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Survey Study on Complementary Alternative Medicine Care Use for Patients with Low Back Pain in Japan

Hajime Tanabe

The Graduate School of

Hanseo University

Department of Chiropractic

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Supervised by Professor HanSuk Jung

Dissertation submitted to the Doctor degree by

Hajime Tanabe

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Hajime Tanabe

Dissertation submitted to the Doctor degree by

Hajime Tanabe is approved.

Chairman/Advisor JooHyun Ham *signature*

Advisory Committee HanSuk Jung *signature*

Advisory Committee SeungHae Han *signature*

Advisory Committee DongHeui Kim *signature*

Advisory Committee YongSeok Lee *signature*

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Hanseo University

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Abstract

The study investigated patients with low back pain (LBP) who were following complementary or alternative medicine (CAM) as of the study period or had followed one previously to reduce LPB in order to examine LBP patients' CAM use and perceived CAM effects on their pain levels.

As a result, the study found that the pain levels of LBP patients dropped from their usual status after using CAM. And to reduce LBP, the study participants were found to have used chiropractic, acupressure and massage, and acupuncture most frequently in order among the CAM methods. Concerning their CAM use status, experience of side effect was less frequently in men than women (p<0.01). As for their reason of CAM use, in all age groups, the participants reported it's because fewer side effects of CAM compared with other therapies and other people's improvement cases (p<0.05). More single participants (p<0.05) and the group with less than university education background (p<0.05) said the used CAM because of fewer side effects. As to the perceived LBP levels between before and after CAM use, all height groups were found to experienced reduced pain levels from their pre-CAM status while the weight groups of 50kg or under, between 61kg and 70kg and 71kg or over said the largest decrease in their pain levels.

Key Words: Low Back Pain, Complementary Therapy, Pain Reduction, Height, Weight

I. Introduction

1. Research Purpose and Necessity

Amid the rising interest in complementary and alternative therapies in many states across the world, it has been reported that about 30～50% of the adults in the US, Australia, UK, Taiwan, Singapore, etc. was using complementary or alternative therapies (Lim et al., 2005; Tindle et al., 2005; Chang et al., 2007).

As there are numerous factors working on people's use of complementary and alternative therapies such as socioeconomic or individual values, there has yet to be a clear and inclusive theory explaining this increasing use of complementary and alternative therapies in the medical field (Austin, 1998). However, diverse efficacies are expected from such therapies such as symptom alleviation, enhanced living quality and disease treatment (Richardson et al., 2004).

In Korea, complementary therapies used to be viewed as an unproven way of treatment or unaccepted system of medication unlike the clinical medicine (Cassileth & Chapman, 1996). But as more holistic and natural approaches were introduced, complementary therapy was newly defined as diversified medication and health management systems, procedures and products not regarded as part of the modern mainstream medication. Complementary therapy refers to the kinds of treatments using less risky methods to strengthen natural healing power of human such as physical or emotional relaxation, exercises and dietary control (NCCAM, 2008).

In South Korea, it was reported that 91.7% (Kim, 2003) of the patients with spinal diseases, 91.1% of lung cancer patients, 77.5% of rheumatoid arthritis patients (Lee & Son, 2002), 75% of cancer patients (Chang et al., 2006), 72% of atopic dermatitis patients (Ko et al., 2001), 71.6% of stroke patients (Mok & Cho, 2004), and 65% of

diabetes patients had used an alternative or complementary therapy. The therapies used are diverse including chiropractic therapy and Chuna manual treatment. Their usage ratio ranged 78～94%, relatively higher (Park et al., 2000; Park et al., 2003; Shreffler et al., 2005).

Patients make various efforts to improve their health conditions through many information sources. As for patients with low back pain (LBP), since they are normally characterized to complain chronic pain in the low back area, they try many different methods ranging from pain relief to operations. For this reason, such patients use complementary therapy in parallel with hospital treatment.

Despite the considerably high reliance on medication of LBP patients, their chiropractic therapy use was reported to be higher as well, indicating their alternative therapy dependence is significantly large.

Still, there are only far less than sufficient amount on studies on low back pain patients to compare their physical characteristics and status related to complementary therapy use. In this recognition, this research seeks to investigate the overall status of LBP patients' complementary therapy use and compare their pain level alleviation degrees according to their physical characteristics. By doing so, the present study aims to produce the basic data materials for the understanding of LBP patients' complementary therapy use and satisfaction.

II. Theoretical Background

1. Low Back Pain

Sixty to eighty percent of the whole population is reported to suffer from low back pain and of them, 90% recovers within 2 months regardless of treatment. But during the symptom continues, individual and social life is affected (Park et al., 2005).
In South Korea, low back related diseases ranked 10th place in 2010 from the 15th in 2007 (Health Insurance Review & Assessment Service, 2011). Of the patients with occupational diseases, 4,008 (57.8%) were LBP patients, accounting for the largest part.

Low back pain does not refer to any certain specific disease but it refers to general pains possibly experienced in the lumbar area. LBP is caused by some mechanical pressure or power imbalance that damages the lumbar area or some lesion that causes a pathologic status. It is mostly triggered by problems in the range from the 2nd vertebrate where spinal nerves end to SI joint. Given the human physical characteristic that body weight is loaded on that area, the lumbar area is prone to more damages and diseases, recording the highest frequency of pain (Jeon, 2013).

Low back pain is recognized as a multi-dimensional syndrome affected by social, environmental and individual factors. LBP related factors are largely grouped in three areas – disk related causes, vertebra related causes and inflammation/tumor/injury.

Clinical causes of low back pain vary widely and are related to physical and psychosocial functions. Known causes are bad postures, weaker muscles, much stress, poor gait posture, gastritis, nerve disorder, obesity, tiredness, psychological pressure, heavy metal poisoning, insufficient exercise, insufficient calcium intake, etc. Population sociological reasons are gender, age, height and weight, childbirth, exercise, etc. Occupational reasons include years of work, working hours, heavy weight product

handling, vibration, transportation process, posture at work, driving and others according to report (Kim, 2004).

Modern LBP treatments have been further diversified including psychological therapy, physical therapy, drugs and rehabilitation exercise therapy. More specifically there are bed rest, medication, traction, manipulation, external support, physical therapy, trigger point injection, chemonucleoysis, etc. But such methods are viewed to hardly deal with more fundamental problems of lower back pain (Park et al., 2003).

Lower back pain normally accompanies sacral muscle weakening, endurance decrease, flexibility loss and reduced waist and lower limb joint movement. Thus, in order to maintain muscle flexibility and strength, safe and appropriate exercise and increasing activities can be applied to strengthen abdominal and lower back muscles, recover torso and lower limb joint flexibility and improve general physical conditions. In these manners, exercise can help alleviate, recover from and prevent recurrence of low back pain (Mun, 2005).

2. Complementary Therapy

Alternative medicine and complementary medicine are terms used in relation to complementary theory. These are terms from the western medicine-centered views. In the 1980s, modifiers such as unproven, unorthodox, complementary and ineffective were used with the word, therapy. Then, in line with the rising interest and practical use, the terms, alternative medicine and complementary medicine have been widely utilized since the 1990s.

Recently, complementary therapy has been increasingly utilized in the health and medical treatment field including symptom management, self-caring, cost effectiveness, prevention and health improvement as more people try to focus on their quality of living. To use the term ‘medicine’, it is required to have empirically and scientifically

proven foundation or own system of logics. That is, academic aspect should be sufficiently emphasized.

In expressing diverse therapeutic methods other than those included in the western medicinal system, European stats use ‘complementary’ and the US uses ‘alternative’. Whether to use the term ‘medicine’ or ‘therapy’ in describing such methods depends upon describers. This also reflects different specific points of view regarding the academic position of complementary medicine. These days, the phrase, complementary and alternative medicine (hereinafter, CAM) has become widespread (Kim, 1998; Joh, 2002; Kim, 2003).

As more and more people use CAM, more are likely to rely on non-medical experts or inaccurate information in following CAMs and keep using CAMs continuously without noticing hazardous reactions or harmful cases.

The National Center for Complementary and Alternative Medicine has published a series of studies verifying the safety and efficacy of diverse complementary therapies, significantly enriching the scientific ground of complementary therapies. However, in order to solidify the ground of CAM effectiveness and safety, more studies are necessary (Oh et al., 2006). Given that 60～70% of the CAM users decide to do so just by basing on non-medical experts such as their family members or friends without a consultation with or report to medical staff, it is necessary to prepare for more medical staff consultation for CAM users including proper information provision (Jang et al., 2003).

The benefit of CAMs is the possibility of patients’ enhanced living quality by using one. But the drawback is a possible side effect due to misuse or abuse and accompanied economic loss. That is, by easing patients’ pain in their mental, physical, relationship and surrounding environmental statuses, CAMs could help improve the patients’ quality of living whereas these could also cause excessive reliance or economic loss due to immoral commercial pursuit.

In South Korea, there are as many misunderstandings and negative views on CAMs as positive opinions. The largest reasons for this are fragmented understanding of CAMs, or too much dependence on CAMs in denial of orthodox treatment, exaggerated advertisements, overstatements, etc. for the pursuit of profit (Jeong, 2005).

III. Research Method

1. Research Subjects

In this study, 350 LBP patients who had visited hospitals in the 00 region, Japan, from March 2 to 31, 2014 were surveyed for their usage of any complementary therapy in addition to hospital treatment. Of them, 296 patients with CAM experience due to lower back pain were finally selected for the research.

2. Survey Composition

The survey questions were first written in Korean and then, as Japanese patients were investigated herein, they were translated in Japanese. The survey was mainly consisted of general characteristics, physical characteristics, LBP levels, status of using CAMs, etc.

3. Statistical Analysis

For this research statistical analysis, first, frequency analysis with n and % was performed to look at the participants' general characteristics and experience of CAMs for LBP ease. Cross analysis was adopted to study their use of CAMs for LBP alleviation according to their general characteristics. And the means and standard errors of frequency analysis were utilized to compare the pre/post-CAM LBP levels depending upon their physical characteristics. For this research, SPSS 18.0 was employed.

IV. Research Results

1. General Characteristics

Table 1 shows the general characteristics of the research participants. Of them, 105 were males (35.5%) and 191 were females (64.5%), showing more female participation than male. Those aged not older than 30 were 35 (11.8%); between 31 and 40, 76 (25.7%); between 41 and 50, 77 (26.0%); between 51and 60, 52 (17.6%); and not younger than 61, 56 (18.9%). 109 (36.8%) were unmarried and 187 (63.2%) were married, indicating a larger number of married people in the group. Those with academic background of elementary or middle school graduation were 5 (1.7%); high school graduation, 100 (33.8%); college or 2-year university graduation, 88 (29.7%); and university graduation, 103 (34.8%).

Table 1. General Characteristics of Research Participants

General Characteristics		n	%
Gender	Male	105	35.5
	Female	191	64.5
Age	30 or Younger	35	11.8
	Between 31 and 40	76	25.7
	Between 41 and 50	77	26.0
	Between 51 and 60	52	17.6
	61 or Older	56	18.9
Marital Status	Married	109	36.8
	Unmarried	187	63.2
Academic Background	Elementary/Middle School Graduation	5	1.7
	High School Graduation	100	33.8
	College or 2-year University Graduation	88	29.7
	University Graduation or Higher	103	34.8
	Total	296	100.0

2. Physical Characteristics

As described in Table 2, 149 (50.3%) of the research participants were not taller than 160cm; 96 (32.4%) were between 161cm and 170cm; and 51 (17.2%) were 171cm or taller, indicating the largest group is the group not taller than 160cm. 77 (26.0%) had the body weight of 50kg or lighter; 113 (38.2%), between 51kg and 60kg; 71 (24.0%), between 61kg and 70kg; and 35 (11.8%), 71kg or heavier, showing the group weighing between 51kg and 60kg was the largest.

Table 2. Physical Characteristics of Research Participants

Physical Characteristics		n	%
Height	160cm or Shorter	149	50.3
	Between 161cm and 170cm	96	32.4
	171cm or Taller	51	17.2
Weight	50kg or Lighter	77	26.0
	Between 51kg and 60kg	113	38.2
	Between 61kg and 70kg	71	24.0
	71kg or Heavier	35	11.8
Total		296	100.0

3. Difference in Perceived Pre/Post-CAM Low Back Pain Levels

Table 3 describes differences in LBP levels between pre-CAM status and post-CAM status perceived by LBP patients. During the normal times, their LBP levels ranged 3.26±2.308, higher than average but during or after using a CAM, the levels were found to be around 3.04±2.006, slightly decreased.

Table 3. LBP Levels of Research Participants

Perceived LBP Complaint	N	Mean±SD
Normal-Time Pain Level	296	3.26±2.308
During/Post-CAM Pain Level	296	3.04±2.006

4. CAMs Experienced to Ease LBP

The participants were found to have used CAMs to ease low back pain as in Table 4. 111 (37.5%) used acupuncture; 43 (14.5%), moxa and cupping; 48 (16.2%), physical therapy; 161 (54.4%), acupressure and massage; 32 (10.8%), Chuna therapy; 261 (88.2%), chiropractic; 59 (19.9%); yoga, meditation and danjeon (hypogastric) breathing; 93 (31.4%), exercise; and 21 (7.1%), others. Chiropractic care accounted for the largest part followed by acupressure and acupuncture, etc.

Table 4. CAMs Experienced to Ease LBP

CAM Experience		n	%
Acupuncture	Yes	111	37.5
	No	185	62.5
Moxa, Cupping	Yes	43	14.5
	No	253	85.5
Physical Treatment	Yes	48	16.2
	No	248	83.8
Acupressure, Massage	Yes	161	54.4
	No	135	45.6
Chuna Therapy	Yes	32	10.8
	No	264	89.2
Chiropractic	Yes	261	88.2
	No	35	11.8
Yoga, Meditation, Danjeon Breathing	Yes	59	19.9
	No	237	80.1
Exercise	Yes	93	31.4
	No	203	68.6
Others	Yes	21	7.1
	No	275	92.9
Total		296	100.0

5. Status of CAM Use to Ease LBP According to General Characteristics

1) Gender-Specific CAM Use Status

Table 5 shows the CAM use status of each gender to alleviate low back pain. Both male and female were found to say they decided to use CAM because of other people's cases and lower side effects compared to other treatments (χ^2=5.787).

As for the period of time using CAM, the largest number in both genders, respectively, said it was immediately after feeling pain in the lower back followed by while they felt healthy without LBP then, while feeling a serious LBP (χ^2=2.801).

Concerning a negative side effect, 4 (3.8%) men and 30 (15.7%) women said they had experienced one, showing that women had more experience in side effects with statistical significance (χ^2=9.433, p<0.01).

As for CAM effectiveness, 25 (23.8%) men said very effective; and 52 (49.5%), effective. 51 (26.7%) women said very effective; 94 (49.2%), effective. In both gender groups, over 60% was found to said it very effective or effective, showing higher satisfaction but not with statistical significance.

Regardless of genders, the largest number of participants in both groups said they felt a little financial burden in using CAM (χ^2=0.486). 91 (86.7%) men and 172 (90.1%) women answered they would use CAM in the future again, signaling women had a higher intention of reuse than men (χ^2=0.441).

Table 5. Gender-Specific CAM Use Status

Status of CAM Use		Gender		Total	χ^2
		Male	Female		
Reason of Use	Other People's Improvement	36(38.3)	63(36.0)	99(36.8)	5.787
	Fewer Side Effects than Other Therapies	36(38.3)	87(49.7)	123(45.7)	
	Lower Cost than Other Therapies	3(3.2)	4(2.3)	7(2.6)	
	Emotionally Less Burdening	8(8.5)	12(6.9)	20(7.4)	
	Easy Access	11(11.7)	9(5.1)	20(7.4)	
Time of Use	LBP-Free Healthy Status	27(27.0)	55(29.9)	82(28.9)	2.801
	Upon Feeling LBP	39(39.0)	63(34.2)	102(35.9)	

	In Parallel with Hospital Treatment	3(3.0)	7(3.8)	10(3.5)	
	Feeling a Serious LBP	18(18.0)	36(19.6)	54(19.0)	
	Feeling Long-Term Continued LBP	8(8.0)	19(10.3)	27(9.5)	
	At LBP Recurrence	5(5.0)	4(2.2)	9(3.2)	
Side Effect	Yes	4(3.8)	30(15.7)	34(11.5)	9.433**
	No	101(96.2)	161(84.3)	262(88.5)	
Treatment Efficacy	Very Effective	25(23.8)	51(26.7)	76(25.7)	6.023
	Effective	52(49.5)	94(49.2)	146(49.3)	
	Fair	18(17.1)	24(12.6)	42(14.2)	
	Not Effective	-	8(4.2)	8(2.7)	
	Very Ineffective	10(9.5)	14(7.3)	24(8.1)	
Financial Burden	Not at all	12(11.4)	19(9.9)	31(10.5)	0.486
	A little	77(73.3)	147(77.0)	224(75.7)	
	Very much	16(15.2)	25(13.1)	41(13.9)	
Plan to Use	Yes	91(86.7)	172(90.1)	263(88.9)	0.441
	No	14(13.3)	19(9.9)	33(11.1)	
Total		105(100.0)	191(100.0)	296(100.0)	

Chi-Square Test, ** $p<0.01$

2) Age-Specific CAM Use Status

Table 6 shows spinal disease patients' CAM use status for LBP mitigation according to their ages. Concerning the reason of CAM use, 17 (53.1%) participants aged 30 or younger said they were motivated by other people's improvement, recording the highest among all reasons. 32 (45.7%) participants aged between 31 and 40 as well as 35 (50.0%) participants aged between 41and 50; 26 (54.2%) participants aged between 51 and 60; and 24 (49.0%) participants aged 61 or older said their reason to use CAM was fewer side effects than other treatment, signaling difference in reason of using CAM depending upon ages (χ^2=26.161, $p<0.05$).

As for the time of using CAM, the most frequent answer regardless of ages was right after feeling LBP, followed by healthy status without feeling LBP, and when feeling a serious LBP (χ^2=20.570).

As to experience of side effect, 11 (14.3%) participants aged between 41 and 50; and

7 (13.5%) participants aged between 51 and 60 said they had experienced a side effect but not with statistical significance (χ^2=1.901).

Most frequent answers on CAM therapeutic efficacy were very effective or effective regardless of ages (χ^2=13.840). Younger patients were found to feel heavier financial burden in using CAM but not with statistical significance (χ^2=13.840).

Concerning a plan to use CAM again in the future, 70 (90.9%) participants aged between 41 and 50; and 47 (90.4%) participants aged between 51 and 60 said yes, indicating the age groups between 41 and 50 as well as 51 and 60 had a stronger intention to reuse CAM. But there was no statistical significance according to ages (χ^2=1.386).

Table 6. Age-Specific CAM Use Status

CAM Use Status		Age					Total	χ^2
		30 or Younger	Between 31 and 40	Between 41 and 50	Between 51 and 60	61 or Older		
Reason of Use	Other People's Improvement	17(53.1)	28(40.0)	28(40.0)	13(27.1)	13 (26.5)	99 (36.8)	26.161*
	Fewer Side Effects than Other Therapies	6(18.8)	32(45.7)	35(50.0)	26(54.2)	24 (49.0)	123 (45.7)	
	Lower Cost than Other Therapies	3(9.4)	1 (1.4)	2(2.9)	1(2.1)	-	7 (2.6)	
	Emotionally Less Burdening	3(9.4)	5(7.1)	3(4.3)	3(6.3)	6 (12.2)	20 (7.4)	
	Easy Access	3(9.4)	4(5.7)	2(2.9)	5(10.4)	6 (12.2)	20 (7.4)	
Time of Use	LBP-Free Healthy Status	12(34.3)	21(29.2)	22(29.7)	11(22.0)	16 (30.2)	82 (28.9)	20.570
	Upon Feeling LBP	13(37.1)	22(30.6)	29(39.2)	19(38.0)	19 (35.8)	102 (35.9)	
	In Parallel with Hospital Treatment	3(8.6)	2(2.8)	1(1.4)	-	4 (7.5)	10 (3.5)	

	Feeling a Serious LBP	5(14.3)	17(23.6)	16(21.6)	10(20.0)	6 (11.3)	54 (19.0)	
	Feeling Long-Term Continued LBP	2(5.7)	8(11.1)	5(6.8)	6(12.0)	6 (11.3)	27 (9.5)	
	At LBP Recurrence	-	2(2.8)	1(1.4)	4(8.0)	2 (3.8)	9 (3.2)	
Side Effect	Yes	4(11.4)	8(10.5)	11(14.3)	7(13.5)	4 (7.1)	34 (11.5)	1.901
	No	31(88.6)	68(89.5)	66(85.7)	45(86.5)	52 (92.9)	262 (88.5)	
Treatment Efficacy	Very Effective	10(28.6)	18(23.7)	17(22.1)	16(30.8)	15 (26.8)	76 (25.7)	18.596
	Effective	16(45.7)	34(44.7)	41(53.2)	31(59.6)	24 (42.9)	146 (49.3)	
	Fair	6(17.1)	12(15.8)	10(13.0)	1(1.9)	13 (23.2)	42 (14.2)	
	Not Effective	2(5.7)	2(2.6)	2(2.6)	1(1.9)	1 (1.8)	8 (2.7)	
	Very Ineffective	1(2.9)	10(13.2)	7(9.1)	3(5.8)	3 (5.4)	24 (8.1)	
Financial Burden	Not at all	1(2.9)	9(11.8)	5(6.5)	7(13.5)	9 (16.1)	31 (10.5)	13.840
	A little	28(80.0)	60(78.9)	61(79.2)	41(78.8)	34 (60.7)	224 (75.7)	
	Very much	6(17.1)	7(9.2)	11(14.3)	4(7.7)	13 (23.2)	41 (13.9)	
Plan to Use	Yes	30(85.7)	68(89.5)	70(90.9)	47(90.4)	48 (85.7)	263 (88.9)	1.386
	No	5(14.3)	8(10.5)	7(9.1)	5(9.6)	8 (14.3)	33 (11.1)	
Total		35 (100.0)	76 (100.0)	77 (100.0)	52 (100.0)	56 (100.0)	296 (100.0)	

Chi-Square Test, $^{*}p<0.05$

3) CAM Use According to Marital Status

Table 7 shows CAM use status of the research participants with spinal diseases to ease lower back pain depending upon their marital status. As for their reason of use a CAM, 41 (41.4%) unmarried participants said because of other people's improvement cases where 88 (51.8%) married participants said due to the less side effect than other therapies. These two were the most frequent reasons respectively in the groups with

statistical significance (χ^2=13.224, p<0.05).

Concerning the time of CAM use, the most frequent answer among all, regardless of marital status, was right after feeling low back pain followed by healthy status without feeling LBP and when feeling a serious LBP (χ^2=1.304).

Both married and single participants were found to have few side effects (χ^2=0.039). And regarding CAM efficacy, both groups said very effective or effective for the largest parts therein (χ^2=3.752).

In using a CAM, 84 (77.1%) unmarried participants said they found it a little financially burdening to use such a therapy and 16 (14.7%), very much burdening. 140 (74.9%) married participants said CAM use was a little financially burdensome while 25 (13.4%) single participants said it very much burdensome, indicating that the single participants felt heavier financial burden than the married participants but without a statistically significant difference (χ^2=0.938).

Regarding any plan to re-use CAM in the future, 93 (85.3%) unmarried and 170 (90.9%) married participants said they had one but with no statistically significant difference (χ^2=2.171).

Table 7. CAM Use According to Marital Status

CAM Use Status		Marital Status		Total	χ^2
		Married	Unmarried		
Reason of Use	Other People's Improvement	41(41.4)	58(34.1)	99(36.8)	13.224*
	Fewer Side Effects than Other Therapies	35(35.4)	88(51.8)	123(45.7)	
	Lower Cost than Other Therapies	5(5.1)	2(1.2)	7(2.6)	
	Emotionally Less Burdening	12(12.1)	8(4.7)	20(7.4)	
	Easy Access	6(6.1)	14(8.2)	20(7.4)	
Time of Use	LBP-Free Healthy Status	32(30.5)	50(27.9)	82(28.9)	1.304
	Upon Feeling LBP	37(35.2)	65(36.3)	102(35.9)	
	In Parallel with Hospital Treatment	3(2.9)	7(3.9)	10(3.5)	

	Feeling a Serious LBP	21(20.0)	33(18.4)	54(19.0)	
	Feeling Long-Term Continued LBP	8(7.6)	19(10.6)	27(9.5)	
	At LBP Recurrence	4(3.8)	5(2.8)	9(3.2)	
Side Effect	Yes	12(11.0)	22(11.8)	34(11.5)	0.039
	No	97(89.0)	165(88.2)	262(88.5)	
Treatment Efficacy	Very Effective	27(24.8)	49(26.2)	76(25.7)	3.752
	Effective	52(47.7)	94(50.3)	146(49.3)	
	Fair	15(13.8)	27(14.4)	42(14.2)	
	Not Effective	2(1.8)	6(3.2)	8(2.7)	
	Very Ineffective	13(11.9)	11(5.9)	24(8.1)	
Financial Burden	Not at all	9(8.3)	22(11.8)	31(10.5)	0.938
	A little	84(77.1)	140(74.9)	224(75.7)	
	Very much	16(14.7)	25(13.4)	41(13.9)	
Plan to Use	Yes	93(85.3)	170(90.9)	263(88.9)	2.171
	No	16(14.7)	17(9.1)	33(11.1)	
Total		109(100.0)	187(100.0)	296(100.0)	

Chi-Square Test, $^{*}p<0.05$

4) CAM Use According to Academic Backgrounds

Table 8 describes the CAM use status of the participants with spinal diseases to ease their lower back pain according to their academic backgrounds. The most frequent reason of CAM use was found because of its fewer side effects than other therapies in groups with academic backgrounds of elementary and middle school graduation, high school graduation, and college and 2-year university graduation whereas the largest number of those with university graduation or higher academic background said because of other people's improvement cases. This finding indicates difference according to academic backgrounds ($\chi^2=21.289$, $p<0.05$).

As for the time of CAM use, the largest number of participants, regardless of their academic backgrounds, answered they used one right upon feeing low back pain ($\chi^2=18.688$). Side effect experience showed no difference depending upon different academic backgrounds ($\chi^2=0.764$).

Also, irrespective of academic backgrounds, the largest number of each group participants were found to have felt CAM efficacy very effective or effective (χ^2=11.993). Regarding the financial burden of CAM use, 4 (80.0%) participants with elementary and middle school education said they found it very much burdensome, recording higher than other groups with different educational levels. Those with high school education or higher said CAM use was a little burdensome financially, showing a difference depending upon academic backgrounds (χ^2=20.886, p<0.01).

It was found that the lower the educational levels, the more they were willing to use CAM again but without a statistically significant difference (χ^2=2.411).

Table 8. CAM use According to Academic Backgrounds

CAM Use Status		Academic Backgrounds				Total	χ^2
		Elementary /Middle School Graduation	High School Graduation	College/ 2-year University Graduation	University Graduation or Higher		
Reason of Use	Other People's Improvement	1(20.0)	35(37.6)	24(30.0)	39(42.9)	99 (36.8)	21.289*
	Fewer Side Effects than Other Therapies	4(80.0)	43(46.2)	41(51.3)	35(38.5)	123 (45.7)	
	Lower Cost than Other Therapies	-	1(1.1)	6(7.5)	-	7 (2.6)	
	Emotionally Less Burdening	-	6(6.5)	7(8.8)	7(7.7)	20 (7.4)	
	Easy Access	-	8(8.6)	2(2.5)	10(11.0)	20 (7.4)	
Time of Use	LBP-Free Healthy Status	1(20.0)	20(21.5)	25(29.1)	36(36.0)	82 (28.9)	18.688
	Upon Feeling LBP	1(20.0)	37(39.8)	28(32.6)	36(36.0)	102 (35.9)	
	In Parallel with Hospital Treatment	-	4(4.3)	4(4.7)	2(2.0)	10 (3.5)	
	Feeling a Serious LBP	1(20.0)	20(21.5)	20(23.3)	13(13.0)	54 (19.0)	
	Feeling	1(20.0)	7(7.5)	9(10.5)	10(10.0)	27	

	Long-Term Continued LBP					(9.5)	
	At LBP Recurrence	1(20.0)	5(5.4)	-	3(3.0)	9 (3.2)	
Side Effect	Yes	-	11(11.0)	11(12.5)	12(11.7)	34 (11.5)	0.764
	No	5(100.0)	89(89.0)	77(87.5)	91(88.3)	262 (88.5)	
Treatment Efficacy	Very Effective	1(20.0)	33(33.0)	20(22.7)	22(21.4)	76 (25.7)	11.993
	Effective	4(80.0)	43(43.0)	43(48.9)	56(54.4)	146 (49.3)	
	Fair	-	15(15.0)	11(12.5)	16(15.5)	42 (14.2)	
	Not Effective	-	1(1.0)	5(5.7)	2(1.9)	8 (2.7)	
	Very Ineffective	-	8(8.0)	9(10.2)	7(6.8)	24 (8.1)	
Financial Burden	Not at all	-	10(10.0)	11(12.5)	10(9.7)	31 (10.5)	20.886**
	A little	1(20.0)	74(74.0)	66(75.0)	83(80.6)	224 (75.7)	
	Huge	4(80.0)	16(16.0)	11(12.5)	10(9.7)	41 (13.9)	
Plan to Use	Yes	5(100.0)	92(92.0)	77(87.5)	89(86.4)	263 (88.9)	2.411
	No	-	8(8.0)	11(12.5)	14(13.6)	33 (11.1)	
Total		5(100.0)	100(100.0)	88(100.0)	103(100.0)	296 (100.0)	

Chi-Square Test, $^{**}p<0.01$

6. Comparison of Pre/Post-CAM LBP Levels According to Physical Characteristics

1) Comparison of Pre/Post-CAM LBP Levels According to Heights

Table 9 compares pre-CAM LBP levels with post-CAM LBP levels according to the participants' heights. It was found that irrespective of height differences, the participants experienced reduced LBP levels after using a complementary therapy.

The group not shorter than 171cm, in particular, reported reduced pain levels at 3.08±2.143 after using a complementary therapy from the pain levels at 3.53±2.618 before using one, a larger decrease than other height groups but without statistical significance.

Table 9. Comparison of Pre/Post-CAM LBP Levels According to Heights

Height	N	Usual Pain Level	Pain Level During or After Using CAM
		Mean±SD	Mean±SD
160cm or Shorter	149	3.16±2.221	2.94±1.922
Between 161cm and 170cm	96	3.28±2.279	3.18±2.072
171cm or Taller	51	3.53±2.618	3.08±2.143

2) Comparison of Pre/Post-CAM LBP Levels According to Weights

Table 10 shows pre-CAM LBP levels with post-CAM LBP levels according to the participants' weights. The group with body weight of 50kg or lighter had pre-CAM LBP levels between 3.29±2.367, but the levels decreased to 3.01±2.062 after using CAM. The weight group between 61kg and 70kg had pre-CAM pain levels around 3.28±2.244, but the levels fell to 2.72±1.758 after CAM use, huge decrease but without statistical significance.

Table 10. Comparison of Pre/Post-CAM LBP Levels According Weights

Weight	N	Usual Pain Level	Pain Level During or After Using CAM
		Mean±SD	Mean±SD
50kg or Under	77	3.29±2.367	3.01±2.062
Between 51kg and 60kg	113	3.14±2.100	3.14±2.048
Between 61kg and 70kg	71	3.28±2.244	2.72±1.758
71kg or Over	35	3.57±2.943	3.43±2.200

V. Discussion

Today's advanced industrial society and convenience in living reduces the need to move human body, accompanying various kinds of illnesses in bodily functions and frames. Of them, pain in the lower back is caused by weakened muscle strength, lack of exercise, continued poor postures, etc. and adds extra load on the lower back area while causing extra tension in the area to produce pain (Park, 2000; Kim, 2007).

Since low back pain (LBP) easily becomes chronical with a higher recurrence possibility even after temporary alleviation, diverse efforts have been made in addition to hospital treatment to ease LBP in patients such as alternative therapies and medicament administration.

Recently, many studies on LBP patients' CAM use have been published and diverse channels including media sources have released eased LBP cases, further increasing people's interest in complementary and alternative medicine.

In this recognition, this present research examined LBP patients who were following CAM as of the research period or had followed one previously to lower LBP in order to investigate their CAM use status and perceived effects of CAM on pain levels. As a result, it was found that the participating LBP patients felt reduced pain levels from the normal status after or during LBP use. To reduce LBP, they answered they had used CAM methods such as chiropractic, acupressure and massage, acupuncture, etc.

Gwon (2011) said about 71% of ordinary office workers had experienced complementary or alternative medicine and spine correction measures (Chiropractic, Chuna therapy) and steaming were the most commonly utilized therapies followed by massage, yoga and pilates. Such findings are similar to this present research results.

In this study, regarding the status of CAM use, side effects were less experienced by men than women. The reasons of using CAM in the participants showed differences

according to ages, marital status and academic backgrounds and their intention to recommend CAM was found to be stronger herein. Such findings are consistent with Gwon (2011)'s study that discovered positive results in post-CAM use assessment. However, as the study is not on LBP patients, any direct comparison may be difficult. In the studies on the socially-vulnerable elderly by Park et al. (2014) and Park et al. (2003), their satisfaction with CAM was found negative, revealing difference in satisfaction.

In addition, experiencing harmful reaction or side effect due to CAM use was found in 11.5% of the participants herein consistently with the research by Park, et al., showing the need for a study on the frequency and details of harmful cases of CAM use (Jeong & Kim, 2011).

This present study investigated Japanese LBP patients because it was viewed that CAMs such as chiropractic were more activated in Japan regarding patient treatment and health management than in South Korea so people in Japan would be less reluctant in this regard.

Also, as there are not enough studies in South Korea on CAMs, especially those related to LBP, which look at people's CAM use situations and satisfaction, the researchers of this present study thought a more diversified examination would be necessary. However, the study is limited in examining only Japanese LBP patients, providing no comparative study with those in South Korea. Follow-up study should examine not only LBP patients but also other patients with each different diseases along with CAM usage situation and awareness while comparing with Korean patients.

VI. Conclusion

The study examined 296 patients who had visited hospitals in the 00 region, Japan and were following a complementary therapy in parallel with hospital treatment or had followed a complementary therapy before to reduce lower back pain in order to find out LBP patients' CAM usage status and their perceived CAM effect on pain levels. Based on the research findings, the followings are concluded herein;

1. It was found that if the normal LBP levels perceived by patients were around 3.26±2.308, their post-CAM LBP levels decreased to 3.04±2.006.
2. To alleviate LBP, the research participants were found to have used chiropractic most commonly among the CAM methods, followed by acupressure and massage, and acupuncture.
3. As to CAM use status, side effects were less experienced by men than women, showing gender difference (p<0.01). Regarding the reasons of CAM use, differences were observed according to the participants' age, marital status and academic background. Irrespective of age, the most frequent answers were fewer side effects than other therapies and other people's improvement cases (p<0.05). That CAM has fewer side effects than other therapies was the largest reason of CAM use in the unmarried group (p<0.05) and the group with lower than university education (p<0.05).
4. Regarding the perceived pre/post-CAM LBP levels depending upon heights, all height groups showed reduced pain levels after CAM use from their pre-CAM use status. The height group of 171cm or taller, in particular, reported the largest reduction in perceived pain levels among all.
5. Regarding the perceived pre/post-CAM LBP levels depending upon weights, the

groups weighing 50kg or under, between 61kg and 70kg and 71kg or over were found to have the lowest post-CAM pain levels.

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국문초록

본 연구는 요통 환자 중 현재 보완요법을 병행하고 있거나 과거 요통으로 인하여 보완요법을 이용한 경험이 있는 대상자를 대상으로 요통 호소자의 보완요법 이용 실태 및 자각하는 통증 영향을 알아보고자 시도되었다.

그 결과 요통 환자가 자각하는 통증 정도는 평상 시 요통 증상에 비하여 현재 보완요법 이용 또는 이용 후의 통증 정도가 감소한 것으로 나타났으며, 요통 감소를 위해 경험한 보완요법은 카이로프랙틱 요법, 지압 및 마사지, 침 등의 순으로 나타났다. 보완요법 이용실태 중 부작용 경험은 남성이 여성에 비하여 낮은 것으로 나타났으며 (p<0.01). 보완요법에 대한 선호 이유는 연령에 관계없이 다른 치료에 비하여 낮은 부작용과 주변인의 효과대문이며 (p<0.05), 미혼 (p<0.05), 대학교 졸업 미만의 학력군 (p<0.05)에서 다른 치료에 비하여 낮은 부작용 때문에 이용한다는 응답이 많았다. 신장 특성에 따른 보완요법 이용 전·후의 요통 자각증상 정도는 모든 신장군에서 보완요법 이용 전에 비하여 이용 후 통증이 감소한 것으로 나타났으며, 몸무게 특성은 50kg 이하군, 61kg 이상 70kg 이하군, 71kg 이상군에서 통증 호소 정도가 가장 낮아진 것으로 나타났다.

Key Words: 요통, 보완요법, 통증 감소, 신장, 몸무게

Appendix

Survey	ID				

Dear participants,

This survey is to study spinal disease patients with low back pain(LBP) if they have experienced any complementary and alternative medicine(CAM) with a view to producing the basic materials for LBP management.

We hope for your kind cooperation to finish this survey. It is assured that this survey results will be utilized only for statistical purposes and kept secret.

Thank you for your sincere answers and cooperation in advance.

January 2013

Ⅰ. Which kind(s) of CAM have you experienced? Please tick the appropriate box(es).

1. Please tick yes or no for each CAM method.

CAM	Experience	
	Yes	No
① Acupuncture		
② moax, cupping		
③ physical therapy		
④ acupressure, massage		
⑤ Chuna therapy		
⑥ chiropractic		
⑦ yoga, meditation, danjeon (hypogastric) breathing		
⑧ hand acupuncture		
⑨ exercise (eg: swimming, mountain climbing)		
⑩ others (medicinal herb, folk remedies)		

2. In general, can you say you prefer complementary therapy? ① Yes ② No

3. If yes, why?

① Other people's improvement cases

② Based on experience, fewer side effects than other therapies

③ Less cost than other therapies

④ Emotionally less burdening

⑤ Easy access(time, process, distance and other accessibility factor-wise)

4. When did you use CAM?

① in LBP-free health status ② right upon feeling LBP

③ in parallel with hospital treatment ④ when feeling a serious LBP

⑤ when having LBP for the long term ⑥ at recurrence

5. Have you ever experienced any side effect during CAM use?

① Yes(please describe)( ) ② No

6. How do you think the CAM you had used was effective in improving your condition?

① very effective ② effective ③ fair

④ ineffective ⑤ temporary

7. How much financial burden did you feel about the CAM you had used?

① not at all ② a little ③ very much

8. Do you plan to use CAM for your treatment in the future as well?

① Yes ② No

9. Have you ever consulted your doctor about your CAM use?

① Yes ② No

10. LBP level perceived before CAM use (10 at the maximum)

1	2	3	4	5	6	7	8	9	10

11. usual LBP level perceived after CAM use (10 at the maximum)

1	2	3	4	5	6	7	8	9	10

Ⅱ. The following questions are about your general characteristics. Please tick the appropriate answer.

1. What is your gender? 1) male 2) female

2. What is your age? ( ) years old

3. your height (cm), **your weight** (kg)

4. Your marital status? ① single (divorce, bereaved, etc..) ② married

5. Your educational background?

① elementary/middle school graduation ② high school graduation

③ university graduation or higher ④ received no education