ( $M=5.46$ ,  $DS=2.16$ ). The difference is statistically significant according to  $t(107) = 9.75$ ;  $p < .001$ ;

On the Awareness scale measured by DERS-SF, both groups have close mean scores, clinical group ( $M=8.76$ ,  $DS=3.13$ ), non-clinical group ( $M=8.59$ ,  $DS=2.49$ ). The difference is not statistically significant according to  $t(107) = .32$ ;  $p=.05$ ;

On Clarity measured by DERS-SF the clinical group scored higher ( $M=8.04$ ,  $DS=2.83$ ) than the non-clinical group ( $M=5.16$ ,  $DS=1.88$ ). The difference is statistically significant according to  $t(107) = 6.37$ ;  $p = .001$ ;

On the scale of suicide ideation Severity measured by C\_SSRS the clinical group had higher scores ( $M=2.4$ ,  $DS=.82$ ) than the non-clinical group ( $M=.00$ ,  $DS=.00$ ). The difference is statistically significant according to  $t(107) = 23.77$ ;  $p < .001$ ;

On the Suicide behavior scale measured by C\_SSRS the clinical group had lower scores ( $M=1.33$ ,  $DS=.60$ ) than the non-clinical group ( $M=.00$ ,  $DS=.00$ ). The difference is statistically significant according to  $t$

(107) = 17.80;  $p < .001$ ;

For testing the second hypothesis H2: (The level of depression, severity of suicide risk and emotion regulation difficulties influence negatively the quality of life), we used hierarchic linear regression analysis, with QoLI as a dependent variable.

In the first stage, the predictor variables introduced were age and gender (Model 1).

In the second stage the predictor variables (Model 2) were: background, education, socio-economic status, marital status.

In the third stage the predictor variables (Model 3) were: family history of psychiatric conditions, medical history, psychiatric diagnosis.

In the fourth stage the predictor variables (Model 4) were: DASS-21R\_Anxiety, DASS-21R\_Depression, DASS-21R\_Stress.

In the fifth stage the predictor variables (Model 5) were: the two dimensions of suicide behavior: C\_SSRS Suicide behavior, C\_SSRS Severity of suicidal thoughts.

In the sixth stage the predictor variables (Model 6) were: the six difficulties of emotion regulation: DERS\_Awareness, DERS\_Clarity, DERS\_Impulse, DERS\_Non-acceptance, DERS\_Objectives, DERS\_Strategies.

It was found a very small  $R^2$  coefficients in models 1 and 2, but increasing from Model 3 to Model 6, with a maximum in Model 6, in which emotion regulation difficulties were introduced, thus explaining 73% of the variation of the quality of life measured by QoLI.

The R multiple correlation coefficient tends to increase with the number of independent variables introduced. In case of model 6, the variables: age, gender, socio-economic status, marital status, psychiatric family history, medical history, psychiatric diagnosis, DASS\_Anxiety, DASS\_Depression, DASS\_Stress, together with the six emotion regulation strategies, DERS\_Awareness, DERS\_Clarity, DERS\_Impulse, DERS\_Non-acceptance, DERS\_Objectives, DERS\_Strategies influence the QoLI overall score by 73.3%, the other 26.7% representing the influence of other factors. In the case analyzed the regression model 6 explains over 73% of the variation of the dependent variable. F coefficient that is statistically significant in all the six models of regression, indicating that the whole regression model is acceptable.

Regression analysis evidenced that the quality of life was statistically significantly influenced by: marital status ( $\beta = .15$ ,  $t=2.05$ ,  $p=.04$ ); DASS depression

( $\beta = -.49$ ,  $t = -3.68$ ,  $p < .001$ ); DASS anxiety ( $\beta = .26$ ,  $t = 2.05$ ,  $p = .04$ ); DERS strategies ( $\beta = -.44$ ,  $t = -2.96$ ,  $p = .005$ ); DERS awareness ( $\beta = -.013$ ,  $t = -2.10$ ,  $p = .03$ ); DERS clarity ( $\beta = .25$ ,  $t = 2.87$ ,  $p = .005$ ).

The quality of life is negatively influenced by depression (measured by DASS 21R depression), the difficulties of emotion regulation (DERS strategies) and the difficulties of acknowledging emotions (DERS awareness), meaning that the QoL tends to be lower if these variables are high. Thus, depression associated with low emotion rebalancing strategies and a lack of attention to emotional response lead to a diminished quality of life.

## DISCUSSION

The results obtained, supporting totally or partially the research hypotheses. These results are similar to other recent studies that have reported differences in the QoL related to the level of depression in elderly persons [11] and in those taking drugs [25]. A lot of studies have been focused on the association between depression and suicide risk, such as [5, 10, 12, 26, 27].

The relationship between depression, suicide risk and the quality of life have been investigated by [7, 11, 13, 25].

On the C\_SSRS scale of Severity of suicidal ideas and Suicidal behavior the clinical group of depressive patients had statistically significant higher scores ( $p < .001$ ;  $p < .001$ ). Our results are similar to those reported by [28].

Regarding the difficulties of emotion regulation as measured by DERS-SF, statistically significant differences ( $p < .001$ ) were obtained on all the scales, except awareness, on which both groups had similar averages. The importance of the approach and emotion regulation in suicide behavior was investigated by [19].

Hypothesis H2 sustained by the results, namely that depression and anxiety influence the quality of life, while suicide risk does not. Among the six measured difficulties of emotion regulation, only three influence the quality of life, namely the strategies scale assessing the statements that an individual cannot do very much to balance emotions after getting upset. The clarity scale evidences the extent to which individuals are confused regarding the motions they experience, while the awareness scale evaluates the attention paid to emotional responses [17, 29, 30]. This means that the level of QoL is influenced by how much individuals can, or cannot, develop strategies to get hold of their

emotions after being upset, at the same time being confused of the emotions they experience and unaware of their emotional responses.

### *Limitations of the study*

The limitations of this study that caution against the generalization of the results are of theoretical and methodological nature.

A first limitation is represented by the tools used: the self-assessment scales depend on the respondents' honesty and reflexive ability. Moreover, some of these scales underwent special adaptation to the Romanian population.

Another limitation ensues from the convenience of study population selection, namely the number of participants from only one geographical area.

So far and to our knowledge, in Romania studies have focused on the serotonin-dopamine association amongst the aggression-suicide risk in patients with major depression [4], the quality of life and the social impact in patients with laryngeal cancer after radiotherapy [31], as well as on the particular features of suicide risk in the depressive range [5].

Under the theoretical aspect, this study is among the very few attempts in Romania to analyze the relations between the quality of life and depression, suicide risk and the difficulties of emotion regulation.

Under a practical, applicative aspect, our results could be used for the development of counseling programs and protocols of intervention in the suicide risk.

### **Conflict of interest**

The authors declare that they have no conflict of interest.

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