

Effectiveness of A Psychiatric Nursing Program for Coping in Improving Self-Concept among Leprosy Patients

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Abstract: Leprosy is associated with major psychosocial problems leading to seclusion of the affected persons. Nonetheless, the intervention programs aimed at integration of these patients still need more research.

Aim: To examine the effectiveness of a psychiatric nursing program for psychosocial adjustment in improving coping among patients with leprosy, and consequently ameliorating their self-concept.

Subjects and methods: The study was carried out at the leprosy colony in El-Khanka, Qalyoubia governorate using a quasi-experimental design with pre-post assessment on 150 leprotic patients. Data were collected using an interview form with Tennessee self-concept scale, and a coping strategy scale. The intervention consisted of a psychiatric nursing program for psychosocial adjustment of patients with leprosy developed and implemented by the researchers in small groups over 16 sessions. The effectiveness of the program was evaluated after its completion using the same data collection form and procedure.

Results: The patients' median age was 41.0 years, with 52.0% males. The duration of illness ranged between 1 and 50 years, with median length of stay 5.5 years. The patients had average self-concept scores and low coping before the intervention, and both showed statistically significant improvements ($p < 0.001$) after training. Meanwhile, the score of avoidance/ withdrawal coping strategy which was high before program statistically significantly decreased ($p = 0.02$). The study intervention was a statistically significant independent positive predictor of all types of coping strategies, except avoidance/withdrawal strategy where it was a negative predictor. Moreover, it was the statistically significant independent positive predictor of self-concept in addition to in addition to all types of coping strategies, except avoidance/withdrawal.

Conclusion and recommendations: A psychiatric nursing program is effective in improving the coping of leprosy patients, with consequent improvement of their self-concept. It is recommended that the program be implemented on a larger scale, with more emphasis on those with longer duration of the illness.

Keywords: Leprosy, Psychiatric nursing program, Coping, Self-concept.

1. INTRODUCTION

Leprosy is a communicable bacterial disease leading to serious damage of the skin and the nerves leading to social segregation and discrimination against affected patients (*Couto Dal Secco et al, 2017*). The clinical manifestations may remain unrevealed for long periods that can reach as long as 20 years. This would lead to delayed diagnosis, especially among women (*Price, 2017*). Worldwide, more than 200 thousand new cases of leprosy are added although the World Health Organization set a goal to stop this disease by 2020 (*Naaz et al, 2017*). However, the trends of detection of new cases of leprosy may show small reductions worldwide in the coming years, with need for more innovative preventive measures (*Schreuder et al, 2016*).

In addition to the associated physical disabilities, leprosy leads to major psychosocial problems leading to seclusion of the affected persons. This is due to the stigma feelings associated with this disease throughout human history. Many factors were highlighted to underlie stigma in leprosy such as external lesions, religious beliefs, and fear of contagion (*Sermittirong and Van Brakel, 2014*). Stigma has also been attributed to lack of knowledge and to misconceptions about the disease such as linking it to uncleanness, spells, curses, or punishment. These misconceptions lead to negative

attitude of the society towards leprotic patients. Thus, interventions are needed to increase community awareness about the disease and its etiology and prognosis (Tabah et al, 2018).

Hence, the patients with leprosy suffer low self-esteem and disturbed self-concept due to their social isolation, with negative impacts on their economic and social life, and their quality of life in general (Garbin et al, 2015). This could also extend to their families and caregivers who will need more support (Dako-Gyeke, 2018). This has been reported both in developing as well as developed countries (Roosta et al, 2013). Moreover, these psychosocial problems persist even after the biomedical cure of the patient, and this has been attributed to the attitudes of the community, and surprisingly the health care providers (van Haaren et al, 2017). This underscores the importance of the role of psychiatry in the management of this disease (Cunha et al, 2015).

Psychosocial interventions aimed at improving the self-concept and self-esteem of patients with chronic diseases through training in coping have demonstrated good outcomes. This has been reported in dealing with patients suffering from sickle cell anemia (Asnani et al, 2016), chronic back pain (Nicolson et al, 2017), and HIV (van der Heijden, 2017). Similar successes were also shown with patients suffering from disabilities and diabetes, so that such interventions could be extrapolated to leprosy patients (de Vries et al, 2014; Lusli et al, 2015). Other approaches to improve stigma among leprosy patients that led to better self-concept include participatory videos through learning how to cope with related problems and sharing experience (Peters et al, 2016). Nonetheless, a systematic review concluded that the intervention programs aimed at integration of leprosy patients still need more research (Sermtitirong et al, 2014). Hence, the present study is an attempt to fill this gap of information.

Aim of the study

This study was aimed at examining the effectiveness of a psychiatric nursing program for psychosocial adjustment in improving coping among patients with leprosy, and consequently ameliorating their self-concept. The research hypothesis was that the implementation of this program will lead to better coping among the leprosy patients, which will lead to significant improvement of their self-concept.

2. SUBJECTS AND METHODS

Design and setting: A quasi-experimental design with pre-post assessment was utilized in the study, which was carried out at the leprosy colony in El-Khanka, Qalyoubia governorate.

Subjects: The study population consisted of patients with leprosy residing in the study setting during the time of the study, of both genders and regardless the type or stage of leprosy. The sample size was computed to detect a mean improvement in the scores of self-concept or coping of at least 10 points, with 30-point standard deviation. Using the Open-Epi software package at 95% level of confidence and 80% study power, the required sample size was 150 patients after adjusting for an expected dropout rate of about 5%. The sample was recruited using convenience sampling.

Data collection tools: Data were collected using an interview questionnaire form with a self-concept and a coping strategy tools. It was designed by the researcher based on review of relevant literature. It started with a section covering patients' demographic characteristics age, gender, education, marital status, job, and income. This was followed by a section for the disease characteristics such as the duration, number of lesions, concomitant problems, infections, length of stay in the colony, etc.

The Tennessee self-concept scale, developed by William H. Fitts in 1965, and updated by Western Psychological Services in 1996, was used to assess patient's self-concept. It has high levels of reliability and validity (Marsh et al, 1988). It has 100 statements covering physical, moral, personal, family, and social areas of self-concept, in addition to supplementary scores covering conflict, identity, satisfaction, and behavior. The scoring was done according to original tool groupings. The items were scored 5, 4, 3, 2, and 1 for the responses "always true", "true", "uncertain", "false", and "always false", respectively so that a higher score indicates higher self-concept level. For each area, the scores of the items were summed-up and the total divided by the number of the items and converted into percent scores. Means, standard deviations, and medians were computed.

The coping scale used was based on the theory of coping as a process (*Folkman et al., 1997*). It has been validated, and its reliability proved to be high (*Willebrand et al., 2002, Carver C.S. (1997)*): The scale consists of 33 statements in common life situations grouped into six coping strategies namely re-assessment, avoidance/withdrawal, emotional support, optimism/problem-solving, self-control, and positive action. Statements are on a 5-point Likert scale ranging from "not at all" to "always," scored from 1 to five respectively. For each coping strategy, the scores of the items were summed-up and the total divided by the number of the items, giving a mean score for the pattern. These scores were converted into percent scores, and a higher score indicated more utilization of the strategy. Means, standard deviations, and medians were computed for each strategy.

The interview questionnaire form was rigorously revised by a panel of experts in psychiatric nursing for face and content validation. The two scales have documented validity and reliability. Moreover, their reliability in the current study was shown to be high with Cronbach Alpha coefficients 0.953 for the coping scale and 0.940 for the self-concept scale.

Teaching program (study intervention): This consisted of a psychiatric nursing program for psychosocial adjustment of patients with leprosy. It was developed by the researchers to help these patients in meeting their psychosocial needs to be able to adjust their psychosocial patterns. This was to be achieved through teaching the patients how to identify, plan and participate with a positive attitude in order to cope and deal with life after leprosy.

The program content was divided into 16 sessions. The first two sessions were for acquaintance, identifying program objectives, content, and procedures, in addition to pre-testing. In the following 3 sessions there was an overview of the psychosocial problems, negative distress, and coping strategies. Sessions 6 and 7 were dedicated for finding and achieving goals, and sessions 8 9 for self-conversation and physical pressure. Sessions 10 to 12 covered family pressure, stress from family, and adjustment. Sessions 13-15 were for pressures and relaxation techniques. The last session was for overall feedback and post-testing.

Fieldwork: The study was achieved in assessment, planning, implementation, and evaluation phases.

Assessment phase: Upon obtaining the required permission, the researchers met with the eligible leprosy patients individually, explained the aim of the study, and invited them to participate. Those who gave their verbal consent to participate were interviewed individually using the prepared data collection form. The individual interview lasted from 60-90 minutes for each subject.

Planning phase: The program was designed based on *Lister Iona (2001)* and in the light of the patients' needs identified in the pre-intervention assessment phase. It was planned to fill the knowledge and practice gaps identified. The program covered leprosy definition, causes, types, complications, proper diet, relaxation techniques, exercise, stress and anger management, patterns of adjustments, communication skills, problem solving techniques, and coping strategies.

Implementation phase: Once the program was finalized, it was implemented over 16 sessions: four theoretical and 12 practical. Each session took from 60 to 90 minutes. The patients were divided into small groups. The researchers met with each group twice per week on Sunday, Monday, Tuesday, and Thursday from 8:30 am to 12:00 pm.

A variety of teaching methods and media were used such as modified interactive mini-lectures, small group discussions, role play, demonstration and re-demonstration using real life situations, etc. This was to ensure exposure of all subjects to same learning experience. Materials and media included computer power point presentations, posters, whiteboard and flipchart. The methods of evaluation used during training included asking questions, feedback, and indirect observation.

Evaluation phase: The effectiveness of the teaching program was evaluated after completion of the training sessions. This was done using the same data collection form and procedure.

Statistical analysis: Data entry and statistical analysis were done using SPSS 20.0 statistical software package. Cronbach alpha coefficient was calculated to assess the reliability of the developed tools through their internal consistency. Quantitative continuous data were compared using the non-parametric Mann-Whitney test. Spearman rank correlation was used for assessment of the inter-relationships among quantitative variables and ranked ones. In order to identify the independent predictors of the scores of self-concept and coping, multiple linear regression analysis was used, and analysis of variance for the full regression models done. Statistical significance was considered at p-value <0.05.

3. RESULTS

The study sample consisted of 150 leprotic patients whose age ranged between 15 and 80 years, median 41.0 years, with slightly more males (52.0%) as shown in Table 1. More than one third (36.7%) were illiterate and another third (37.3%) had basic education. A majority of them (79.3%) were unmarried, and unemployed (64.0%).

Table 2 illustrates that the duration of illness ranged between one and fifty with median 7.0 years. Approximately one-half of the patients were having two lesions (45.3%), and only a few had concomitant complications (13.3%) or infections (8.7%). Additionally, one-third of them (33.3%) had chronic diseases. Their length of stay ranged between one and forty years, median 5.5.

Table 3 indicates average scores of self-concept, with medians around 50 out of a maximum of 100. Meanwhile, the lowest median score was for conflict (20.00). After implementation of the intervention, the scores of all aspects of self-concept showed statistically significant improvements ($p < 0.001$), with medians reaching 80.00 for the physical and moral aspects of self-concept, and for conflict.

As displayed in the same table, the leprotic patients in the study sample had generally low coping scores before the intervention. This was particularly evident regarding the optimism/problem solving strategy (median 30.00). On the other hand, the score of the avoidance/withdrawal coping strategy was high (median 74.20). At the post-intervention phase, the scores of all coping strategies demonstrated statistically significant increases ($p < 0.001$). Conversely, the score of the avoidance/withdrawal coping strategy decreased ($p = 0.02$).

Table 4 points to statistically significant moderate to strong positive correlations between the scores of self-concept and the scores of each of the coping strategies. The only exception was the correlation with the avoidance/withdrawal strategy, which had a weak negative correlation with the score of identity, and weak positive correlations with family and social self-concept. The strongest correlation was between the optimism/problem solving coping strategy and the social self-concept ($r = 0.891$).

Concerning the correlations between patients' personal and disease characteristics and their coping and self-concept, Table 5 demonstrates that the education correlated positively with self-control coping, as well as family, social, and behavior self-concept. Meanwhile, the avoidance/withdrawal coping correlated positively with the number of lesions, and the duration of illness correlated negatively with the family, social, and behavior self-concept.

For the scores of the various coping strategies, the multivariate analyses (Table 6) shows that the study intervention was a statistically significant independent positive predictor of all types of coping strategies, except avoidance/withdrawal strategy where it was a negative predictor. Other independent positive predictors were patient age, education, number of lesions, and complications. On the other hand, the duration of illness and the length of stay were negative predictors. The models explain from 10% of the variation of the avoidance/withdrawal coping score to 75% of the score of optimism/problem solving strategy.

As illustrated in Table 7, the multivariate analysis identified the study intervention, in addition to all types of coping strategies, except avoidance/withdrawal strategy, as the statistically significant independent positive predictors of patients' score of self-concept. Conversely, their age was a negative predictor. The model explains 88% of the variation in the self-concept score.

4. DISCUSSION

In the present study, the leprosy patients in the sample tended to have low self-concept at the start of the study. This is quite expected given the historically deeply rooted social stigma attributed to this disease. It is also related to the associated disfigurement and mutilations that many of them experience due to the complications of the disease such as amputation. In line with this, *Thakur (2015)* clarified that skin discoloration and darker pigmentation resulting from the disease may have negative social repercussions on leprosy patient. Moreover, a study in India revealed that more than a half of the leprosy patients were having self-stigma (*Katoch et al, 2017*). A similarly high rate of stigma feelings was also reported by *Pryce et al (2018)* in a study of leprosy in Cameron.

Furthermore, the negative effect of leprosy on self-concept is supported by the finding of a negative correlation between the duration of the illness and the scores of self-concept among the leprosy patients in the current study since the probability of complications increases as the disease progresses. Moreover, the duration of the disease as well as the residence in the colony were negative predictors of most coping scores, indicating their negative impact on patients' ability to acquire coping knowledge and skills. In agreement with this, *Jindal et al (2013)* in a study in India reported a higher prevalence of psychiatric problems as the duration of leprosy disease increased. On the same line, a study in Ethiopia demonstrated that the disablement among leprosy patients increased with the duration of their illness (*Shumet et al, 2015*).

Additionally, the leprotic patients in the current study sample were deficient in positive coping strategies before implementation of the intervention such as the optimism/problem solving, positive action, and re-assessment strategies. Conversely, they had more tendency to utilize negative coping such as the avoidance/withdrawal one. This might reflect their desperate feelings due to their stigmatizing illness. In support of this explanation, the study findings revealed a significant positive correlation between the number of lesions and the score of the avoidance/withdrawal coping strategy and it was a positive predictor of this score. The findings are in agreement with *Asampong et al (2018)* whose study in Ghana revealed that the deformities associated with leprosy were an important factor underlying their stigma feelings and impeding their participation in social life and work.

The present study has also identified significant positive correlations between the scores of self-concept and the scores of each of the positive coping strategies, and negative or no correlations with the avoidance/withdrawal strategy. Thus, the low self-concept among these patients could be related to lack of knowledge and training in coping methods among them, which is the true rationale for the present study that tended to improve patients' self-concept through working on their coping abilities. In agreement with this, a study in Canada reported that self-esteem and self-concept improved when the use of the withdrawal/ avoidant coping strategy was reduced (*Goodyday et al, 2018*).

The implementation of the current study intervention was associated with significant improvements in leprosy patients' coping. This was evident in the increases in the scores of all positive strategies, and the decrease in the score of the only negative strategy of avoidance/withdrawal coping. The effect of the intervention program on patients' coping strategies was confirmed by the results of the multivariate analyses, which identified the intervention as main positive predictor of all types of coping strategies, but a negative predictor for the avoidance/withdrawal strategy. The positive effects of the intervention on patients' coping abilities could be attributed to the nature and content of the training, which was tailored to patients' needs, and which was administered in small groups, which would help learning through interactions and sharing of experience.

In agreement with the foregoing, *Cross H. (2006) ,Heijnders ML, Van der Meij S.(2006)*: demonstrated that social skills group training helped stigmatized patients to handle their negative feelings and to be more socially active, with more confident perceptions of their future. The group training is thus more effective compared to individualized training in providing attendants with social skills due to mutual group support and open discussions of personal experience. This would lead to more self-confidence to confront the disease, and consequently better self-concept. On the same line, a study in India showed the importance of participation counseling in improving the coping skills of leprosy patients (*Bense et al, 2013*).

The improvement of the scores of the various positive coping strategies among the leprosy patients in the present study had a positive impact on their self-concept. This was put into evidence through the multivariate analysis, which showed that the implementation of the study intervention was a direct positive predictor of the score of self-concept, in addition to its indirect positive effect through improving patients' coping. In fact, the scores of all types of positive coping strategies were positive predictors of patients' score of self-concept. Meanwhile, the negative strategy of avoidance/withdrawal had no significant effect on coping. These findings lead to acceptance of the set research hypothesis that improving leprosy patients' coping would lead to improvement of their self-concept.

The aforementioned present study findings are in congruence with those of a study in Indonesia where a counselling intervention program was found to be effective in reducing stigma among leprosy patients and consequently improving their integration in the society and self-confidence (*Lusli et al, 2016*). Moreover, the beneficial effect of the utilization of positive coping strategies on patients' self-confidence and self-esteem is in agreement with the findings of a study of

coping and self-esteem in Slovakia among multiple sclerosis patients who similarly suffer serious disabilities (*Mikula et al, 2018*).

5. CONCLUSION AND RECOMMENDATIONS

In conclusion, the leprosy patients suffering from low self-concept profited from a psychiatric nursing program aimed at improving their coping, and this led to significant improvement of their self-concept. It is recommended that the program be implemented on a larger scale in the study setting and in similar ones, with more emphasis on those with longer duration of the illness.

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APPENDIX – A
List Of Tables:
Table 1: Demographic characteristics of patients in the study sample (n=150)

	Frequency	Percent
Age:		
<40	64	42.7
40+	86	57.3
Range	15.0-80.0	
Mean±SD	41.5±13.7	
Median	41.0	
Gender:		
Male	78	52.0
Female	72	48.0
Education:		
Illiterate	55	36.7
Basic	56	37.3
Intermediate	28	18.7
University	11	7.3
Job:		
Unemployed	96	64.0
Worker	38	25.3
Employee	16	10.7
Marital status:		
Unmarried	119	79.3
Married	31	20.7

Table 2: Medical history of patients in the study sample (n=150)

	Frequency	Percent
Duration of illness (years):		
<5	46	30.7
5-	38	25.3
10+	66	44.0
Range	1.0-50.0	
Mean±SD	10.5±9.5	
Median	7.0	
Number of lesions:		
1	26	17.3
2	68	45.3
3	51	34.0
4	5	3.3
Have concomitant problems (amputation/disfigurement)	20	13.3
Have infections	13	8.7
Have supportive treatment	40	26.7
Have chronic diseases	50	33.3
Positive family history	26	17.3
Length of stay (years):		
<5	62	41.3
5-	32	21.3
10+	56	37.3
Range	1.0-40.0	
Mean±SD	8.9±8.7	
Median	5.5	

Table 3: Self-concept and coping scores among patients before and after intervention

	Pre (n=150)		Post (n=150)		Mann Whitney test	p-value
	Mean±SD	Median	Mean±SD	Median		
SELF-CONCEPT (max=100)						
Physical	48.0±15.3	40.00	77.8±16.7	80.00	145.20	<0.001*
Moral	49.1±8.6	44.00	74.6±14.9	80.00	160.93	<0.001*
Personal	54.3±7.6	55.00	70.8±10.3	67.50	163.71	<0.001*
Family	49.9±12.9	50.00	74.7±11.7	77.30	160.46	<0.001*
Social	43.2±11.0	46.88	72.0±10.8	77.50	176.02	<0.001*
Total self-concept	48.9±8.2	45.30	74.0±11.5	76.40	174.60	<0.001*
Conflict	34.7±21.2	20.00	70.9±16.3	80.00	141.65	<0.001*
Identity	56.4±6.2	54.30	71.3±6.3	72.40	176.75	<0.001*
Satisfaction	42.5±10.3	40.00	72.5±10.0	75.00	192.01	<0.001*
Behavior	53.5±5.8	52.90	71.0±8.6	74.10	171.70	<0.001*
COPING (max=100)						
Re-assessment	38.3±16.8	35.00	75.6±13.2	81.30	179.60	<0.001*
Avoidance/withdrawal	67.8±16.8	74.20	59.0±20.4	62.80	5.78	0.02*
Emotional support	51.3±16.1	53.40	73.6±26.1	80.00	62.68	<0.001*
Optimism/problem-solving	31.6±11.6	30.00	73.2±13.3	77.60	214.40	<0.001*
Self-control	51.6±22.7	36.70	72.5±15.2	73.40	66.71	<0.001*
Positive action	34.0±13.7	35.00	74.9±21.0	80.00	173.04	<0.001*

(*) Statistically significant at $p < 0.05$

Table 4: Correlation matrix of patients' coping and self-concept scores

Self-concept	Spearman's rank correlation coefficient					
	Coping strategies					
	Re-assessment	Avoidance withdrawal	Emotional support	Optimism/ problem-solving	Self-control	Positive action
Physical	.744**	.111	.675**	.706**	.705**	.749**
Moral	.723**	.047	.672**	.764**	.486**	.806**
Personal	.761**	.089	.594**	.804**	.644**	.750**
Family	.836**	.176**	.683**	.845**	.756**	.802**
Social	.869**	.170**	.651**	.891**	.729**	.785**
Total	.883**	.178**	.686**	.862**	.759**	.814**
Conflict	.582**	-.052	.592**	.789**	.412**	.768**
Identity	.579**	-.236**	.539**	.754**	.380**	.829**
Satisfaction	.836**	.087	.697**	.842**	.542**	.790**
Behavior	.740**	.039	.628**	.834**	.625**	.776**

(**) Statistically significant at $p < 0.01$

Table 5: Correlation of patients' self-concept and coping scores and their characteristics

	Spearman's rank correlation coefficient				
	Age	Education	No. of lesions	Disease Duration	Length of stay
Self-concept:					
Physical	-.085	.070	.021	-.105	-.095
Moral	-.070	-.040	-.007	.001	-.003
Personal	.016	.037	.045	-.023	-.010
Family	-.054	.215**	.066	-.167**	-.110
Social	-.044	.190**	.051	-.146*	-.100
Total self-concept	-.050	.127*	.037	-.112	-.079
Conflict	-.006	.066	-.020	-.040	-.013
Identity	.004	-.010	-.029	-.011	.006
Satisfaction	-.075	.047	-.004	-.027	-.016
Behavior	-.038	.174**	.009	-.123*	-.065
Coping:					
Re-assessment	-.029	.077	.071	-.075	-.056
Avoidance/withdrawal	.026	.050	.203**	-.022	-.026
Emotional support	-.069	.036	.086	-.069	-.056
Optimism/problem-solving	.005	.112	.010	-.047	-.011
Self-control	.021	.238**	.067	-.112	-.079
Positive action	-.029	.078	-.023	-.062	-.044

(*) Statistically significant at $p < 0.05$

(**) Statistically significant at $p < 0.01$

Table 6: Best fitting multiple linear regression model for the coping scores

	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	B	Std. Error				Lower	Upper
Re-assessment coping							
Constant	-.17	.19		0.911	.363	-.54	.20
Intervention	1.87	.09	.78	21.838	<0.001	1.70	2.04
Married	.23	.11	.08	2.185	.030	.02	.44
No. of lesions	.13	.06	.09	2.383	.018	.02	.25
Duration of disease	-.01	.00	-.10	2.705	.007	-.02	.00
r-square=0.62 Model ANOVA: F=123.11, p<0.001							
Withdrawal coping							
Constant	3.35	0.23		14.759	<0.001	2.90	3.79
Intervention	-0.44	0.11	-0.23	4.200	<0.001	-0.65	-0.23
No. of lesions	0.28	0.07	0.22	3.987	<0.001	0.14	0.41
Length of stay	-0.01	0.01	-0.14	2.426	0.016	-0.03	0.00
r-square=0.10 Model ANOVA: F=12.10, p<0.001							
Emotional support coping							
Constant	1.30	0.27		4.865	<0.001	0.78	1.83
Intervention	1.11	0.12	0.46	9.001	<0.001	0.87	1.35
No. of lesions	0.16	0.08	0.10	1.918	0.056	0.00	0.32
Duration of illness	-0.02	0.01	-0.14	2.801	0.005	-0.03	-0.01
r-square=0.23 Model ANOVA: F=30.33, p<0.001							
Optimism/problem solving coping							
Constant	-.85	.18		4.697	<0.001	-1.20	-.49
Intervention	2.08	.07	.86	29.769	<0.001	1.94	2.22
Age	.01	.00	.10	2.265	.024	.00	.02
Education	.05	.02	.07	2.243	.026	.01	.10
Duration of illness	-.02	.01	-.13	2.953	.003	-.03	-.01
r-square=0.75 Model ANOVA: F=226.86, p<0.001							
Self-control coping							
Constant	.64	.27		2.366	.019	.11	1.18
Intervention	1.05	.11	.48	9.917	<0.001	.84	1.25
Age	.02	.01	.23	3.344	.001	.01	.03
Education	.13	.04	.19	3.636	<0.001	.06	.20
Duration of illness	-.03	.01	-.26	3.496	.001	-.05	-.01
r-square=0.31 Model ANOVA: F=34.42, p<0.001							
Positive action coping							
Constant	-.25	.17		1.471	.142	-.58	.08
Intervention	2.04	.10	.76	20.325	<0.001	1.85	2.24
Complications	.29	.15	.07	1.975	.049	.00	.59
Length of stay	-.01	.01	-.10	2.558	.011	-.03	.00
r-square=0.59 Model ANOVA: F=141.64, p<0.001							
Variables entered in all models: age, gender, education, job, marital status, chronic diseases, complications, length of stay, number of lesions, duration of illness, intervention							

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Table 7: Best fitting multiple linear regression model for the self-concept score

	Unstandardized Coefficients		Standardized Coefficients	t-test	p-value	95% Confidence Interval for B	
	B	Std. Error				Lower	Upper
Constant	.93	.09		9.943	<0.001	.75	1.12
Intervention	.31	.07	.19	4.264	<0.001	.17	.46
Age	.00	.00	-.05	2.282	.023	.00	.00
Coping by:							
Re-assessment	.10	.03	.15	3.186	.002	.04	.16
Emotional support	.13	.02	.20	5.814	<0.001	.09	.18
Optimism/problem-solving	.11	.04	.17	2.948	.003	.04	.18
Self-control	.17	.02	.24	8.115	<0.001	.13	.21
Positive action	.10	.03	.17	3.599	<0.001	.04	.15

r-square=0.88 Model ANOVA: F=318.40, p<0.001

Variables entered and excluded: gender, education, job, marital status, number of lesions, duration of disease, chronic diseases, complications, length of stay, withdrawal coping