



# Role of Health Locus of Control in “Psycho-Social Adjustment” in Patients Having “Rheumatoid Arthritis”

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**Abstract: Background:** This study aims to test the association between “health locus of control” and “psycho-social adjustment” in people with “Rheumatoid arthritis” (RA). First hypothesis was that “health locus of control” is likely to have relationship with “psycho-social adjustment” in people with “Rheumatoid arthritis”. The second hypothesis was “health locus of control” would likely to predict “psycho-social adjustment” in people with “Rheumatoid arthritis”. **Methods:** A “correlational research design” and non-probability “purposive sampling” technique was conducted on the sample of (N=124) people with RA between. The age range participants was 30 to 55 years (M=3.4, SD=1.4). For the purpose of information collection “psycho-social adjustment” to illness” Scale (PAIS) (Derogatis, 1986) and “Multidimensional health locus of control” (MHLC) (Wallston, 1978) were applied. **Results:** “Pearson Product Moment Correlation” “multiple linear regression” and “independent sample t-test” were applied to evaluate data which revealed that “health locus of control” had significant positive relationship with “psycho-social adjustment” in people with RA. Moreover, “multiple linear regressions” analysis revealed that “health locus of control” was significant positive predictor of “psycho-social adjustment”. Furthermore Independent sample t-test indicated that there was no significant difference found in psychosocial adjustment of male and female patients. **Conclusion:** The findings have explained that psychological factors play significant role in the prognosis of physical diseases. In addition to it the outcomes will help to understand how “psycho-social adjustment” in people with “Rheumatoid arthritis” play vital role in physical health outcomes by fostering personal growth and resilience. It also provides new explanations for understanding the effectiveness of psycho education and intervention plan based on empirical evidence.

**Keywords:** Health locus of Control, psycho-social adjustment, Rheumatoid arthritis

## 1. Introduction

“Rheumatoid arthritis” (RA) is an inflammatory disorder of chronic nature affecting joints and causing associated issues like swelling, stiffness and joint pain. At advance stages it could leads toward the loss of joint’s normal functioning and mobility. RA falls under the category of autoimmune diseases, and in this particular disease body’s defense system fallaciously starts targeting its own healthy functional cells causing inflammation and painful swelling of joints. RA could occur at any stage of life, but most prevalent age of onset is between 30-50 years. Women are diagnosed three times more than the males, and demographically symptoms are more evident in less educated population of lower socioeconomic status. According to the research about 1% of the whole world population is suffering and diagnosed with “Rheumatoid arthritis” (Majithia & Geraci, 2007). RA is a disease based on multi factors, resulting from the interaction of both genetic (50-60%) and environmental factors, in its occurrence and expression (Alamanos & Drosos, 2005). Various environmental factors involved in the pathogenesis of RA include socioeconomic characteristics, smoking, diet, infectious agents and hormonal factors. Among environmental risk factors smoking shows the

strongest association with susceptibility and worse outcomes of RA. It is estimated that 0.5 to 10% world population will be suffering from RA (Caporali, 2009). In reference to Pakistan, in the suburb population of southern Pakistan, the prevalence rate of RA is estimated to be 0.142%, whereas in northern areas of Pakistan the approximate ratio is 0.55% (Alam et al., 2011).

“Psycho-social adjustment” to chronic illness and incapacities is explained as through the procedure to suffer and assimilate new changes in their lifestyle to maintain the environmental equilibrium of people which is disturbed by the tension between internal needs and new external demands (Livneh & Antonak, 1997). Multiple factors are studied while determining their role in psycho-social change to lingering ailments (Stanton et. al., 2007). A significant predictive relationship was found between “psycho-social adjustment” and issues of psychosomatic suffering, diverse strategies to cope up and accessibility of societal sustenance in patients suffering from chronic illness. The integrative framework of these factors was framed by “Pakenham and colleagues” (Pakenham, 1999), known as the model of “psycho-social adjustment” to chronic illness, this model is an adaptation of Lazarus and Folkman’s (1984) stress-coping model. According to the “psycho-social adjustment” model, it is a composite contact between perceptive assessments, coping means, illness peripheries, and surviving tactics.

A significant work on health locus of control is done by Rotter (1966), he described people who claimed to have high degree of personal control over the happenings have “internal locus of control”. In contrast, people who strongly believe on luck and fate, which are supposed to have “external locus of control”. It was also studied that people having internal locus of control show less “psycho-social adjustment” issues than people having external locus of control Frank and Elliott, (1989).

In another study (Ziarko, 2014) found that Rheumatoid arthritis is the most common rheumatic disorder among connective tissue disorders. It is a persistent, progressive inflammatory process beginning in the synovial membrane, leading to the deformation and destruction of articular tissues, and the impairment of articular function (Maldyk, 2008). A person affected by rheumatoid arthritis experiences numerous somatic problems, such as the deformation and deterioration of joints, chronic pain, fatigue, weight loss, and fever. Besides these, the sufferer must also deal with psychological hardships, primarily marked by negative affect: anxiety, depression, feelings of loss, and social difficulties related to changes in fulfilling social roles (Ziarko, 2014).

In another pertinent study (Creed, 1990) tried to explore the role of psychosocial phenomena in adjustment to chronic rheumatic Arthritis illnesses is important for several reasons. Health locus of control with chronic disease can take a significant physical and psychological toll on patients and their families. Sometimes problems with psychosocial adjustment become severe enough to be labeled clinical psychiatric disorders in approximately 20% of patients with rheumatic diseases. Psychosocial distress is consequential not only because of the suffering it can cause directly, but also because of the negative effect it can have on work status, functional ability, assessment of pain, perception and preoccupation with disease, and appraisal of the need for medical attention (Bradley et al., 1987). Although Rheumatic Arthritis is associated with significant chronic pain, disability, morbidity, early mortality, and an unpredictable course, there has been virtually no indigenous research concerning psychosocial adjustment in this disease. A review of related literature reveals a number of socio-demographic and clinical variables that could have an indirect effect on psychosocial adjustment because of their relationship to disease severity and survival. Health locus of control, age and sex, education level in rheumatoid arthritis (RA), marital status, time since diagnosis in RA., illness-related uncertainty, and have also proved to be relevant constructs in rheumatic Arthritis.

### 1.1 Objectives

To assess the relationship amongst “health locus of control” and “psycho-social adjustment” in patient with “Rheumatoid arthritis”.

To observe the predictive role of “health locus of control” for “psycho-social adjustment”.

To assess the demographic differences on “health locus of control” and “psycho-social adjustment” in patient with “Rheumatoid arthritis”

### 1.2 Hypotheses

H1: “health locus of control” would likely have relationship with “psycho-social adjustment” in patients having “Rheumatoid arthritis”.

H2: “health locus of control” would predict “psycho-social adjustment” in patients having “Rheumatoid arthritis”.

H3: “health locus of control” and “psycho-social adjustment” is likely to have different scores with relevant to gender.

## 2. Materials and Methods

### 2.1 Design of the Study

The Relationship scheme was opted to conduct the present work to observe the possible relativity between the “health locus of control” to “Rheumatoid arthritis” disease. It was due to correlational nature of proposed objectives and hypotheses.

### 2.2 Sample

The G\* Power 3.0 analysis was conceded to assess the required sample size for current study (Faul. et.al, 2007). The above mentioned analysis revealed that for linear regression, it based on 2 conjecturers with  $\alpha = .05$ , moderate effect size .15 to remarkable effect size of .35 could be assessed reliably when  $N= 124$ . One hundred fifty participants were recruited from different hospitals, but after screening the respondents according to the provided criterions data from total no of 124 people was used in analysis phase.

### 2.3 Sampling Strategy

The “purposive sampling” technique was opted to apprentice the sample. After a careful guide from the literature, this strategy has been chosen to meet the data collection requirements to reach the concerned people with certain disease after applying the inclusion and exclusion criteria (Panacek & Thompson, 2007). Only diagnosed patients of “Rheumatoid arthritis” were included. Patients with age range 30-55 were included. Other forms of arthritis than “Rheumatoid arthritis” were not included. Patients with diagnosed physical and psychological comorbid condition were excluded.

### 2.4 Assessment Tools

#### 2.4.1 “Psycho-Social Adjustment” to illness” Scale (PAIS)

The illness by “psycho-social adjustment” will be examined by the “psycho-social adjustment” to “illness Scale” (PAIS). The “PAIS” comprised of forty four items for enquiry that are alienated amid 7 realms of “adjustment to illness”: orientation towards the healthiness, occupational setting, native atmosphere, sensual relationship, familial contacts, interactional setting, and psychological suffering. The range for subjects check from one to four from no variation, or progress linked to sickness, to distinctly adverse variation associated to illness. For this certain work, the overall PAIS gain was benefited to characterize “psycho-social adjustment to illness”. The high marks indicate minor “adjustment to illness”. Constructive, convergent, internal consistency and prophetic validity along with the consistency have been recognized for the PAIS in cardiac, renal dialysis patients and cancer (Derogatis, 1987). In addition to it, the PAIS has been also opted to analyze the extent of “psycho-social adjustment” to disease in patients of chronic syndromes.

#### 2.4.2 “Multidimensional Health Locus of Control” (MHLC)

The MHLC is a measure used to gauge HLOC in medical population. There are the forms of MHLC that exist as C Form (Wallston et. al., 1994). Form C is couched so that the word “ailment” is replaced with the certain specific illness of people being observed, which permits for “situation-specific measurement” of HLOC dogmas. In this study, respondents were inculcated to response the questionnaire keeping their pain in view. The MHLC forms A and B comprise three 6-item scale that custom the Likert retorts varying from one (strongly disagree) to six (strongly agree). Each of the sub-scales is scored individually by getting their average that could be varied from 6-36 for IHLC and CHLC, and three to eighteen for DHLC and OHLC, with higher marks depicts the higher ranks of paradigm. The MHLC forms exhibit modest consistency, with Cronbach’s alpha ranging from .6 to .75, and “one month test re-test” constancy factors oscillating from “.4 to .8” (Wallston et al., 1994).

**Table 1: Frequency, Percentage and Mean Standard Deviation of Demographic Variables (N=124)**

Variable	f (% age)
<b>Age</b>	
30-40	12(9.7)
35-39	31(25)

40-44	23(18.5)
45-49	17(13.7)
50-55	41(33.1)
<b>Education</b>	
Below metric	17(13.7)
O level/10 <sup>th</sup>	22(17.7)
A level/12	47(37.9)
Under graduate	34(27.4)
Post graduate	03(2.4)
<b>SES</b>	
Lower class	6(4.8)
Middle class	105(84.7)
Upper class	13(10.5)
<b>Comorbidity</b>	
Comorbid	74(59.7)
Non-comorbid	49(39.5)
<b>Stage of RA</b>	
Stage 1	34(27.4)
Stage 2	43(34.7)
Stage 3	26(21.0)
Stage 4	18(14.5)
<b>Nature of present illness</b>	
RF positive	70(56.5)
RF negative	50(40.3)
Other	04(3.2)
<b>Onset of illness (years)</b>	
0-5	26(21)
6-10	20(16.1)
11-15	35(28.2)
16-20	16(12.9)
21-25	20(16.1)
26-30	03(02.4)
<b>Family system</b>	
Joint	72(58.1)
More than one time	52(41.9)

### 2.5 Ethical Considerations

Ethical principles were practiced while scheming and accomplishing research. Permission to apply certain scales was requested and approved from the parent authors. The ethical considerations were carefully followed during the study as the approved certifications by the concerned organizational authority has also been provided along with the study that illustrate the authentication to follow the ethical measures during the data collection and analysis phase. The required data for this study was gathered through “purposive sampling” technique as the data was to be obtained from people with “Rheumatoid arthritis” patients who can provide their experiences and share the required data. The purpose of the study was expounded to the respondents to get the prior written consent exclusively. Only agreed participants were included in data collection process to better ensure the reliability and validity of the data. The information has been kept in anonymity and confidentiality to pertain the ethical boundaries of research. Contributors were also educated about their choice to draw from the certain research at any phase during research.

### 2.6 Procedure

An approval has been requested from the committee of ethical parameters, university of Lahore to conduct the study. After the permission to get the data from concerned sample the data was composed from hospital of Lahore. The core purpose of this research was clarified to the respondents for their consent to take part in this research. Questionnaires were distributed to the sample personally and were asked to provide the required data with possible focus, honesty and attention.

### 3. Results

The collected information was exported to SPSS version 20 in mandate to sort further analysis. This part signifies the statistical procedure applied to analyze the data. The data was analyzed in four steps.

At first, an analysis to observe the reliability of all measures was calculated incorporating the Cronbach’s alphas along its descriptive statistics. At next step, “Pearson product moment co-relation” was applied to gage the relationship of illness perception, “health locus of control” and “psycho-social adjustment”. At third step “multiple linear regression analysis” was run to examine the predictive role “health locus of control” for “psycho-social adjustment” was carried out by using SPSS. In final step, additional analysis was also carried out to see the difference between “health locus of control” and “psycho-social adjustment” with relevance to gender.

**Table 2: Reliability coefficients of the scales used in the current study (N=124)**

Variables	K	a	M	SD	Range	
					Actual	Potential
Psychosocial adjustment	39	.67	55.69	9.88	14-110	0-117
Health locus of control	18	.79	75.25	11.64	24-104	18-108
Internal	06	.70	25.30	5.34	7-36	6-36
Chance	06	.74	24.75	5.35	6-35	6-36
External	06	.62	25.19	4.90	7-35	6-36

**Note:** *k*= Number of items; *M*= Mean; *SD*= Standard deviation;  $\alpha$ = Cronbach’s alpha”

Table 2 shows standard deviation and mean of illness perception, “health locus of control” and “psycho-social adjustment”. It also portrays “internal consistency index” (alpha coefficient) for all scales opted in this work. The upshots exhibited that all scales of this analysis are internally constant as alpha coefficients score for all the above mentioned are above .7 except External “health locus of control” and “psycho-social adjustment” having .62 and .67 which are in an acceptable range.

**Table 3: Co-relation between health locus of control and psychosocial adjustment and other Demographics**

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1.Participant age	-	.05	-.12	-.06	-.00	.00	-.01	-.07	-.08	.06	.02	.03	.06	.09	.06
2.Stage of RA		-	-.06	-.11	.16	-.13	-.03	-.05	.06	.09	.20*	.14	.15	.08	.09
3.Family System			-	.45	.10	.18*	-.07	-.05	-.05	-.10	-.15	-.10	-.14	-.16	-.08
4.Nature of illness				-	-.16	-.10	-.02	.03	.04	.06	.04	.05	.01	.01	-.02
5.Onset of Illness					-	.00	.01	-.14	-.14	.09	-.03	-.13	-.07	-.09	-.02
6.HL Internal							-.29**	-.26**	-.26**	-.57***	-.56***	-.46***	-.56***	-.47***	-.61***



Table 5 reveals that there is no significant difference on “psycho-social adjustment” with  $t(122) = .85, p < .05$ . Findings also shown that male patients equal scores on “psycho-social adjustment” ( $M=60.54, SD=19.98$ ) compared to the female patients ( $M=57.29, SD=20.02$ ). The value of “Cohen's  $d$ ” was  $0.16 < (0.50)$  which specify small effect size. Results reveal non-significant mean differences on “health locus of control”  $t(122) = .59, p > .05$ . The value of “Cohen's  $d$ ” was  $0.11 < (0.50)$  which specify small effect size.

#### 4. Discussion

While measuring the association amongst the changeable items, the psycho-metric reliability of tools for gauging various theories was scrutinized. For the certain drive, numeric measurements and “internal consistency” for whole measures were counted. The small to modest value for deviances were delivered evidence that measure were in upright estimate as per the required parameters. Therefore, select of “parametric tests” such as “Pearson product moment correlation” and “multiple regressions” were justified. “Cronbach's alpha coefficients” were calculated as catalogs of inner constancy for calculations of several variables of this study. The alpha exhibited that all measures have an appropriate internal consistency. Multiple assumptions were offered and analyzed.

Amongst those firstly, it was assumed that there is progressive association between “health locus of control” (external, internal) and “psycho-social adjustment” (such as vocational background, household associations, native atmosphere, social environment, sensual relationships, and psychological distress). In this research the findings of the analysis run by “Pearson product moment correlation” revealed that outcomes were in track to the assumed hypotheses. The results of this study are in line with the study conducted by (Berglund, 2014)

This research was supported by the international and indigenous researches as well, as the international pervious literature showed that add to their wellbeing as well amongst the variables that were aligned with “psycho-social adjustment” through mutual paths, health locus control exhibited the whole significant association. This variable directs the mark to which the person believes in one's health depending on cause, inner and outer and the advanced mark in it, the higher is the level of “psycho-social adjustment”. In his study (Neipp et al., 2009) found that control beliefs predict “psycho-social adjustment” in women with chronic disease. Which are in line the results of present study.

In demographics participant's age and stage of RA are positively related with “psycho-social adjustment”, and there was no significant difference was found on the basis of gender. The results of this analysis are conforming to the results found in the study conducted by Peleg-Oren in (2003) a researcher and he specified, age had most significant correlation with “psycho-social adjustment”.

#### 5. Conclusions

Findings of this research showed that there was positive relationship between “health locus of control” and “psycho-social adjustment”. It shows that in this case with having internal or chance locus of control have link with “psycho-social adjustment”. If a person thinks that his illness is in his control or any behavior related to this illness like treatment and compliance with medication is in control positive attitude towards the doctor's advice all in control they have internal control on their illness. And this will give them a confidence and sense of good self-esteem on themselves which will definitely affect the prognosis and the effect of treatment. If the patient thinks that the illness and things related to illness are not in control of the patients and patients perceive their selves helpless and depend on the external resources. The resources could be both physical and psychological in nature. When he feels himself helpless the internal physiology and human psychology don't work in same alignment as of the prescription advised by the doctors. This decreases the effectiveness of the treatment and the progress of recovery. So this shows “health locus of control” shows a significant part in the “psycho-social adjustment” and which is directly related to the health recovery and prognosis. Similarly it revealed that male and female having RA faces same level of adjustment both in psychological and social adjustment

Moreover the results on demographic show gender have no impact with “psycho-social adjustment” of male and female. It equally varied in both male and females. Similarly sense of health locus control was also found same in both male and female this shows male and female having RA faces same level of adjustment both in psychological and social adjustment. And their sense of locus of control about their health didn't vary across different gender. During investigating the results frequent limitations were considered. Predominantly, the variables of current study were not operated in an experimental scheme and the deductions are theoretically stranded.

While conducting this study faced some limitation such as we could not determine if HLOC influences PSA or if PSA influence LOC secondly Data was collected quantitatively that bounds the construct validity. Therefore, future studies should include more objective measurements extracted from medical and hospital records. The sample, although fairly sizeable and varied in medical diagnoses, for further study sample should be large and from different socio geographical regions because sample in this study was largely homogeneous in socioeconomic class only from Lahore city, which should be from different regions. This work will contribute and provide a lead to work on such exceptional notions. Since, there is very little work done on these variables in “Rheumatoid arthritis”. In the field of mental health Psycho-education appears to be an encouraging intervention, increasing control, reducing negative emotions, and confidence in the effectiveness of treatment about the syndrome if one of the objectives of psycho-education is to advance patients’ illness perception and “health locus of control” that can improve the outcomes. The findings provide new clarifications for thoughtful effectiveness of psycho-education. The inquiry has also shown that psycho-social variables definitely relate to adjustment to RA. This study found that “health locus of control” is predictors of adjustment to illness in people with RA. This climaxes the essential need for interventions personalized to discuss these explicit variables, as they are prospective to be very operational in endorsing Adjustment.

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