

Factors Influencing Patients' Awareness of the Benefits of Patch Testing: A Questionnaire Survey

Waranya Boonchai, M.D., Rasthawathana Desomchoke, M.D., Pacharee Iamtharachai, B.Sc., Daranee Sornmek, B.N.

Department of Dermatology, Faculty of Medicine Siriraj Hospital, Mahidol University, Bangkok 10700, Thailand.

ABSTRACT

Background: Patch testing is a well-established method of diagnosing contact dermatitis; although it is a complex and time consuming process.

Objective: To determine the factors influencing patients' awareness of the benefit of patch testing by using a questionnaire survey.

Methods: This is a descriptive study using 28 questions to survey in the patients who consecutively visited the contact dermatitis clinic, Siriraj Hospital during 2010. The survey concerned about patients' perceptions about our contact dermatitis clinic services in several dimensions. The satisfaction score ranges from least (1) to most (5) satisfaction.

Results: There were 150 patients, 22 males (15%) and 128 females (85%) (M:F ratio: 1:6) with mean age of 40.8 years (range, 16-71 years). The patients with bachelor degree or higher background showed statistically significant increases associated with the ability to remember, avoid allergens and recognize allergens in personal products ($p=0.02$, $p < 0.00$ and $p=0.03$, respectively). There was a significant difference in patients' satisfaction regarding the test procedure ($p=0.04$) in age groups of 21-40 years old and >40 years old (Mean=4.17 and 4.43, respectively). The lower educational group had significantly more satisfaction about medical educational sheet than the higher educational level group (Mean=4.40 and 4.18, respectively, $p=0.05$).

Conclusion: The patients have the high level of satisfactions towards the service at the contact dermatitis clinic, Siriraj Hospital. Factors influencing patients' awareness of the benefits and results of patch testing are age and educational background.

Keywords: Patch test, awareness, satisfaction, benefits of patch testing

Siriraj Med J 2013;65: 96-99

E-journal: <http://www.sirirajmedj.com>

INTRODUCTION

Patch testing (PT) is a standard method of diagnosing allergic contact dermatitis (ACD).¹ The process of the test is complicated, time consuming and requires a well-trained physician for its interpretation. In order to complete the test procedure, patients require multiple visits to the clinic for reading and interpreting the results and great efforts in avoidance of identified allergens. Studies have addressed the benefits of PT to help improvement of the skin's condition after testing.²⁻⁴ However, there are differences in culture, environment, and official language between our practice and those

previously reported clinical practices. In addition, most of the allergen names are in English and not familiar to general Thai people. The context of medical practice in Thailand would lead to an understanding of accessibility to PT on attendance at a contact dermatitis clinic. There are only 513 dermatologists with a qualified diploma from the Thai Board of dermatology⁵ for the total of 65 million Thai population.⁶ There are about 6 contact dermatitis clinics which can provide PT and among those less than 5 perform extended series other than the baseline series with all clinics being in Bangkok with a population of about 8 million.

Patients who suffer from ACD have variety in their individual backgrounds, including level of education, gender and ages. These factors could affect patients' awareness of PT results and benefits. Furthermore, patients' perception not only depends on personal characteristics but also depends on medical personnel aspects.^{1,4} To date, there is no study that demonstrates influencing patients' awareness of

Correspondence to: Waranya Boonchai

E-mail: wboonchai@yahoo.com

Received 11 December 2012

Revised 2 April 2013

Accepted 4 April 2013

PT benefits in Asia where there are differences in demographic, cultural and personal backgrounds.

The purpose of this study was to determine patient satisfaction with the PT process and medical personnel. This study also investigated the factors which influence patients' awareness of the benefits and results of patch testing by using a questionnaire survey.

MATERIALS AND METHODS

The Siriraj Institutional Review Board approved the study protocol (Si.230/2010). We enrolled 150 consecutive patients who were referred and informed by general dermatologists for patch testing at the contact dermatitis clinic, Siriraj Hospital in 2010 and all enrolled patients signed informed consent to participate in the study. They were interviewed by R.D. who did not influence the treatment of the patients. The patients were patch tested according to ordinary procedures by placing the allergens in aluminium Finn Chambers® (Smart Practice®, Phoenix, Arizona, USA), on unaffected skin on the upper back for 2 days, and the reactions were read on Day 2, Day 3, and Day 7. A specifically designed patient' awareness and satisfaction of PT questionnaire was answered by each individual after the complete PT process (Day 5 or Day 7) under a natural, non-manipulative setting. The questionnaire based on a five-point Likert-type scale, which is a psychometric response scale commonly used in questionnaire research, that included responses from "1", strongly disagrees, to "5", strongly agrees, and focuses on awareness and satisfaction of PT. We evaluated patients' perspectives of the benefits of PT procedure and service of our contact dermatitis clinic which belongs to the largest, government-based, medical school hospital, Siriraj Hospital.

Univariate analysis was performed to assess the relationship between patient characteristics (age, gender, and education level) and awareness of PT benefits as well as satisfaction of our clinic services. Chi-square tests were used for analysis of descriptive data, and the Student's t test was used to test for sub group differences in the five-point Likert-type scale in each part.

RESULTS

There were 150 patients, 22 males (15%) and 128 females (85%) (M: F ratio: 1:6) who participated in this study. The mean age was 40.8 years (range, 16-71 years). The demographic data of patients has been shown in Table 1. Half of the participants were > 40 years old. 58.7% of respondents had an education level equal to or higher than a bachelor degree.

Our practice is at a tertiary care medical school hospital which is located on the outskirts of Bangkok, which generally corresponds to the place of origin of the participants.

The main reasons for patients choosing our medical services were because of either the reputation of the hospital or that of the contact dermatitis clinic, 56.4%. About half of them can receive a refund for the testing fee

TABLE 1. Characteristics of patients.

Characters	Number of patients (%) N=150
Age, years	
< 20 years	11 (7.3)
21-40 years	64 (42.7)
> 40 years	75 (50)
Sex	
Male	22 (14.7)
Female	128 (85.3)
Education background	
Junior high school or lower	13 (8.7)
High school	31 (20.7)
Diploma	18 (12.0)
Bachelor degree or higher	88 (58.7)
Living place	
Bangkok (Urban)	87 (58)
Others (Suburb)	63 (42)

(800 THB), mostly from government coverage. 65.3% of patients were clearly informed about the testing procedure prior to the test by W.B. or P.I.

The results of this questionnaire survey, regarding patient satisfaction of patch testing process and perception of benefits of PT to their skin condition are summarized in Table 3 and the scores shown in Fig 1. Most patients were very satisfied with the way the clinic was run with regard to medical equipment, medical personnel's manner, medical information pamphlets, medical advices and overall satisfaction to the clinic services (Fig 2).

When the contributor educational level was classified into less and above/equal to bachelor degree groups, a different pattern emerged. The patients with higher educational background showed statistically significant improvement associated with the ability to remember and

TABLE 2. Reasons for visiting our services (Contact Dermatitis Clinic).

Evaluated services topics	Number of patients (%) (N=150)
Reasons for visiting contact dermatitis clinic	
Referral from other hospital	18 (7.9)
Location	25 (11.0)
Modern medical equipment	37 (16.3)
The clinic reputation	42 (18.5)
The hospital reputation	86 (37.9)
Appointment convenience	
Inconvenience	1 (0.7)
Moderately convenient	42 (28)
Very convenient	107 (71.3)
Medical fees	
Fully self-supported	64 (42.7)
Partially refundable	10 (6.7)
Fully refundable	76 (50.7)
Information received before testing	
Not provided	16 (10.7)
Provided and unclear	36 (24.0)
Provided and clear	98 (65.3)

TABLE 3. Percentage of patients' satisfaction score in patch testing.

Score*	% of patients Patient satisfaction to PT process	Remember allergen	Ability to avoid allergen	Read label behavior	Aware of PT benefits	Expectation to PT	Satisfaction to clinic services
5	44.0	26.7	27.3	48.7	49.3	24.7	55.3
4	45.3	39.3	38.0	38.0	40.7	51.3	40.7
3	10.7	30.0	28.0	9.3	10.0	20.0	3.3
2	0	4	6	3.3	0	4	0.7
1	0	0	0.7	0.7	0	0	0

*Score; "1", strongly disagree to "5", strongly agree

avoid their allergens and awareness of allergens before buying personal products ($p=0.02$, $p < 0.00$ and $p=0.03$, respectively).

The effect of age, sex and level of education toward the satisfaction score were analyzed. Considering the effect of age, there was a statistically significant difference in overall patients' satisfaction regarding the test procedure ($p=0.04$). The Scheffe's analysis of difference exhibits a difference between 21-40 years old group and >40 years old group (Mean=4.17 and 4.43, respectively). Men had more satisfaction score in physician's manner than women participants (Mean=4.95 and 4.71, respectively), ($p=0.00$). Moreover, the questionnaire-partakers of the lower educational group had significantly more satisfaction with the medical educational sheet than the higher educational level group (Mean=4.40 and 4.18, respectively), ($p=0.05$).

DISCUSSION

There are few reports in the literatures which have revealed patients' expectations and values about PT. This questionnaire survey provides an important insight into patient awareness of the benefits of patch testing for the first time in Asian geographic areas. The difference in ethnicity and socioeconomic background affects regional participants' response to PT.^{2,4,8}

The health care system in Thailand, which is classified as a developing country⁹, has a good quality of services with low-priced medical services because the government financial support differs from other developing countries.¹⁰ However, it is difficult for patients to access our tertiary medical care center since it has great demands placed upon it. Patient satisfaction is subject to the design of services in each developing country. Patch test has been considered as an unnecessary test procedure that certain insurance plans do not cover, so 42% of our patients were self-supported as compared to only 7% of those of Mayo Clinic, USA.² It was surprising that patients were so satisfied with the patch-testing process, even though it is a time consuming (5 or 7 days) and labor-intensive process. This satisfaction may be from several reasons such as reasonable test fee, affordable or solved their skin problems.

The lowest satisfaction score was 3.85 concerning the ability to avoid allergens followed by the ability to remember the name of allergens as most of them are chemical names in the English language. The finding corresponds to the level of patient education because our official language is Thai. The higher educated patients had more ability to memorize and avoid their identified-allergen(s) than the lower educated group. Nevertheless, the higher educated group showed less satisfaction score on the medical educational sheet than the lower educated

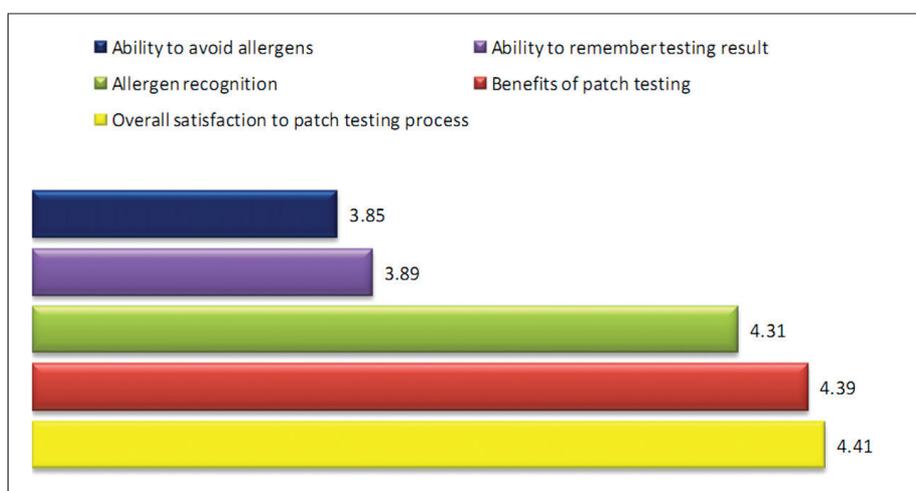


Fig 1. Patients' perception score of benefits of patch testing process

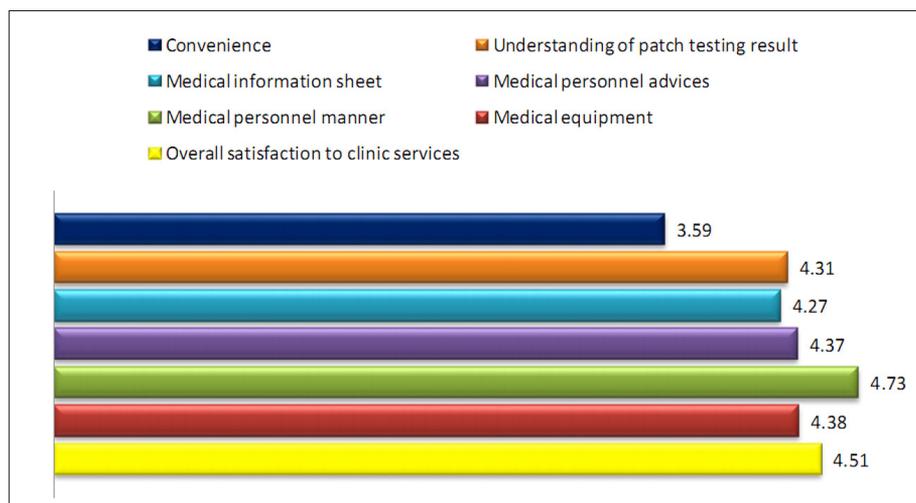


Fig 2. Patients' satisfaction score with clinic services

group. This could be explained by the medical content in our educational sheet which provides general information using simple phrases and no further resources. Our medical educational sheet will be augmented by further self-educated references, such as reliable medical resources websites, to suit all levels of education of the patients.

A limitation of this study was that the population samples may not be representative of the general Thai population. Our hospital is a tertiary medical institute and located in the capital of Bangkok, therefore, the patients who visit our clinic are generally more highly educated and higher socioeconomic level than the average Thai population.

CONCLUSION

The patients have the high level of satisfactions towards the service at the contact dermatitis clinic, Siriraj Hospital. Factors influencing patients' awareness of the benefits and results of patch testing are age and educational background.

ACKNOWLEDGMENTS

This study was supported by Routine to Research (R2R) grant, Faculty of Medicine Siriraj Hospital, Mahidol University, Thailand.

REFERENCES

- Lewis FM, Cork MJ, McDonagh AJ, Gawkrödger DJ. An audit of the value of patch testing: the patient's perspective. *Contact Dermatitis*. 1994;30(4):214-6.
- Scalf LA, Genebriera J, Davis MD, Farmer SA, Yiannias JA. Patients' perceptions of the usefulness and outcome of patch testing. *J Am Acad Dermatol*. 2007;56(6):928-32.
- Kadyk DL, Hall S, Belsito DV. Quality of life of patients with allergic contact dermatitis: an exploratory analysis by gender, ethnicity, age, and occupation. *Dermatitis*. 2004;15(3):117-24.
- Woo PN, Hay IC, Ormerod AD. An audit of the value of patch testing and its effect on quality of life. *Contact Dermatitis*. 2003;48(5):244-7.
- Dermatological Society of Thailand. Bangkok 2009 [cited 2012 January 6]; Available from: http://www.dst.or.th/en_about.php.
- National statistical office. Bangkok 2007 [cited 2012 January 6]; Available from: <http://www.nso.go.th/index-1.html>.
- Likert R. A Technique for the Measurement of Attitudes. *Arch Psychol*. 1932;140:1-55.
- Thomson KF, Wilkinson SM, Sommer S, Pollock B. Eczema: quality of life by body site and the effect of patch testing. *Br J Dermatol*. 2002;146(4):627-30.
- Thailand UN. Thailand Info | Development Situation 2012 [cited 2012 January 17]; Available from: <http://www.un.or.th/thailand/development.html>.
- Andaleeb SS. Service quality perceptions and patient satisfaction: a study of hospitals in a developing country. *Soc Sci Med*. 2001;52(9):1359-70.