**International Journal of Medical Science and Clinical Invention 5(01): 3473-3476, 2018**
**DOI:10.18535/ijmsci/v5i1.22** **ICV 2016: 77.2**
**e-ISSN:2348-991X, p-ISSN: 2454-9576**


**Research Article**

# The Effect Range of Motion (Rom) Exercise on Lower Extremities Joint Pain Level for Elderly at Gampong Tanjung Selamat Kec. Darussalam Kab. Aceh Besar

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**ABSTRACT:**

**BACKGROUND**

**Joint pain is a condition that often experienced for elderly and caused by a degenerative disease that causes reduced joint synovial fluid and give a pain and joint stiffness. ROM excercise is an exercise to increasing flexibility of muscles and joints.**

**PURPOSE**

**The purpose of this research was to find out the effect of ROM excercise on lower extremities joint pain level for elderly.**

**METHODS**

**The method of this research was a quasi experimental research design consisted of pre and postest without control. The data collected by 6 time for 2 weeks, with amount of sample counted 33 respondents. The level of the lower extremities joint pain was measured by VAS pain scale. The data were analyzed with SPSS 17 program with non parametric statistic test, to see the scale of lower extremities joint pain in elderly when there was no movement was measured by McNemar test, while moving (walk) and to see the general lower extremities pain scale before and after ROM exercise was measured by Marginal Homogenity test.**

**RESULTS**

**The research result showed the differences of joint pain scale before and after ROM exercise when the elderly has no movement (*p* value = 0,05), and there is a differences for pain scale before and after ROM exercise when the elderly has movement (*p* value = 0,005). Generally, there is a difference joint pain level between before and after ROM exercise (*p* value = 0,014).**

**CONCLUSIONS**

**After doing ROM exercise for 6 times, the reduction of joint pain in elderly was occured. When there was no any movement, the level of low joint pain in elderly before ROM exercise was about 30,3% to being 3% after ROM exercise. When moving (walk) the level of low joint pain which is being suffering by elderly from 54% before ROM exercise being 36,4% after ROM exercise. While generally before ROM exercise, the level of medium joint pain in elderly was about 15,2% before ROM exercise being null (0%), means that no body suffers joint pain after ROM exercise.**

**Statistically, based on non-parametric test by McNemar and Marginal Homogeneity test, there was the significant difference in scale of average scores in joint pain before and after ROM exercise when there was no any movement with P-value 0,004 and when the was a movement (walk) P-value 0,005. Generally, there was the difference in avarage scores in joint pain in elderly before and after ROM exercise with P-Value 0,014. So, ROM exercise can be used as a way to decrease the scale of joint pain in erderly.**

**Key words : Elderly, Joint Pain, ROM Exercise.**

## INTRODUCTION

Joint pain is a disease that is often experienced by the elderly, From 5 million people in the UK, 80% of joint pain sufferers are over the age of 70 years. Likewise from 40 million Americans, an estimated 70-90% of patients with joint pain are 75 years old (Bachtiar A, 2010)



In general, the prevalence of joint disease in Indonesia is very high at 30.3%. At the age of 45-55 the prevalence is 46.3%, the age of 55-64 is 56.4%, the age of 65-74 is 62.9% and the age of over 75 is 65.4% (Badan Penelitian dan Pengembangan Kesehatan, Depkes RI, 2008). Efforts to overcome joint pain in elderly, can be done with pharmacology and nonpharmacology. Pharmacologic treatment for the elderly often has side effects on the gastroenteritis and central nervous system (Stanley, 2012). Non-pharmacologically, it can be

done with mild exercises to maintain movement and strength thus preventing deformity in elderly people with joint pain such as range of motion exercises (ROM).

The range of motion (ROM) exercise is an exercise performed to maintain or improve the level of perfection of the ability to move the joints normally and completely to increase muscle mass and muscle tone. ROM exercises are useful for preventing joint stiffness, improving blood circulation and improving joint mobilization (Potter & Perry, 2005).

## RESEARCH QUESTION

How is the effect of range of motion (ROM) exercise on lower extremity joint pain in elderly At Gampong Tanjung Selamat Kec. Darussalam Kab. Aceh Besar?

## RESEARCH OBJECTIVE

To find out the difference of lower extremities of joint pain level before and after giving exercise of Range of Motion (ROM) toward lower extremities joint pain level for elderly At Gampong Tanjung Selamat Kec. Darussalam Kab. Aceh Besar.

## RESEARCH METHOD

The type of research used in this study is quasi experimental research with the design of pre and post test without control. The sampling technique used in this research is purposive sampling that is elderly with joint pain of lower extremity, still able to move and willing to be respondent amounting to 33 people.

## TIME AND PLACE OF RESEARCH

This research was conducted in Gampong Tanjong Selamat Kecamatan Darussalam Kabupaten Aceh Besar. Conducted from 9 to 28 May 2016, starting from checking or collecting the elderly who have lower extremity joint pain, while for ROM exercise interval from 16 to 28 May 2016, with frequency 3 times a week and done for 2 weeks or 6 Times of practice.

## DATA ANALYSIS

Statistic test used Non-Parametric, to see the scale of lower extremity joint pain in the elderly at rest using the McNemar Test to see the scale of lower extremity joint pain (moving), as well as to see the scale of knee joint pain in general before and after the ROM exercise using the Marginal Homogeneity Test.

## RESULT OF THE RESEARCH

**Tabel. 1 The frequency distribution of the elderly based on the lower extremity joint pain level prior to the ROM exercise in Gampong Tanjong Selamat Kec. Darussalam Aceh Besar, May 2016.**

| Variable | Pain level | Frequency | Percent |
|---|---|---|---|
| Before ROM | No pain | 3 | 9,1 |
| | Low pain | 25 | 75,8 |
| | Medium pain | 5 | 15,2 |
| | Total | 33 | 100 |



**Tabel. 2 The frequency distribution of lower extremity joint pain scale at rest before and after ROM exercises in Gampong Tanjong Selamat Kec. Darussalam Kab. Aceh Besar, May 016**

| Variable | Pain level | Frequency | Percent |
|---|---|---|---|
| At rest | No pain | 23 | 69,7 |
| | Low pain | 10 | 30,3 |
| | Total | 33 | 100 |

**Tabel. 3The frequency distribution of lower extremity joint pain scale at moving (walk) before and after ROM exercises in Gampong Tanjong Selamat Kec. Darussalam Kab. Aceh Besar, May 016**

| Variable | Pain level | Frequency | Percent |
|---|---|---|---|
| At moving (walk) | No pain | 2 | 6,1 |
| | Low pain | 13 | 39,4 |
| | Medium pain | 18 | 54,5 |
| | Total | 33 | 100 |

**Tabel. 4 The frequency distribution of lower extremity joint pain scale after ROM exercisesin Gampong Tanjong Selamat Kec. Darussalam Kab. Aceh Besar, May 016**

| Variable | Pain level | Frequency | Percent |
|---|---|---|---|
| At moving (walk) | No pain | 4 | 12,1 |
| | Low pain | 29 | 87,9 |
| | Total | 33 | 100 |

**Tabel. 5 The frequency distribution of lower extremity joint pain scale at rest after ROM exercises in Gampong Tanjong Selamat Kec. Darussalam Kab. Aceh Besar, May 016**

| Variable | Pain level | Frequency | Percent |
|---|---|---|---|
| At rest | No pain | 32 | 97,0 |
| | Low pain | 1 | 3,0 |
| | Total | 33 | 100 |

**Tabel. 6 The frequency distribution of lower extremity joint pain scale at moving (walk) after ROM exercises in Gampong Tanjong Selamat Kec. Darussalam Kab. Aceh Besar, May 016**

| Variable | Pain level | Frequency | Percent |
|---|---|---|---|
| At moving (walk) | No pain | 4 | 12,1 |
| | Low pain | 17 | 51,5 |
| | Medium pain | 12 | 36,4 |
| | Total | 33 | 100 |

**Tabel 4.8 The frequency distribution of lower extremity joint pain scale before and after ROM exercises in Gampong Tanjong Selamat Kec. Darussalam Kab. Aceh Besar, May 016**

| | Joint pain before ROM and after ROM |
|---|---|
| Distinct Value | 3 |
| Off-Diagonal Cases | 6 |
| Observed MH Statistic | 11.000 |
| Mean MH Statistic | 8.000 |
| Std. Deviation of MH Statistic | 1.225 |
| Std. MH Statistic | 2.449 |
| Asymp. Sig. (2-tailed) | 0.014 |

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**Tabel 4.9**

**Distribution of lower extremity joint pain scale before and after ROM exercises in Gampong Tanjong Selamat Kec. Darussalam Kab. Aceh Besar, May 016**

| Joint pain before ROM and rest | after ROM at |
|---|---|
| N | 33 |
| Exact Sig. (2-tailed) | 0.004 |

**Tabel 4.10 Distribution of lower extremity joint pain scale before and after ROM exercises at moving (walk) in Gampong Tanjong Selamat Kec. Darussalam Kab. Aceh Besar, May 016**

| | Joint pain before ROM and after ROM at moving (walk) |
|---|---|
| Distinct Value | 3 |
| Off-Diagonal Cases | 8 |
| Observed MH Statistic | 14.000 |
| Mean MH Statistic | 10.000 |
| Std. Deviation of MH Statistic | 1.414 |
| Std. MH Statistic | 2.828 |
| Asymp. Sig. (2-tailed) | 0.005 |

Statistically based on non parametric test is McNemar and Marginal Homogeneity test, there is a significant difference of mean value of lower extremity joint pain scale before and after ROM exercise at rest with p-value 0.004, When moving (walk) p-value 0.005. In general there is difference of mean value of lower extremity joint pain in elderly before and after exercise of ROM with p-value 0,014.

## CONCLUSION

There is a difference between before and after giving ROM exercise with p value 0.014 where Ho is rejected which means there is a significant difference of mean value of pain scale between before and after ROM exercise.

## SUGGESTION

ROM exercises can be used as an alternative therapy to reduce joint pain in the elderly. Although the findings of this study indicate a decrease in joint pain scale lower extremities in elderly after giving ROM exercise, but this study is inseparable from the limitations, so that more research is needed by perfecting the method of research so that get consistent truth.

## REFERENCES

Ambardini, L. R, Jurnal peran latihan fisik dalam manajemen terpadu osteoartritis

American Geriatrics Society. (2001). Journal of the American Geriatrics Siciety vol. 49

Arikunto. (2000). Prosedur Penelitian : suatu pendekatan praktek Ed. 3, Jakarta : Rineka Cipta

Bachtiar, A. (2010). Tesis pengaruh ekstrak jahe (zibgiber officinale) terhadap tanda dan gejala osteoartritis pada pasien rawat jalan di Puskesmas Pandawangi kota Malang.

Badan penelitian dan pengembangan kesehatan, Depkes RI. (2008). Riset kesehatan dasar (Riskesdas) 2007, Laporan Nasional 2007

BKKBN. (2012). Pembinaan Kesehatan Fisik bagi Lansia. Jakarta

Brunner & Suddarth. (2002). Buku Ajar Keperawatan Medikal Bedah. Ed. 8 vol.3, Jakarta: EGC

Darmojo. (1999). Buku Ajar Geriatri : Ilmu Kesehatan Usia Lanjut, Jakarta : FKUI

Dharma, K. (2011). Metodologi Penelitian Keperawatan, Jakarta : Trans Info Media

Hamijoyo, L. (2014). Pengapuran sendi atau osteoartritis, copyright 2014 Perhimpunan Reumatologi Indonesia

Handoko, S & Richard, D. S. (2013). Upaya menurunkan keluhan nyeri sendi lutut pada lansia di Posyandu lansia sejahtera, Jurnal Stikes Volume 6, No. 1 Juli 2013

Hardywinoto. (2007). Panduan Gerontologi, Jakarta : Gramedia Pustaka Umum

Henniwati. (2008). Faktor-faktor yang mempengaruhi pemanfaatan pelayanan posyandu lanjut usia di wilayah kerja Puskesmas Aceh Timur.

Kemenkes RI. (2013). Gambaran Kesehatan Lanjut Usia di Indonesia, Jakarta

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Kosasi Kwek. (2013). Sakit lutut, asam urat atau rematik, http ://kesehatan. Kompasiana.com/medis/2013/11/02/sakit-lutut-asam-urat-atau-rematik-atau-apa— 603890.htlm, di akses tanggal 3 September 2014

Long, Barbara C. (1998). Keperawatan Medikal Bedah : Suatu pendekatan proses keperawatan,

Bandung : YIAPK

Maryam, S, dkk. (2008). Mengenal usia lanjut dan

perawatannya, Jakarta : Salemba Medika

Nugroho. (2000). Keperawatan Gerontik & Geriatrik, Ed. 3, Jakarta : EGC

Nursalam. (2003). Konsep dan penerapan Metodologi penelitian ilmu keperawatan : pedoman

skripsi, tesis, dan instrumen penelitian keperawatan, Jakarta : Salemba Medika

Padila. (2013). Buku Ajar Keperawatan Gerontik dilengkapi aplikasi kasus asuhan keperawatan gerontik, terapi modalitas, dan sesuai kompetensi standar, Nuha Medika, Yogyakarta

Partono, M. (2009). Osteoartritis, mukipartono.com, di akses tanggal 15 Oktober 2014

Potter & Perry. (2005). Buku Ajar Fundamental Keperawatan : Konsep, proses dan praktik, Ed.

4 Vol. 2, Jakarta : EGC

_____(2009). ***Fundamentals of Nursing fundamental Keperawatan*, Ed. 7, Jakarta :** Salemba Medika

Prasetyo, N. S. (2010). *Konsep dan proses keperawatan nyeri*, Ed. 1, Yogyakarta : Graha ilmu

Santoso, S. (2010). Statistik non parametrik konsep dan aplikasi dengan SPSS, Gramedia, Jakarta

Stanley. (2012). *Buku Ajar Keperawatan Gerontik*, Ed. 2, Jakarta : EGC

Van Baar. (1999). *Article Effectiviness of exercise therapy in patients with osteoarthritis of the hip or knee*

Yatim, F. (2006). Penyakit tulang dan persendian arthritis atau arthralgia, Jakarta : Pustaka populer obor

Widodo, A & Sihjayadi, I. Pengaruh *free active exercaise* terhadap peningkatan range of motion (ROM) sendi lutut wanita usia lanjut, *Prosiding seminar ilmiah Nasional Kesehatan*, ISSN : 2338-2694