**Original Article**

# Learned Resourcefulness, Anxiety and Depression Levels in Patients with Chronic Pain

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**Abstract**

**Background:** Pain is the main reason for seeking medical assistance, and is a general complaint in almost all kinds of diseases. There are many studies on the relationship between pain and mental problems. However, the role of individual coping methods in the treatment of pain is undeniable. One of these methods of coping is learned resourcefulness. This study evaluates the learned resourcefulness, anxiety and depression levels in patients with chronic pain who were admitted to algology outpatient clinics.
**Methods:** The study sample included 151 patients with chronic pain who were admitted to the algology outpatient clinic. The Introductory Information Form, Learned Resourcefulness Scale and Hospital Anxiety and Depression Scale were used for the collection of data.
**Results:** The mean anxiety scores, mean depression scores, and mean learned resourcefulness scores were 10.42±3.98, 9.80±3.78 and 108.20±18.90, respectively. As the level of learned resourcefulness increased, anxiety and depression levels decreased.
**Conclusion:** Based on our study results, we recommend the organization of education and activity programs and the evaluation of mental disturbances such as anxiety and depression with pain and the enhancement of coping skills.

**Keywords:** Learned resourcefulness, anxiety, depression, chronic pain, nursing

## Introduction

Pain is the main reason for seeking medical assistance and is a general complaint in almost all kinds of diseases (Ketenci, 2000; Breivik, Collett, Ventafridda, Cohen, & Gallacher, 2006; Kocoglu & Ozdemir, 2011). Chronic pain is a complex condition common in society. It is estimated that one-third of individuals in America (Bloodworth, Cavillo, Smith & Grabois, 2000), and approximately one-fifth of the adult population in Europe is affected by chronic pain (Heckevan, Torrance & Smith, 2013).

The prevalence of chronic pain is reported as 12 percent in Spain, 13 percent in the United Kingdom and Ireland, 26–27 percent in Italy and Poland, and 30 percent in Norway (Breivik et al., 2006).

In Turkey, the incidence of pain in the adult population has been reported as 78.6 percent, and the incidence of chronic pain reported as 38.8 percent (Kocoglu & Ozdemir, 2011).

The impact of pain and psychological status on one another is reciprocal. In addition to the role of psychological factors in the perception of chronic pain, pain also plays a negative role in the psychological status of the individual.

Cases of chronic pain are most frequently accompanied by such symptoms as depression, anxiety, helplessness, anger, aggression and despair (Ay & Evcik, 2008; Knaster, Karlsson, Estlander & Kalso, 2012; Oz, 2010).

Nurses should provide care considering both the physical and psychological requirements of the individual (Oz, 2010), and among the duties of nurses are suggesting effective coping strategies for dealing with any anxieties and depression that the individual may experience. Chronic pain is a learned behavior that is enforced by several factors, such as physical, mental and social experiences (Bloodworth et al., 2000), and coping mechanisms can also be affected by these factors.

Learned resourcefulness, as one of the more effective coping mechanisms, is a behavioral and cognitive ability that is used for the control of pain and unwanted thoughts (Coskun, 2009; Rosenbaum, 1990). High levels of learned resourcefulness in a patient can contribute to improvements in self-esteem and the reduction of negative symptoms of the disease in the individual (Baydogan & Dag, 2008). Previous studies have demonstrated that depressive symptoms are low and self-esteem and well-being are high in patients with high levels of learned resourcefulness (Dirksen, 2000; Huang et al, 2010; Huang, Perng, Chen & Lai, 2008 ).

In recent years, there have been several studies into depression and pain, although to date there has been no study investigating the non-pharmacological treatment of pain through learned resourcefulness and its relationship to depression and anxiety levels in patients suffering from chronic pain.

In the present study, we evaluate the learned resourcefulness, anxiety and depression levels in patients with chronic pain who were admitted to algology outpatient clinics.

**Research Questions**

-Is there a correlation between chronic pain and anxiety and depression?
-Is there a relationship between the intensity of pain felt by individuals and learned resourcefulness?
-Is there a relationship between learned resourcefulness with anxiety and depression at individuals have chronic pain?

**Methods**

***Participants:*** The study was performed in the Pain Policlinic of Erciyes University Gevher Nesibe Medical Faculty, and the study sample consisted of 151 patients with chronic pain who were admitted to the algology outpatient clinic between May 2014 and November 2014.

Patients who were able to communicate in Turkish, who had no psychological problems, who had no reported alcohol or substance abuse within the past three months, who had no other severe medical diagnosis, who had not undergone an operation within the past three months, and who had no history of trauma within the past six months were included in the study. The mean age of the participants was 50.84±15.34, and 63.6 percent of the patients were male, 42.4 percent were primary school graduates, 80.1 percent were married, 55.6 percent were housewives, 66.9 percent had moderate levels of income, 79.5 percent had an elementary family and 53.0 percent had complaints of pain for more than four years.

***Data collection forms in the study:*** Data collection was via an Introductory Information Form, the Learned Resourcefulness Scale, and the Hospital Anxiety and Depression Scale. The data were collected by the researcher using face-to-face interview technique and the patient records. Forms took 10-15 minutes to complete.

***Introductory Information Form:*** This scale is based on the replies of the respondents to 21 questions aimed at garnering data on such factors as age, gender, education level, marital status, occupation, etc.

***Rosenbaum Learned Resourcefulness Scale:***

This scale was developed by Rosenbaum (1980) and was adapted into Turkish by Dag (1991), and is an individual five-point Likert-type assessment scale which is composed of 36 items. The scale aims to measure the extent to which the individual uses cognitive strategies for the control of stress. According to the scale, “never defined” is calculated as 1 point, “slightly defined” as 2 points, “quite well defined” as 3 points, “well defined” as 4 points and “very well defined” as 5 points, while the items numbered 4, 6, 8, 9, 14, 16, 18, 19, 21, 29 and 35 are scored in reverse. The lowest possible score is 36, while the maximum score is 180. A high score indicates an improvement in the ability of the individual to control him/herself, and that the

individual often makes use of coping skills (Savasir & Sahin, 1997).

The reliability coefficient of the scale was calculated using an internal consistency and test-retest method. The Cronbach's alpha internal consistency coefficient was found to be 0.78, and the total correlation was found to be significant at an interval of 0.11–0.51 (Dag, 1991). In the present study, the Cronbach's alpha value of the learned resourcefulness scale was found to be 0.85.

***Hospital Anxiety and Depression Scale (HADS):*** This is a self-declaration scale that was developed by Zigmond and Snaith (1983) to determine the risk of anxiety and depression in individuals with physical diseases who are admitted into primary care health service and to measure the intensity and changes in the intensity of anxiety and depression. The aim of the scale is not to diagnose, but to identify at-risk groups in terms of anxiety and depression among individuals with physical diseases. The scale is based on the replies of the respondents to 14 questions and has two subscales, each comprising seven questions, with odd numbers forming the anxiety subscale (HADS-A) and even numbers forming the depression subscale (HADS-D) (Bjelland, Dahl, Haug & Neckelmann, 2002). The scoring of each item is different, with items 1, 3, 5, 6, 8, 10, 11 and 13 demonstrating gradually decreasing severity based on scores of 3, 2, 1 and 0; and items 2, 4, 7, 9, 12 and 14 scored as 0, 1, 2, 3 (Aydemir & Koroglu, 2012).

The validity and reliability study of the scale was established by Aydemir et al. (1997) in Turkey, with a Cronbach's alpha coefficient of 0.85 found for the anxiety subscale, and 0.77 for the depression subscale. The cut-off point of the Turkish version of the HAD scale was found to be 10 for the anxiety subscale and 7 for the depression subscale (Aydemir & Koroglu, 2012). In the current study, the Cronbach's alpha coefficient was found to be 0.76 for the anxiety subscale and 0.66 for the depression subscale.

***Ethical statements***

At all stages of the study, ethical principles were taken into account. Prior to the study, Erciyes University Clinical Studies Ethical Committee approval was obtained, as well as institutional permission from the Erciyes University Health Practice and Research Center. All participants in the study were informed about its aim and written informed consent was obtained from each.

***Statistical Analysis***

The data garnered throughout the study were analyzed in a digital medium. The scores of learned resourcefulness and hospital anxiety and the depression scale of the participants formed the dependent variables. Descriptive characteristics such as age, gender, and education level, and the participants' experiences with pain formed the independent variables. The convenience of the data to a normal distribution was evaluated with a Shapiro-Wilk test, and it was found that data had an abnormal distribution, and so a Kruskall-Wallis test, a Mann-Whitney U-test and a Spearman Correlation test were used for the assessment of the data. A $p$ value of $<0.05$ was considered statistically significant.

**Results**

The results of the study, which was carried out to determine the relationship between learned resourcefulness, anxiety and depression in patients with chronic pain, are presented below. The mean severity of pain was 6.65±2.11. The pain increased with movement in 31.2 percent of the patients and decreased during rest in 38.4 percent of the patients. Furthermore, 71.5 percent of the patients needed help in meeting personal requirements when in pain, and pain negatively affected the quality of life of 95.4 percent of the patients. Among the patients who had reported negativity in their life, 46.5 percent said that their daily activities were negatively affected, and 39.8 percent of the patients indicated a family history of pain.

The mean anxiety score, the mean depression score and the mean learned resourcefulness score of the participants were 10.42±3.98, 9.80±3.78 and 108.20±18.90, respectively.

Patients with large families, those who lived with their parents or with a single parent, as well as the participants who stated that they were not using any method to reduce pain, and those who perceived their health status as good, recorded higher mean learned resourcefulness scores than the other groups, with a statistically significant difference identified between the groups ($p<0.05$) (Table 1).

**Table 1.** Learned Resourcefulness and Hospital Anxiety Depression Scale scores according to the descriptive characteristics of the patients who participated in the study

| Defining Characteristics | Learned Resourcefulness Scale Point Average | Hospital Anxiety Depression Scale Point Average | |
|---|---|---|---|
| | | HAD-A | HAD-D |
| | $\bar{x}$ ± SS(Median) | $\bar{x}$ ± SS(Median) | $\bar{x}$ ± SS(Median) |
| **Gender** | | | |
| Female | 108.61±20.52(105.00) | 10.42±3.96 (11.00) | 10.03±4.02(10.00) |
| Male | 107.49±15.84(108.00) | 10.41±4.07 (10.00) | 9.40±3.31(10.00) |
| *p* | 0.898 | 0.927 | 0.396 |
| **Marital Status** | | | |
| Married | 107.71±19.39(106.00) | 10.38±3.90(11.00) | 9.90±3.49(10.00) |
| Unmarried | 110.20±16.96(110.00) | 10.60±4.35(11.00) | 9.40±4.80(10.00) |
| *p* | 0.475 | 0.790 | 0.829 |
| **Employment Status** | | | |
| Yes | 108.77±14.40(108.00) | 10.32±3.42(10.00) | 9.83±3.36(10.00) |
| No | 108.08±19.95(105.50) | 10.45±4.13 (11.00) | 9.79±3.89(10.00) |
| *p* | 0.670 | 0.624 | 0.862 |
| **Family Type** | | | |
| Nuclear family | 106.28±17.49(104.50) | 10.49±3.71 (11.00) | 9.87±3.82(10.00) |
| Extended family | 118.76±22.96(118.00) | 9.53±4.93 (8.00) | 8.69±3.06(8.00) |
| Fragmented family | 99.40±8.20(100.00) | 13.40±4.21 (15.00) | 13.80±3.70(14.00) |
| *p* | **0.013** | 0.112 | **0.020** |
| **Individuals who lived together** | | | |
| Alone | 96.26±14.41(100.00) | 13.00±3.70 (12.00) | 12.80±3.78(14.00) |
| With his wife | 105.02±16.58(104.00) | 10.48±4.13(12.00) | 10.14±3.80(11.00) |
| With wife and child/children | 109.30±18.43(111.00) | 10.55±3.83 (11.00) | 9.50±3.18(10.00) |
| With his son/daughter's family | 113.77±23.88(112.00) | 8.22±4.94 (8.00) | 9.44±3.90(8.00) |
| Other | 114.10±20.58(113.00) | 9.41±3.43 (10.00) | 8.58±4.28(10.00) |
| *p* | **0.029** | **0.035** | **0.045** |
| **Pain Reducing Factors** | | | |
| Rest | 102.25±15.91(102.00) | 11.20±4.06 (11.50) | 10.82±2.97(11.00) |
| Medicines | 110.86±20.46(110.00) | 10.09±4.61(9.50) | 10.04±3.53(11.00) |
| Multiple answers | 110.88±16.04(105.00) | 9.22±2.69 (10.00) | 8.11±3.32(8.50) |
| Other (light walking, massage, hot-cold application) | 103.63±19.19(100.00) | 11.27±2.72(11.00) | 9.54±4.92(10.00) |
| There is no way to reduce pain | 115.07±20.83(117.00) | 9.80±4.16(10.00) | 9.04±4.43(9.00) |
| *p* | **0.015** | 0.224 | **0.048** |
| **Help in Meeting Individual Needs Needy Hearing When Pain** | | | |
| Yes | 107.41±19.89(104.50) | 10.70±4.00(11.00) | 10.35±3.51(11.00) |
| No | 110.18±16.21(111.00) | 9.72±3.90 (9.00) | 8.41±4.10(8.00) |
| *p* | 0.237 | 0.074 | **0.005** |
| **The Story of Pain in the Family** | | | |
| There no/absent | 107.79±20.98(104.00) | 9.90±3.81 (10.00) | 9.27±3.70(10.00) |

| | | | |
|---|---|---|---|
| There is/exists | 108.84±15.50(108.00) | 11.27±4.15 (11.00) | 10.61±3.81(11.00) |
| *p* | 0.740 | **0.040** | **0.035** |
| **Health Perception Status** | | | |
| Poor | 104.10±20.11(104.00) | 11.49±3.39 (12.00) | 10.57±3.40(11.00) |
| Medium | 110.10±17.42 (110.00) | 9.89±4.19 (10.00) | 9.92±3.63(10.00) |
| Good | 117.16±15.59 (124.00) | 8.22±4.27 (8.00) | 6.38±4.00 (7.00) |
| *p* | **0.005** | **0.002** | **0.000** |
| **Response Status When There is a Distress** | | | |
| Not react | 106.88±19.16 (102.00) | 10.25±3.76 (10.00) | 10.81±3.29(11.00) |
| Talk/share with others | 113.46±15.40 (117.50) | 9.73±4.40 (10.00) | 8.66±3.39 (9.00) |
| Cry | 106.56±21.22 (103.00) | 11.46±3.81 (12.00) | 10.56±3.71(11.00) |
| Use violence | 100.81±12.24 (100.00) | 11.09±2.21 (11.00) | 10.18±2.67(10.00) |
| Other | 111.83±17.10(120.00) | 7.66±3.81(8.00) | 7.16±4.48(7.00) |
| *p* | 0.057 | **0.009** | **0.009** |

**Table 2.** Learned Resourcefulness and Hospital Anxiety Depression Scale Scores of patients who participated in the study (n=151)

| **Variables** | ***n*** | **%** | **Age** $\bar{x}$ **± *SS*** | **LR** $\bar{x}$ **± *SS*** | **Pain severity** $\bar{x}$ **± *SS*** |
|---|---|---|---|---|---|
| **HADS-A** | | | | | |
| Under threshold value (0-7 points) | 31 | 20.5 | 49.64±17.77 | 123.32±19.67 | 6.19±2.31 |
| Above threshold value (8-21 points) | 120 | 79.5 | 51.15±14.72 | 104.30±16.67 | 6.77±2.05 |
| *p* | | | .628 | **.001** | .173 |
| **HADS-D** | | | | | |
| Under threshold value (0-7 points) | 43 | 28.5 | 48.93±18.39 | 120.44±19.19 | 5.79±2.43 |
| Above threshold value (8-21 points) | 108 | 71.5 | 51.60±13.97 | 103.33±16.50 | 7.00±1.87 |
| *p* | | | .336 | **.001** | **.001** |

**LR:** Learned Resourcefulness, **HADS-A:** Hospital Anxiety Depression Scale- Anxiety, **HADS-D:** Hospital Anxiety Depression Scale-D

**Table 3.** Correlation between age, learned resourcefulness, anxiety, depression and severity pain of patients who participated in the study

| | | | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|---|
| 1. | Age | r | 1.00 | | | | |
| | | p | 0.000 | | | | |
| 2. | LR | r | -.119 | 1.00 | | | |
| | | p | .145 | 0.000 | | | |
| 3. | HADS-A | r | .017 | -.402** | 1.00 | | |
| | | p | .836 | **.001** | 0.000 | | |
| 4. | HADS-D | r | .116 | -.378** | .506** | 1.00 | |
| | | p | .158 | **.001** | **.001** | 0.000 | |
| 5. | Pain Severity | r | .044 | -.186* | .178* | .122 | 1.00 |
| | | p | .588 | **.022** | **.028** | .136 | 0.000 |

**LR:** Learned Resourcefulness. **HADS-A:** Hospital Anxiety Depression Scale- Anxiety. **HADS-D:** Hospital Anxiety Depression Scale-D *p< 0.05 **p< 0.01

When the mean anxiety and depression scores were examined, the participants who lived alone, who had a family history of pain and who assessed their health status as poor had significantly higher anxiety and depression scores ($p<0.05$) (Table 1). Furthermore, the anxiety and depression scores of the participants who responded to distress by reading the Quran and by taking walks was significantly lower ($p<0.05$) (Table 1). On the other hand, participants from broken families and those who needed help in meeting personal requirements when in pain had high mean depression scores ($p<0.05$) (Table 1).

Among the participants who had chronic pain, 79.5 percent had scores higher than the threshold in the HAD-A scale and 71.5 percent had scores higher than the threshold in the HAD-D scale. The participants with anxiety and depression scores above the threshold had lower mean learned resourcefulness scores than the participants who had scores below the threshold ($p<0.01$). Furthermore, the severity of pain was higher in the individuals with depression scores above the threshold ($p<0.01$) (Table 2).

In the current study, a weak negative correlation was identified between pain severity and learned resourcefulness score ($p<0.05$), and a weak positive correlation was detected between the severity of pain and anxiety scores ($p<0.05$). A moderate negative correlation was identified between learned resourcefulness, anxiety and depression scores ($p<0.01$). No correlation was found between the scores and age ($p>0.05$) (Table3).

When the learned resourcefulness sub-factors were examined, the participants with scores above the threshold in the HADS-A and HADS-D scales had lower scores in pain control, planned behavior, mood control, attention orientation and impulse control ($p<0.05$). It was found that the participants who had anxiety and depression scored high in the control of unwanted thoughts ($p<0.05$). Furthermore, the respondents who had depression scored low in the sufficiency and becalming factors ($p<0.05$).

**Discussion**

Chronic pain is a stressful condition, and has a negative effect on personal abilities and environmental sources of the individual and thus, damages the psychological status of the individual. This can lead to impairments in life quality, increases in loss of ability and difficulties in personal relations, and as a result, forms a basis for psychological disorders (Lame, Peters, Vlaeyen, Kleef & Patijn, 2005).

It is well-known that chronic pain causes a reduction in self-esteem (Sayar, Bilen & Arikan, 2001) and it has been found that pain is associated with psychiatric disorders in 16.9 percent of patients (Benjamin, Morris, McBeth, Macfarlane & Silman, 2000). There have been many studies demonstrating the presence of depression or anxiety in patients with chronic pain (Cicero, Lynskey, Todorov, Inciardi & Surratt, 2008; Dersh, Gatchel, Polatin & Mayer, 2002; Myhr & Augestad, 2013), and it has also been shown that individuals with such disorders as anxiety and depression that the symptoms and severity of pain are higher (Tutuncu & Gunay, 2011). In the present study, similar to the findings of previous studies, 79.5 percent of the individuals with chronic pain suffered also from anxiety, and 71.5 percent had depression. Furthermore, the severity of pain was high in patients with anxiety and depression (Table 2). Although the reason for this has not been clarified exactly, pain is known to be associated with all depressive and anxiety disorders (Heidari & Tavafian, 2016; Tutuncu & Gunay, 2011). The inability to express feelings and negative effects on life and sleep quality can cause depression or anxiety (Elliott, Renier & Palcher, 2003; Hong, Kim, Shin & Huh, 2014; Tavsanli, Ozcelik & Karadakovan, 2013). Furthermore, it has been reported that chronic pain is a physical and psychological condition that affects emotional status, and anxiety and depression can increase in such individuals, in that it affects the same biological pathways and uses same neurotransmitters as affective disorders (Tutuncu & Gunay, 2011).

Having a high level of learned resourcefulness is one of several factors that has been shown to be effective on anxiety and depression in individuals with chronic disorders (Baydogan & Dag, 2008; Huang et al. 2008; Huang et al. 2010). In the previous studies, individuals with high levels of learned resourcefulness were found to be able to overcome unfavorable situations more easily, were affected by stressful conditions to a lesser extent, and experienced psychological problems less frequently. (Lange & Lingen-Herrmann, 2007; Rosenbaum & Palmon, 1984). Lai (2011) reported that learned resourcefulness had a direct effect on the

adaptation skills of depressive individuals. As conveyed by Huang et al. (2008), the study by Vealadee identified a negative relationship between learned resourcefulness and depressive perception. In addition, the level of learned resourcefulness was found to be significantly lower in patients with high anxiety and depression levels (Rosenbaum & Palmon, 1984). In the present study, the mean learned resourcefulness scores of the respondents was 108.20±18.90, and a moderate negative correlation was found between learned resourcefulness, anxiety and depression levels ($p<0.01$) (Table 3).

Individuals suffering from chronic pain make use of several strategies to cope with pain. While individuals with high levels of learned resourcefulness mainly use active coping strategies (exercises, breathing techniques, cognitive strategies), those with low levels of learned resourcefulness use passive coping strategies (ignoring, anger) (Kennet, O'Hagan & Cezer, 2008). Individuals with high levels of learned resourcefulness identify their inner world better, have the ability to use different support techniques and have the foresight of how to overcome pain (Kennet et al., 2008). The findings of the present study support this knowledge. In the present study, the severity of pain was lower in the respondents with high learned resourcefulness levels, to a statistically significant degree ($p<0.01$) (Table 3). When examined learned resourcefulness of the subscales, the individuals with low learned resourcefulness scores and with anxiety and depression scores above the threshold had low scores in pain control, planned behavior, mood control, attention orientation and compulsion control. On the other hand, it was found that the individuals with low learned resourcefulness scores and with anxiety and depression levels above the threshold had had high scores in the control of unwanted thoughts.

## Conclusion

Based on the findings of the current study, it is recommended that:

- Education and activity programs are arranged to increase learned resourcefulness levels of individuals,
- Awareness should be raised among nurses of the fact that anxiety and depression levels in individuals with pain are affected by such factors as the people that the individual lives with, the presence of a family history of pain and the health perception status of the individual, and this data should be utilized during patient care,
- A continuous and dynamic relationship be established between the pain policlinic and other disciplines that work with the individual with pain, and with the psychiatry department, ensuring the utilization of consultation-liaison psychiatry services,
- Mental problems such as anxiety and depression are evaluated together with pain to increase the coping skill in individuals with pain, and
- The study is repeated with patient groups of different cultures.

**Limitations of the Study:** The fact that this work has been carried out in a single area prevents the findings of the study from being generalized.

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