2022년 싱가포르 난양공과대학 국립교육원 초청
국제 심포지움 참가 재학생 모집 안내

1. 난양공과대학(Nanyang Technological University) 소개

□ 1955년 난양대학 최초 설립, 1981년 난양기술학교로 변경
□ 1991년 난양공과대학(NTU)으로 변경, 싱가포르 대표 연구중심 국립대학으로 발전
□ 2022년 QS World University Ranking 종합 12위

2. 심포지움 및 행사 소개

□ The 11th Lau Teng Chuan Physical Education and Sports Science Symposium
○ 주관: 난양공과대학교 국립교육원 체육교육·체육과학과
○ 일시: 2022년 11월 4일(금)
○ 장소: 싱가포르 난양공과대학
○ 개요: Lau Teng Chuan 박사의 싱가포르 체육 및 스포츠 과학에 대한 공헌을 기리기 위해 매 년 개최하는 심포지움

□ The 3-Minute Student Presentation
○ 포스터 발표를 통해 학부생의 학업 성취도를 평가하는 행사
○ 발표언어 영어, 3분 포스터 발표와 2분의 질의응답 형식
○ 현장 투표를 통해 베스트 발표상 시상
○ 2019년부터 우리 대학 참여
○ 싱가포르 난양공과대학, 호주 다이킨대학, 대만 사범대학 등 참여 예정

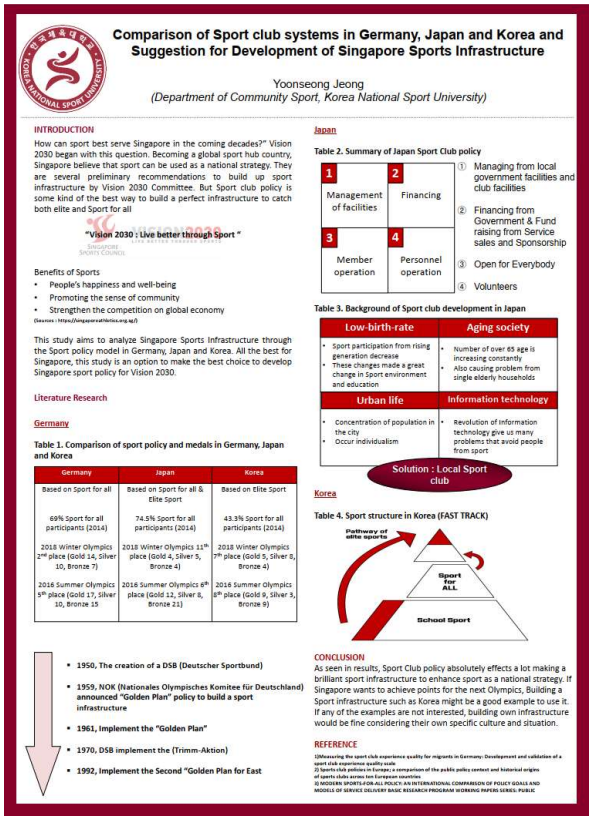
3. 참가자 모집 안내

□ 모집대상: 한국체육대학교 재학생(학부생)
□ 모집기간: 2022년 09월 28일(수)부터 10월 3일(월)까지
□ 신청방법: 온라인 신청서 작성(URL: https://forms.gle/PkfQtW7s11YpoU7Z6)
□ 면접심사
○ 일　　시: 2022년 10월 04일(화) 16시
○ 장　　소: 면접심사 참여 대상자 개별 문자 안내
○ 선발인원: 10명
※ 신청인원이 15명을 초과 시 교내 성적과 어학성적을 합산하여 상위 15명을 대상으로 면접심사 진행
□ 문의사항: 02-410-6731

4. 참가자 지원

□ 연구 주제 선정 및 연구 과정에 전임교원 멘토링 지원
□ 발표자로 선발 시 싱가포르 방문 항공권 및 숙소 제공(행사 외의 식사는 제공되지 않음)
□ 난양공과대학에서 발급한 심포지움 참가증명서 지급

5. 참고자료(2019년 발표 포스터)



Comparison of Sport club systems in Germany, Japan and Korea and Suggestion for Development of Singapore Sports Infrastructure

Yoonseong Jeong
(Department of Community Sport, Korea National Sport University)

INTRODUCTION

How can sport best serve Singapore in the coming decades?" Vision 2030 began with this question. Becoming a global sport hub country, Singapore believe that sport can be used as a national strategy. They are several preliminary recommendations to build up sport infrastructure by Vision 2030 Committee. But Sport club policy is some kind of the best way to build a perfect infrastructure to catch both elite and Sport for all

"Vision 2030 : Live better through Sport "

Benefits of Sports
- People's happiness and well-being
- Promoting the sense of community
- Strengthen the competition on global economy

This study aims to analyze Singapore Sports Infrastructure through the Sport policy model in Germany, Japan and Korea. All the best for Singapore, this study is an option to make the best choice to develop Singapore sport policy for Vision 2030.

Literature Research

Germany

Table 1. Comparison of sport policy and medals in Germany, Japan and Korea

Germany	Japan	Korea
Based on Sport for all	Based on Sport for all & Elite Sport	Based on Elite Sport
69% Sport for all participants (2014)	74.5% Sport for all participants (2014)	43.3% Sport for all participants (2014)
2018 Winter Olympics 2nd place (Gold 14, Silver 10, Bronze 7)	2018 Winter Olympics 11th place (Gold 4, Silver 5, Bronze 4)	2018 Winter Olympics 7th place (Gold 5, Silver 8, Bronze 4)
2016 Summer Olympics 5th place (Gold 17, Silver 10, Bronze 15	2016 Summer Olympics 6th place (Gold 12, Silver 8, Bronze 21)	2016 Summer Olympics 8th place (Gold 9, Silver 3, Bronze 9)

- 1950, The creation of a DSB (Deutscher Sportbund)
- 1959, NOK (Nationales Olympisches Komitee für Deutschland) announced "Golden Plan" policy to build a sport infrastructure
- 1961, Implement the "Golden Plan"
- 1970, DSB implement the (Trimm-Aktion)
- 1992, Implement the Second "Golden Plan for East

Japan

Table 2. Summary of Japan Sport Club policy

1 Management of facilities	2 Financing
3 Member operation	4 Personnel operation

① Managing from local government facilities and club facilities
② Financing from Government & Fund raising from Service sales and Sponsorship
③ Open for Everybody
④ Volunteers

Table 3. Background of Sport club development in Japan

Low-birth-rate	Aging society
• Sport participation from rising generation decrease • These changes made a great change in Sport environment and education	• Number of over 65 age is increasing constantly • Also causing problem from single elderly households
Urban life	**Information technology**
• Concentration of population in the city • Occur individualism	• Revolution of information technology give us many problems that avoid people from sport

Solution : Local Sport club

Korea

Table 4. Sport structure in Korea (FAST TRACK)

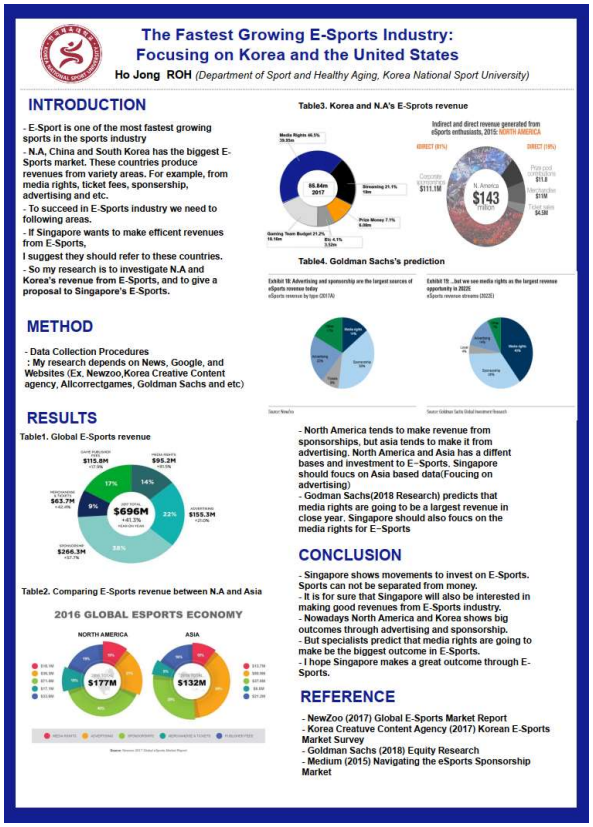
CONCLUSION

As seen in results, Sport Club policy absolutely effects a lot making a brilliant sport infrastructure to enhance sport as a national strategy. If Singapore wants to achieve points for the next Olympics, Building a Sport infrastructure such as Korea might be a good example to use it. If any of the examples are not interested, building own infrastructure would be fine considering their own specific culture and situation.

REFERENCE

1)Measuring the sport club experience quality for migrants in Germany: Development and validation of a sport club experience quality scale
2) Sports club policies in Europe; a comparison of the public policy context and historical origins of sports clubs across ten European countries
3) MODERN SPORTS-FOR-ALL POLICY: AN INTERNATIONAL COMPARISON OF POLICY GOALS AND MODELS OF SERVICE DELIVERY BASIC RESEARCH PROGRAM WORKING PAPERS SERIES: PUBLIC

2019. 정윤성 포스터



The Fastest Growing E-Sports Industry: Focusing on Korea and the United States

Ho Jong ROH (Department of Sport and Healthy Aging, Korea National Sport University)

INTRODUCTION

- E-Sport is one of the most fastest growing sports in the sports industry
- N.A, China and South Korea has the biggest E-Sports market. These countries produce revenues from variety areas. For example, from media rights, ticket fees, sponsership, advertising and etc.
- To succeed in E-Sports industry we need to following areas.
- If Singapore wants to make efficent revenues from E-Sports,

I suggest they should refer to these countries.

- So my research is to investigate N.A and Korea's revenue from E-Sports, and to give a proposal to Singapore's E-Sports.

Table3. Korea and N.A's E-Sprots revenue

Table4. Goldman Sachs's prediction

METHOD

- Data Collection Procedures
: My research depends on News, Google, and Websites (Ex. Newzoo,Korea Creative Content agency, Allcorrectgames, Goldman Sachs and etc)

RESULTS

Table1. Global E-Sports revenue

Table2. Comparing E-Sports revenue between N.A and Asia

- North America tends to make revenue from sponsorships, but asia tends to make it from advertising. North America and Asia has a diffent bases and investment to E-Sports. Singapore should fouces on Asia based data(Foucing on advertising)
- Godman Sachs(2018 Research) predicts that media rights are going to be a largest revenue in close year. Singapore should also fouces on the media rights for E-Sports

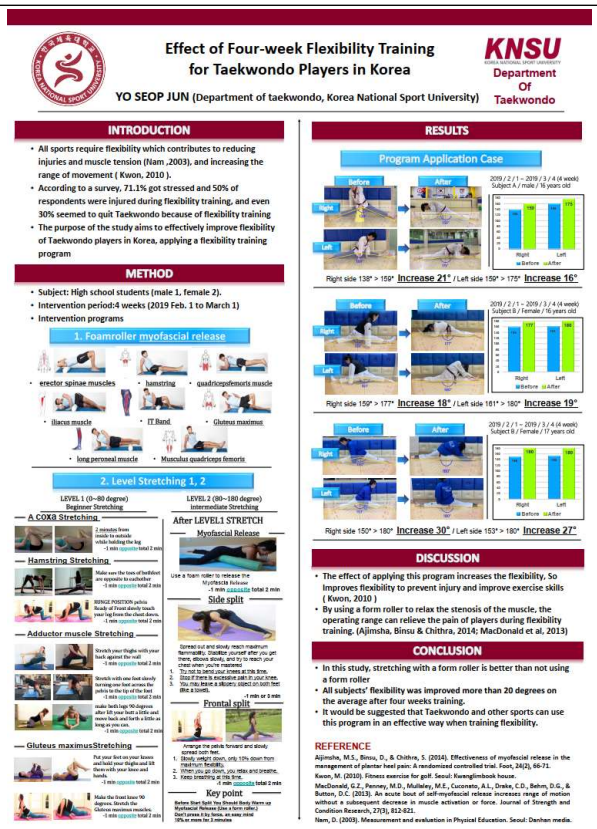
CONCLUSION

- Singapore shows movements to invest on E-Sports. Sports can not be separated from money.
- It is for sure that Singapore will also be interested in making good revenues from E-Sports industry.
- Nowadays North America and Korea shows big outcomes through advertising and sponsorship.
- But specialists predict that media rights are going to make be the biggest outcome in E-Sports.
- I hope Singapore makes a great outcome through E-Sports.

REFERENCE

- NewZoo (2017) Global E-Sports Market Report
- Korea Creatuve Content Agency (2017) Korean E-Sports Market Survey
- Goldman Sachs (2018) Equity Research
- Medium (2015) Navigating the eSports Sponsorship Market

2019. 노호종 포스터



Effect of Four-week Flexibility Training for Taekwondo Players in Korea

YO SEOP JUN (Department of taekwondo, Korea National Sport University)

KNSU Department Of Taekwondo

INTRODUCTION

- All sports require flexibility which contributes to reducing injuries and muscle tension (Nam ,2003), and increasing the range of movement (Kwon, 2010).
- According to a survey, 71.1% got stressed and 50% of respondents were injured during flexibility training, and even 30% seemed to quit Taekwondo because of flexibility training
- The purpose of the study aims to effectively improve flexibility of Taekwondo players in Korea, applying a flexibility training program

METHOD

- Subject: High school students (male 1, female 2).
- Intervention period:4 weeks (2019 Feb. 1 to March 1)
- Intervention programs

1. Foamroller myofascial release

2. Level Stretching 1, 2

LEVEL 1 (0~80 degree) Beginner Stretching
LEVEL 2 (80~180 degree) intermediate Stretching

A COX3 Stretching
Hamstring Stretching
Adductor muscle Stretching
Gluteus maximusStretching

After LEVEL1 STRETCH
Myofascial Release
Side split
Frontal split
Key point

RESULTS

Program Application Case

DISCUSSION

- The effect of applying this program increases the flexibility. So improves flexibility to prevent injury and improve exercise skills (Kwon, 2010)
- By using a form roller to relax the stenosis of the muscle, the operating range can relieve the pain of players during flexibility training. (Ajimsha, Binsu & Chithra, 2014; MacDonald et al, 2013)

CONCLUSION

- In this study, stretching with a form roller is better than not using a form roller
- All subjects' flexibility was improved more than 20 degrees on the average after four weeks training.
- It would be suggested that Taekwondo and other sports can use this program in an effective way when training flexibility.

REFERENCE

Ajimsha, M.S., Binsu, D., & Chithra, S. (2014). Effectiveness of myofascial release in the management of plantar heel pain: A randomized controlled trial. Foot, 24(2), 66-71.
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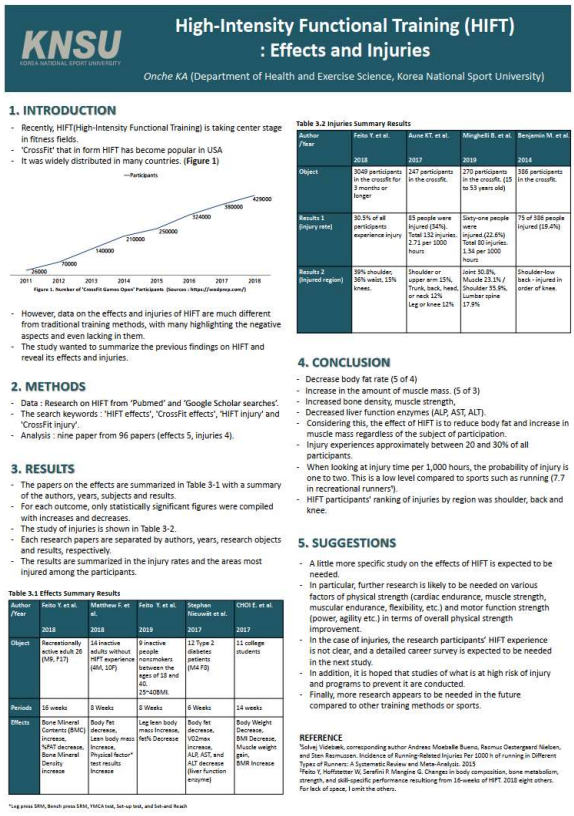
Nam, D. (2003). Measurement and evaluation in Physical Education. Seoul: Danhan media.

2019. 전요섭 포스터



KNSU

High-Intensity Functional Training (HIFT) : Effects and Injuries

Onche KA (Department of Health and Exercise Science, Korea National Sport University)

1. INTRODUCTION

- Recently, HIFT(High-Intensity Functional Training) is taking center stage in fitness fields.
- 'CrossFit' that in form HIFT has become popular in USA
- It was widely distributed in many countries. (**Figure 1**)

Figure 1. Number of 'CrossFit Games Open' Participants (Sources : https://wodprep.com/)

- However, data on the effects and injuries of HIFT are much different from traditional training methods, with many highlighting the negative aspects and even lacking in them.
- The study wanted to summarize the previous findings on HIFT and reveal its effects and injuries.

2. METHODS

- Data : Research on HIFT from 'Pubmed' and 'Google Scholar searches'.
- The search keywords : 'HIFT effects', 'CrossFit effects', 'HIFT injury' and 'CrossFit injury'.
- Analysis : nine paper from 96 papers (effects 5, injuries 4).

3. RESULTS

- The papers on the effects are summarized in Table 3-1 with a summary of the authors, years, subjects and results.
- For each outcome, only statistically significant figures were compiled with increases and decreases.
- The study of injuries is shown in Table 3-2.
- Each research papers are separated by authors, years, research objects and results, respectively.
- The results are summarized in the injury rates and the areas most injured among the participants.

Table 3.1 Effects Summary Results

Author /Year	Feito Y. et al.	Matthew F. et al.	Feito Y. et al.	Stephan Nieuwit et al.	CHOI E. et al.
	2018	2018	2019	2017	2017
Object	Recreationally active adult 26 (M9, F17)	14 inactive adults without HIFT experience (4M, 10F)	9 inactive people nonsmokers between the ages of 18 and 40, 25~40BMI.	12 Type 2 diabetes patients (M4 F8)	11 college students
Periods	16 weeks	8 Weeks	8 Weeks	6 Weeks	14 weeks
Effects	Bone Mineral Contents (BMC) Increase, %FAT decrease, Bone Mineral Density increase	Body Fat decrease, Lean body mass Increase, Physical factor* test results Increase	Leg lean body mass Increase, Feit% Decrease	Body fat decrease, VO2max increase, ALD, AST, and ALT decrease (liver function enzyme)	Body Weight Decrease, BMI Decrease, Muscle weight gain, BMR Increase

*Leg press 5RM, Bench press 5RM, YMCA test, Set-up test, and Set-and Reach

Table 3.2 Injuries Summary Results

Author /Year	Feito Y. et al.	Aune KT. et al.	Mingchelli B. et al.	Benjamin M. et al.
	2018	2017	2019	2014
Object	3048 participants in the crossfit for 3 months or longer	247 participants in the crossfit.	270 participants in the crossfit. (15 to 53 years old)	386 participants in the crossfit.
Results 1 (injury rate)	30.5% of all participants experience injury	85 people were injured (34%). Total 132 injuries. 2.71 per 1000 hours	Sixty-one people were injured (22.6%) Total 80 injuries. 1.54 per 1000 hours	75 of 386 people injured (19.4%)
Results 2 (injured region)	39% shoulder, 36% waist, 13% knees.	Shoulder or upper arm 15%, Trunk, back, head, or neck 12% Leg or knee 12%	Joint 30.8%, Muscle 23.1% / Shoulder 35.9%, Lumber spine 17.9%	Shoulder-low back - injured in order of knee.

4. CONCLUSION

- Decrease body fat rate (5 of 4)
- Increase in the amount of muscle mass. (5 of 3)
- Increased bone density, muscle strength,
- Decreased liver function enzymes (ALP, AST, ALT).
- Considering this, the effect of HIFT is to reduce body fat and increase in muscle mass regardless of the subject of participation.
- Injury experiences approximately between 20 and 30% of all participants.
- When looking at injury time per 1,000 hours, the probability of injury is one to two. This is a low level compared to sports such as running (7.7 in recreational runners').
- HIFT participants' ranking of injuries by region was shoulder, back and knee.

5. SUGGESTIONS

- A little more specific study on the effects of HIFT is expected to be needed.
- In particular, further research is likely to be needed on various factors of physical strength (cardiac endurance, muscle strength, muscular endurance, flexibility, etc.) and motor function strength (power, agility etc.) in terms of overall physical strength improvement.
- In the case of injuries, the research participants' HIFT experience is not clear, and a detailed career survey is expected to be needed in the next study.
- In addition, it is hoped that studies of what is at high risk of injury and programs to prevent it are conducted.
- Finally, more research appears to be needed in the future compared to other training methods or sports.

REFERENCE

*Sokeij Videbeek, corresponding author Andreas Moeskelle Buenu, Rasmus Oestergaard Nielsen, and Sten Rasmussen. Incidence of Running-Related Injuries Per 1000 h of running in Different Types of Runners: A Systematic Review and Meta-Analysis. 2015
*Feito Y, Hoffstetter W, Serafini P, Mangine G. Changes in body composition, bone metabolism, strength, and skill-specific performance resultsong from 16-weeks of HIFT. 2018 eight others. For lack of space, I omit the others.

2019. 가온체 포스터