

The Effect of Yoga Practice to Psychological and Immunity System of College Students

Saburo KARIYA¹, Cho Young YOON², Eun Shim YANG², Moo Yon LEE³,
and Soo Yen NO⁴

¹*Kochi University; Graduate School of Integrated Arts and Sciences, Humanities and Social Sciences, Studies in Education Section*

²*Korea National Sport University;* ³*Seoil College;* ⁴*Inha University*

Yoon, Cho Young, Yang, Eun Shim (Korea National Sport University)

Lee, Moo Yon (Seoil College)

No, Soo Yen (Inha University)

In this study, a yoga class was conducted to 255 college students of K University, Y University, and H University located in Seoul, Gyeonggi, and Chungnam areas for 16 weeks. The Symptom Check List – 90 (SCL-90), Physical Self-Perception Profile (PSPP), and the effect of yoga to the psychology and health of the college students were analyzed before and after the experiment while accessing the level of serum immunoglobulin. The results showed that yoga had significant effects to the symptoms related to somatization, sensitive personal relationship, and hostility while showing statistically significant effect in the confidence level in terms of the average score on compulsion, anxiety, depression, fear, and psychotic aspect. However, there was no significant difference in the confidence level with regards to the change in physical value, total PSPP scores, locomotive function, physical disposition, and physical condition. Nonetheless, the level of serum immunoglobulin IgM showed a significant difference after the yoga practice but the levels of IgG and IgA were not significantly different statistically.

Keywords: Yoga, psychological health, college students, serum immunoglobulin

I. Introduction

Yoga is a scientific, philosophic, and creative sports activity and it has been loved by many people for a long time. Also, yoga is the essence of mobile science that not only improves basic stamina needed by the human body but also the level of concentration, mentality, creativity, and patience. Yoga practice requires maintenance of stable mental state and demands the beauty of waiting with a pleasant and stable mind while eliminating unnecessary thoughts. Yoga expresses the vital and formative aspects of Yin and Yang, in other words, the contrast, unification, and harmonization of two contrasting aspects of everything. Thus, such natures of yoga practice serve a positive role for connecting various relationships that exist between person to person and person to nature (Min, 2006; Yang & Cho, 2008; Ha, 2010; Cho, 2009; Gwak, 2006). Thus, this study aims to analyze the effects of yoga in the psychological aspects and immunity by measuring the psychology-related index and serum immunoglobulin of the college students before and after the yoga practice.

II. Study method

1. Subjects

For the subjects of this study, a total of 255 college students composed of 136 male students and 119 female students from K University, Y University, and H University located in Seoul, Gyeonggi, and Chungnam areas were selected and the average age of the subjects was 20.3 (± 2.18) years old.

2. Study method

For the measurement instruments, Physical Self-Perception Profile (PSPP) was used, and the sub-category of PSPP contained General Physical Self-Worth as well as 4 areas of 'Sport Competence,' 'Condition,' 'Body,' and 'Symptom Checklist, SCL-90.' This category had a total of 90 questions and there are items on somatization, compulsion, sensitivity on personal relationship, depression, anxiety, hostility, fear, delusion, psychotic aspects, and other 10 factors in those categories. Meanwhile, the level of the subjects' psychological health was accessed using 5-grade scoring system and the level of serum immunoglobulin (IgG, IgA, IgM) among the subjects were measured using BT Semi-auto chemical analyzer. Having yoga as a measure of physical training, the study conducted the yoga program from Aug. 2009 to Feb. 2010 for a total of 16 weeks. Before and after the yoga practice, a survey on psychological health and Physical Self-Perception Profile (PSPP) were conducted while measuring the concentration level of serum immunoglobulin. The 510 copies of the survey questionnaire were distributed and 494 copies were retrieved before and after the yoga practice. The rate of the survey retrieval was 96.86%.

3. Data processing

For the data processing of this study, the survey questionnaire and measurement values were treated before and after the yoga practice. The acquired values were statistically analyzed using SPSS11.5.

III. Results and discussion

Comparison of each factor of SCL-90 before and after the yoga practice

The positive effect of the yoga practice was found in somatization, sensitivity on personal relationship, hostility, and delusion while having significant effect on the average score, compulsion, depression, anxiety, fear, and psychotic aspects.(Table 1)

Table 1. Comparison of each factor of SCL-90 before and after the yoga practice ($\bar{X} \pm S$)

Each factor of SCL-90	Before experiment	After experiment	T score	P score
Somatization	1.536±0.584	1.328±0.371	1.157	0.273
Compulsion	1.888±0.479	1.659±0.523	2.344	0.0330*
Sensitivityon	1.855±0.822	1.561±0.442	2.412	0.024 *
personal relationship	1.551±0.448	1.459±0.354	2.270	0.035 *
Depression	1.556±0.471	1.425±0.372	1.346	0.242
Anxiety	1.497±0.655	1.489±0.434	0.739	0.563
Hostility	1.523±0.523	1.271±0.291	2.422	0.027 *
Fear	1.795±0.605	1.544±0.535	1.121	0.241
Delusion	1.357±0.474	1.346±0.325	2.536	0.020 *
Psychotic aspects	1.650±0.451	1.448±0.307	2.394	0.030
Average score				

Comparison on Physical Self-Perception Profile (PSPP) before and after the yoga practice

In this study, non-significant effect of the yoga practice were shown(Table 2). It is, however, increased in the scores were shown in all factors after training.

Table 2. Comparison on each value of Physical Self-Perception Profile (PSPP) before and after the yoga practice ($\bar{X} \pm S$)

Item	Before experiment	After experiment	T score	P score
Physical	143.99±1.986	14.969±2.038	-1.469	0.149
self-perception	13.926±2.761	15.270±3.369	-1.459	0.148
Locomotive function	15.771±2.733	17.128±3.323	-1.660	0.229
Physical condition	14.729±2.039	15.941±2.787	-1.759	0.091
Physical Strength	14.501±2.325	15.499±2.837	-1.579	0.139
Capacity	72.860±8.649	78.747±11.632	-2.153	0.049
Total PSPP				

Comparison on serum immunoglobulin before and after the yoga practice

The level of IgM before and after the yoga practice was shown to be significantly different. However, the levels of IgG and IgA were not significantly different regardless of the vivid change in value (Table 3).

Table 3. Comparison on IgG, IgA, and IgM before and after the yoga practice ($\bar{X} \pm S$)

Serum immunoglobulin (g/l)	Before experiment	After experiment	T score	P score
IgG	11.08±1.32	10.51±1.50	-0.872	0.379
IgA	1.39±0.39	1.56±0.49	-1.757	0.181
IgM	1.22±0.27	1.16±0.40	-1.986	6

The emotional state and the physiological reaction triggered by emotions have a direct effect to the emotional system. The active emotional state reinforces the immunity function while passive emotional state decreases the function of the immune system. The values of IgG and IgA derived after the yoga practice showed a distinctive change; however, no significant difference was shown. Such result implies that the yoga practice served an active role to the immune system of the yoga practitioners.

Yoga is not only a type of exercise but also the presentation of emptiness, essence, and beauty of nature. Meanwhile, it refreshes the human mind and helps the students release a certain level of mental pressure. It also controls the nerve activities, reinforces controlling capacity, and positively affects people to overcome the impatient and compulsive emotions.

IV. Conclusion

The philosophy of yoga pursues unification of heaven and human being, and this idea starts from one's own identity. Aiming at the mutual benefit and development of all substances, the Tao (The way of spiritual path) prevents isolation or destruction of a substance and promotes confronting harmonization of Yin and Yang. Moreover, it helps people promote a sound mind and body and form the right values.

As shown in this study, the yoga practice accelerated the psychological health of the college students. In such extent, it is expected to improve the mutual understanding based on consistent communication and to directly and effectively prevent any potential factor that may damage the psychological health of the college students.

Reference

- 김영식 (2006). 요가수련 참가정도와 주관적 안녕감의 관계. 전남대학교대학원 박사학위논문.
- 서유정 (2009). 힐링요가 및 파워요가가 신체질량지수와 기초체력향상에 미치는 효과. 용인대학교대학원 석사학위논문.
- 김량희 (2005). 웰빙사회에서 요가의 의미 탐구. 전남대학교대학원 석사학위논문.
- 민경화 (2006). 요가수련이 신체적 자기개념에 미치는 영향. 성신여자대학교 대학원 석사학위논문.
- 홍미화 (2005). 요가지도자의 라이프스타일과 요가 수련자의 가치체계 분석. 연세대학교 대학원 박사학위논문.
- 원선영 (2006). 요가 수련이 청소년기의 정신건강에 미치는 영향. 세종대학교 교육대학원 석사학위논문.
- 최은주 (2008). 경락 요가 후 뇌파측정을 통한 스트레스 분석. 경기대학교 대체의학대학원 석사학위논문.
- 조혜영 (2009). 요가수련자의 몰입경험과 주관적 행복감과의 관계. 용인대학교대학원 석사학위논문.
- 박은주 (2008). 요가수련이 초등학생의 공격성에 미치는 영향. 한양대학교 교육대학원 석사학위논문.
- 한란주 (2009). 성인 여성의 요가 수련이 정신건강과 생활만족도에 미치는 영향. 고려대학교 대학원 석사학위논문.
- 하연주 (2010). 청소년을 위한 소매틱 요가 프로그램 개발. 숙명여자대학교 대학원 박사학위논문.
- 곽미자 (2006). 박티요가를 통한 심리치유의 이해. 한국심리학회지, 11 권 2 호, 389-405.
- 양희연, 조옥경 (2008). 통합적 요가 프로그램이 어린이의 정서지능, 환경에 대한 감수성 및 태도에 미치는 영향 연구. 산국생태유아교육학회, 7 권 1 호, 227-257.
- 김채희, 조옥경, 김영란 (2005). 요가자세법, 호흡법 수련과 신체심리치료의 비교연구. 상담학연구, 6 권 4 호, 1383-1401.
- 양정순, 손경희 (2006). 요가 운동이 정신과 입원환자의 변비완화에 미치는 효과. 임상간호연구, 12 권 2 호, 73-83.
- 김명권, 조옥경 (2002). 요가의 심리치료적 가치. 상담학연구, 3 권 1 호, 255-277.
- 余晓波, 方艳霞 (2005). 大学生心理健康研究进展[J]. 实用预防医学, 12(3):
- 陈善平, 张秋君, 李淑娥 (2005). 太极拳教学对大学生 A 型行为的影响[J]. 中国体育科技, 41(2)
- 陈青山, 胡来东 (2004). 道家哲学思想对太极拳理论的影响[J]. 体育成人教育学刊, 12(2)
- 徐霞 (2001) 大学生身体自尊量表的修订与检验[J]. 体育科学, 21(2)
- 张力为, 毛志雄 (2004) 体育科学常用心理量表评定手册[M]. 北京:北京体育大学出版社.