

FUKUSOU PROJECT
福奏プロジェクト

Fukuoka University Research Branding Project

(Ministry of Education, Culture, Sports, Science and Technology AY2017
Private University Research Branding Project)

Creating an Energetic and Healthy Life

Fukusou Project

Research paper (AY2020)

Report on Fukuoka University's Research Branding Project

(As of the End of September 2020)



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Project Overview

Modern society creates a range of issues that are preventing people from living healthy lives, such as a decline in child rearing ability, an increase in children unable to adapt to school, the spread of lifestyle-related diseases, and dementia and isolation among the elderly. The Fukusou Project is a progressive health program designed to help people gain energy by carrying out physical, psychological, and social interventions through family support, school education support, and activities for people in their mid-life and senior years.

“Fukusou” expresses the aim of creating a sustainable, healthy, and happy local society by converting the “knowledge” of university into “value” for the community. We will do this by creating energetic and healthy lives based on mutual cooperation within a community.

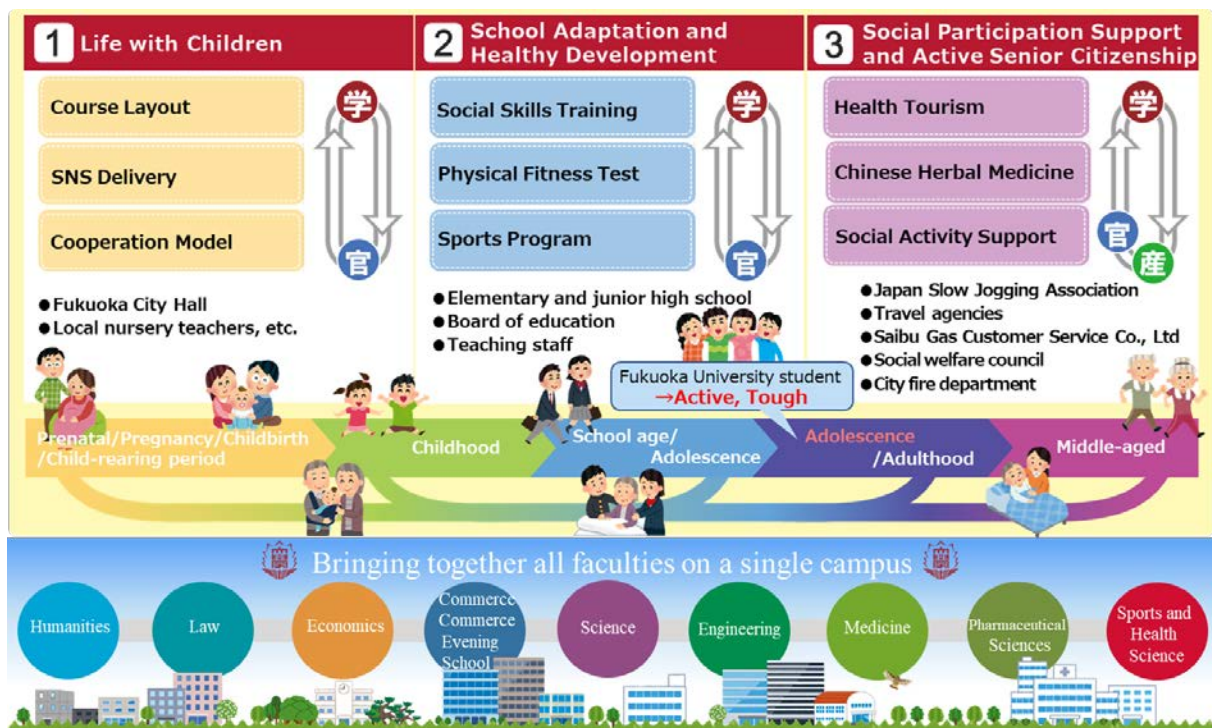
Fukuoka University is a university that houses a Faculty of Humanities, a Faculty of Social Science, and a Faculty of Natural Science on one campus. The project leverages this uniqueness and the successes that have been achieved to date and its three teams, which comprise members from each of the faculties, build connections and collaborate with partners in areas such as industries and politics while working to solve health-related issues.

The compositions of the research teams is as shown below.

Team 1: Life with Children (pregnancy, childbirth, and early childhood)

Team 2: School Adaptation and Healthy Development (later childhood and adolescence)

Team 3: Social Participation Support and Active Senior Citizenship (mid-life and senior years)



Fukusou Project overview image

General Report

Holding of a Kickoff Meeting

The Fukusou Project was selected by the Ministry of Education, Culture, Sports, Science and Technology (MEXT) as one of its “Top Global University Projects” (Type B, Globalization traction type) among the AY2017 MEXT Private University Research Branding Projects. On January 15th, 2018, a kickoff meeting for the project was held at Fukuoka University's International Conference Room.

At the meeting, the General Research Supervisor stated that the objective of the project is to “Demonstrate the brand value of Fukuoka University by leveraging the health science-related undergraduate programs offered at the same campus and integrating individual research projects that have studied different times of a person's life. We aim to translate the “knowledge” as the product of academic research into “value” for society, thereby helping build a society where good health is sustainable.” His speech was followed by presentations from the three research teams, each of which was named based on a specific age range: Life with Children (pregnancy, childbirth, and early childhood), School Adaptation and Healthy Development (later childhood and adolescence), and Social Participation Support and Active Senior Citizens (mid-life and senior years). Each team presented a summary of and the outlook for their research.

At the meeting, Nobuo Oguruma, the Saibu Gas Customer Service Company Limited President and CEO, gave input from a private sector perspective, touching on the government-industry-academia partnership which is one of the features of the project. He reported that his company's meter readers had received training for communication skills offered by Fukuoka University so they can talk to local senior citizens whenever possible to make sure they are doing well. As input from a local government perspective, Shigeki Takesue, the Mayor of Nakagawa Town, stated that the town had started offering local senior citizens a workout program called "Niko Niko Pace (Smiling Pace)" consisting mainly of slow jogging and stepping exercise, and that the workout improved the participants' muscle strength as well as cognitive functions. The meeting also had a Q&A session in which all participants actively exchanged their views, including Akie Omagari, the Deputy Governor of Fukuoka, who attended the meeting as a guest.



Scenes from the kickoff meeting

Launch of a Website and Regular Progress Reports

We have launched a dedicated Fukusou Project website (in both Japanese and English) and we provide regular reports on project progress. To date, a total of 197 articles have been released (110 in Japanese and 87 in English).



URL: <http://www.suisin.fukuoka-u.ac.jp/home1/branding/english/index.html> / Search “Fukusou Project”

Creation of Brochures

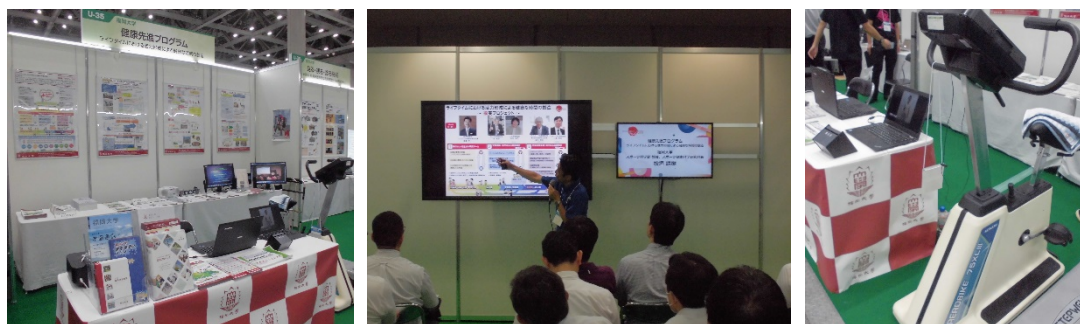
We created a brochure and a revised brochure featuring content such as an overview of the project and messages of support from partners people in industry and government. We distribute these to the relevant people in order to introduce and further promote the project.



Fukusou Project at the University Exhibition of Innovation Japan 2018

Innovation Japan 2018, organized by the Japan Science and Technology Agency, was held at Tokyo Big Sight on August 30 (Thu.) and 31 (Fri.), 2018. The Fukusou Project participated in the event as a university exhibitor. The University Exhibition was added to the event in 2017 to facilitate the development of new partnerships between academia and industry and the creation of value that comes with such partnerships. The

Fukusou Project booth demonstrated an exercise stress test along with a portable player that supports the user in slow jogging, and offered hands-on experiences of the test and using the device. It also presented videos that showed animal experiments we had done and a communications training session we provided for corporate employees. We also put up information panels in addition to copies of various literature and the Fukusou Project brochure we distributed to illustrate what we do for visitors and exchanged views and opinions with them. The General Research Supervisor also gave a 20-minute presentation. Over the two days, we were able to present the Fukusou Project to numerous visitors.



Scenes from the Innovation Japan 2018 exhibition (left, right) and presentation (center)



Scenes from the Innovation Japan 2018 exhibition

Holding an International Symposium

We held the first international symposium “Creating Time Spent in Good Health by Gaining Energy throughout a Lifetime: The ‘Fukusou Project’” for two days from December 13 (Thu.) to 14 (Fri.), 2018. Many participated both from inside and outside the university, and lively discussions took place.

On the first day, following opening remarks from the university president and guest speakers, there were keynote lectures, dialogues, and a panel discussion held. Keynote lectures were given by Ms. I-Min Lee, senior professor at the Harvard School of Public Health, and Mr. Aman Pulungan, president of the Asia Pacific Pediatric Association and professor at the Department of Pediatrics of the University of Indonesia.

Professor I-Min Lee talked about her study in which she concluded that 6 to 10% of non-infectious diseases, such as heart disease, diabetes, and cancer, which pose problems all around the world, are caused by a lack of exercise. Explaining her recommended preventative measures, Ms. Lee stressed the importance of exercise, noting that “research has clearly shown that exercise contributes to the prevention of heart disease and diabetes and also the reduction of the rate of mortality.”

Professor Aman Pulungan talked about the current situation surrounding children's health in Asia, pointing out that in Asian countries in particular, the challenge is to reduce the mortality rate of newborn infants and children aged five and under. He explained that behind such health issues lie various intricately linked social factors, including family environment, access to education, violence, and drug abuse. He stressed the importance of Asian countries working together towards collecting and sharing accurate data relating to children's health.

For the panel discussion, Mr. Shuji Yamamoto, General Managing Director at Seibu Head Office, The Mainichi Newspapers, acted as the moderator and the members were as follows: Professor I-Min Lee; Professor Aman Pulungan; Ms. Mutsumi Shigyo, Director of the Jonan Ward Health and Welfare Center, Fukuoka City; and Professors Yasuki Higaki and Shinichi Hirose from Fukuoka University. The panelists confirmed the importance of developing a habit of enjoying taking healthy meals and doing exercise in everyday life.

The second day featured Session 1: “Challenge for social contribution towards regional elderly” and Session 2: “Research on a safe and effective preventive program involving Slow Jogging®”. In the last session, Mr. Katsutoshi Arie, CEO and president of Seiko IT Solution Co. Ltd., and General Research Supervisor Professor Higaki each delivered a speech on the fruits of the two-day symposium.

A total of 320 people took part over the two days.

We also created a report on the international symposium and shared it on the Fukusou Project website.

(Reference URL: <http://www.suisin.fukuoka-u.ac.jp/home1/branding/english/news/20190105000891.html>, posted May 31, 2019)



Scenes from the symposium

Introducing Research Ideas at the 2019 New Year Industry-Academia-Government Technology Meeting

On January 11 (Fri.), 2019, the 2019 New Year Industry-Academia-Government Technology Meeting was

held with Fukuoka University as main host and Fukuoka University Industry Academia Collaboration Council as co-host. Two presentations about Fukusou Project initiatives were given as part of the events “Introducing New Fukuoka University Research Ideas” section.

“Striving to Create Shared Value Alongside the Fukusou Project” Professor Yasuki Higaki, Faculty of Sports and Health Science

“Creating Social Contribution from Companies Toward New Regional Communities” Associate Professor Michie Baba, School of Nursing, Faculty of Medicine

Conducting External Evaluations

Each academic year we send a report to an external evaluation committee comprising a total of 10 individuals who are experts or people involved in business or local government. This committee then conducts an external evaluation by document (to date, it has been carried out three times, in AY2017, AY2018, and AY2019).

The evaluation assesses the following criteria.

✓ The setting and direction of research project themes is assessed using criteria such as if it meets social needs and the demands of the times, how it relates to future policy issues, and its consistency with the future vision of the university. Assessments on these criteria have included “interesting,” “promising,” and “relevant.”

✓ The activities of each team have been evaluated highly for their methodology. They have gone beyond the boundaries of general lecture formats and sports instruction by devising program content that utilizes equipment and creativity to create approaches that target specific age groups.

✓ Exercise content was positively assessed as “productive,” “unique,” and “timely.”

However, the following opinions were provided regarding expectations or challenges for the future.

✓ We were advised to coordinate and establish collaborative schemes between industry, academia and government, to shape the overall project as a unified regional initiative, to carry out high-quality verification of effects, to report effectively to local communities, and to compile and promote usage of a database.

✓ As each research theme involves an important social issue, there was a lot of expectation and desire to see spillover effects in local governments, the development of national and prefectural models, and social implementations such as the transfer of initiatives to the private sector and popularization of health management with an eye toward sustainability. Also, we were also advised to utilize IoT devices to reduce the burden of implementing initiatives on location.

✓ Points were also made on the production of objective data, the utilization of the initiatives being implemented by each team in industry, educational establishments and within the local community (social implementation), and the need for a broad, medium- to long-term evaluation of the impact on the local community and society.

Team 1: Life with Children (pregnancy, childbirth, and early childhood)
Creating Child Rearing Ability and Regional Capabilities to Mutually Support
“Life with Children”

Objective

In Fukuoka City, people are tending to marry later, the number of households containing just a nuclear family, especially households where both spouses work and which do not have children, is increasing, and there are issues regarding the creation of a secure environment for raising children. This team aims to train and improve the qualifications of support personnel so they can provide seamless support that is appropriate for the individual circumstances of each person, including before pregnancy, during pregnancy, during childbirth, and while raising children.

Support During Pregnancy and Childbirth

The team is implementing three initiatives to provide support during pregnancy and childbirth.

1) Support workshops for expectant and nursing mothers with poor prognoses and their families

We have been holding support workshops for expectant and nursing mothers with poor prognoses and their families (including fathers and grandparents) in collaboration with the obstetrics unit of Fukuoka University Hospital’s Center for Maternal, Fetal, and Neonatal Medicine. In AY2017, we also began collaborating with the Jonan Ward Health & Welfare Center of Fukuoka City and inviting local expectant and nursing mothers to participate. From AY2018, we continued the initiative as parenting and grandparenting workshops. Regular workshops are held monthly and to date, 387 people have participated in a total of 36 workshops. Out of these, 40.3% were grandparents, 43.1% were mothers (or expectant mothers), and 15.4% were fathers. The workshops featured points such as the differences between raising children in the past and today, focusing on the confusion that can be caused when grandparents and mothers have a different awareness regarding childrearing, such as “It used to be like that, but now it’s like this...,” as well as ways of proceeding with weaning, preventing tooth decay, hydration and drinking water for infants, the advantages of men being involved in childcare, preventing risks at home which involved using the Home Care Practical Training Room in the School of Nursing to check for potential risks, and an introduction to risk prevention goods. There was a high level of satisfaction with the workshops, and participants were particularly satisfied with the hands-on experiences provided, such as practice giving a baby a bath, baby food tasting, and risk prevention at home.



Workshops for expectant and nursing mothers with poor prognoses and their families



Workshops for expectant and nursing mothers with poor prognoses and their families

2) School/workshops for expectant parents

The needs of the participants who took part in the previously mentioned workshops and their desire to “interact with real babies” led to the holding of a school for expectant parents (AY2017)/workshops for expectant parents (AY2018/2019). These have been held around two times a year to date and 93 people have attended five workshops in total. They were held in cooperation with a private sector partner (NPO) and their main feature was interactive elements, including a chance to learn from “babyhood teachers” by interacting with their actual babies and listening to their experiences. The workshops also included a lecture from a pediatrician on finding a good family pediatrician and getting immunized, and couples attended a class on communication between spouses. In addition to this, there was a “school for expectant fathers” in which the fathers discussed ways to enjoy life as a father, and a “school for expectant mothers” in which used a hand massage experience as a means to realize communication and comfort. Participants were satisfied with the workshops and gave comments on the effects of program content such as “The opportunity to get hands-on with a baby and listen to the mother’s real experience was very useful,” “It was very valuable to interact with other expectant fathers,” and “Communication between spouses is important, so we will prepare to welcome the baby together going forward.” We also found ways to attract participants, such as holding it jointly with a “school for expectant fathers” that was already being held in Fukuoka City’s Jonan Ward.



School/workshops for expectant parents



School/workshops for expectant parents

3) Exploratory research into mothers who give birth to high-risk babies including tendencies toward depression and anxiety, child rearing difficulties, and feelings toward their babies

Target: Nursing mothers who have given birth to newborn infants currently hospitalized in the neonatal unit of Fukuoka University Hospital’s Center for Maternal, Fetal and Neonatal Medicine who have received explanations about filling in the questionnaire for this research and have agreed. Permission has been received from the Fukuoka University-Medical Ethics Review Board (2018M097). Questionnaire items and schedule are shown in Table 1. To date 14 cases have been surveyed, including multiple births, with childbirths occurring in the 34th week of pregnancy or later. Points scored on a questionnaire using the Edinburgh Postnatal Depression Scale (EPDS) tend to be higher directly after childbirth. There were cases with scores high enough to indicate depression recorded directly after childbirth or one week later, including one case of nine points or above, two cases of eight points, and two cases of seven points. By analyzing scores given on a “Feelings Toward Baby Questionnaire,” we were able to understand how close mother’s feel to their baby and any troubles they have.

Table 1: Questionnaire Items and Schedule

3) EPDS questionnaire	Soon after childbirth	One week after	Two weeks after	One month after
1) Circumstances of mother	○			
2) Situation and state of child (as understood by mother)	○	○	○	○
3) EPDS Questionnaire	○	○	○	○
4) Feelings Toward Baby Questionnaire		○	○	○
5) STAI Survey measuring tendency toward anxiety	○	○	○	○
6) Birth, puerperal period, and condition of the newborn infant	○			
7) Specific anxieties and worries	○	○	○	○
8) Support wanted from healthcare providers	○	○	○	○

Support During Child-Rearing

The team is implementing three initiatives to provide support during child-rearing.

(1) We planned and implemented workshops for nursery teachers and workshops for parents involving content about health problems that cause problems for nursery schools, healthcare provision, and care at home. 52 nursery teachers participated in a workshop on vaccinations and child fevers. 47 parents participated in a workshop on caring for a child with a fever. Both nursery teachers and parents were highly satisfied with the workshops. In April 2018, we proposed a collaboration with Fukuoka City aimed at improving childcare guidance at nursery schools and since then we have been developing the Health and Safety Workshop outlined below and training that uses medical simulators.

Furthermore, we have held a total of eight workshops for nursery teachers in Kitakyushu targeting 11 nursery schools in Kitakyushu City, Fukuoka Prefecture. The themes for these workshops have included accidents involving children, infants and the media in nursing, convulsions, and anaphylactic shocks. Within this, Team 1: Life with Children (pregnancy, childbirth, and early childhood) and Team 2: School Adaptation and Healthy Development (later childhood and adolescence) collaborated to hold a training session on child obesity. We demonstrated coordination training that is being developed in collaboration with the Fukuoka City Board of Education and participants tried out a physical education program for nursery school age children that can be implemented immediately.



A workshop for nursery teachers in Kitakyushu

(2) We jointly hosted Health and Safety Workshops with Childcare Support Division of Fukuoka City (AY2018-2019). Regarding research effects, the theme of the workshops was to verify “The Effects of Step-by-step Training in Providing Nursery Teachers and Nurses with the Skills for Handling Emergencies at Nursery Schools, Etc.” and permission to implement this was granted by the Fukuoka University-Medical Ethics Review Board (2018M077). In AY2018, we held a basic session (299 participants), training sessions (a total of 75 participants over two workshops), and review sessions (30 participants). We then assessed the support skills of these participants and came to the conclusions below.

1) 75.3% of nursery teachers have experienced close calls while caring for children and 22.1% had experience of providing emergency care due to a sudden change in a child’s situation. 2) Simulation training made it easier for participants with little experience to imagine emergency situations and consider specific steps to

handle them. 3) The opportunity for nursery and healthcare professionals to train together improved the knowledge and skills of nursery teachers regarding healthcare and enabled healthcare professionals to learn about issues facing nursery schools and unique tactics for dealing with children, and this mutual interaction leads to the establishment of nurturing environments for children.

In AY2019, we jointly held the Fukuoka City Health and Safety Workshop with the local government, which involved a basic session, training session, and review session and a step-by-step evaluation of the simulation training. The basic session was attended by 294 participants, with a satisfaction rate 90%. In the training session, 84 participants engaged in a training using the simulator Sim Junior, all of them showing satisfaction in the experience. 40 people participated in the review session. As a result, we expect the series of workshops to have follow-on effects such as nursery teachers using content, they have learned through the sessions to conduct training at the nursery schools where they work, requests to borrow original DVDs compiled by the university titled “How to deal with convulsions” and “How to respond to anaphylactic shock,” and the implementation of training at nursery schools in the city.

Participants in the second year included 527 for the basic session (held in November), 156 for the training session (held in December) and 60 for the review session (held in February). Following “training for responding to feelings of unwellness and the occurrence of injuries during childcare,” participants were asked how confident they were dealing with such situations and how this related to the training period. In each of the training periods, the highest ratio of participants felt they were able to respond to vomiting and diarrhea, nose bleeds, and cuts, while the ratio for eye injuries and drowning were the lowest. Depending on the training period, the ratios for burns, accidental ingestion, broken bones and sprains, convulsions, difficulty or stopped breathing, and calming down during anaphylactic shock differed significantly. For any of the items, no significant difference was observed regarding behavior responding to an emergency situation. It is possible the items where the ratio of participants who felt they could handle a situation differed significantly depending on the training shows the effectiveness of the training. However, for items where the ratio is low, it is difficult to say the training has been successful. We think that the training for convulsions and calming down during anaphylactic shock, which incorporated the simulator, were successful.



Health and Safety Workshop



Health and Safety Workshop

(3) We held the Fukuoka City Allergy Workshop with the aim of promoting understanding among nursery school staff about ways to deal with infants with food allergies. There were 308 participants and 73% commented that the workshop was a very helpful experience. The workshop was given by a physician and elements that seemed to have had an effect included the opportunity to use a real EpiPen, and the use of an original DVD to enable participants to imagine how to respond to emergencies at actual nursery schools.

Team 2: School Adaptation and Healthy Development (later childhood and adolescence)

2-1: Creating School Cultures that Foster “Strength to Live”

Objective

During a person’s lifetime, it is thought that later childhood and adolescence is the period in which a person develops the self-respect, psychological and social skills, adaptability, and other aspects that form the basis of their independence as an individual. However, nowadays there are many children and students who are reluctant to participate in school life because of factors such as relationships and stresses in their daily lives, as evidenced by phenomena such as truancy, bullying, and social withdrawal.

School is one of the main places of activity in children’s and adolescents’ lives and this project aims to cultivate and improve skills needed in school life, such as the ability to handle stress, interpersonal skills, and self-regulation, through the clinical psychology methodology of social skills training (SST). This will enable children and students to gain appropriate levels of self-esteem and feelings of efficacy, ultimately reducing school maladaptation as manifested in phenomena such as truancy, social withdrawal and bullying. We also think it will lead to the creation of school cultures that ensure children and students have a positive view of society and the future. Another goal of the project is to produce results by raising the guidance and support skills of teaching staff.

SST Intervention Research at Elementary Schools and Junior High Schools

This research involved empirically verifying the relationship between qualitative human development in the form of the everyday behavior and attitude of children at school and the hypothesized self-image factors behind this (self-esteem, sense of trust, confidence, resilience, etc.), the process of transformation, and encouragement factors. This required an approach that covered a considerable time period, so we carried out follow-up research over three years. Therefore, in consideration of the fact the research put a large burden on teachers at cooperating schools in terms of time and work and in order to be fair on the children taking part, the research needed to cover all classes in the target year groups. Based on this, we asked the Fukuoka City Board of Education’s Student Guidance Section for help in selecting schools to cooperate in the research.

Method

We selected one elementary school and one junior high school as model schools and carried out SST-based instruction for 150 fourth graders (five classes) and 120 seventh graders (three classes). The training was carried out by trained undergraduate students from the Department of Education and Clinical Psychology in the university’s Faculty of Humanities and graduate students from the university’s Graduate School of Humanities who are majoring in Education and Clinical Psychology, in a group of three classmates for 45 minutes of training for each elementary school and in pairs for 50 minutes of training for each junior high school.



SST-based instruction

The flow of SST is as follows. 1) Instruction, 2) demonstration modelling target skills, 3) practice through role play, 4) everyone announces good points, 5) everyone thinks of points that could be made better, 6) practice through role play again incorporating improvements, 7) everyone announces good points, 8) students try out practiced skills in real school and home situations. In order to monitor the application of practiced content, we gave the children printouts in the form of homework and collected them after one to two weeks. We then gave feedback to the students through comments on collected printouts and overall feedback during the following round of SST.

We used social skills measures and self-esteem measures to verify effects.



SST-based instruction

The research was approved by the Ethics Committee of Fukuoka University. Research title: “Research into the Fostering of Energetic Children and Good School Adaptation Support for Children and Adolescents,” research approval number: 18-12-02

Results

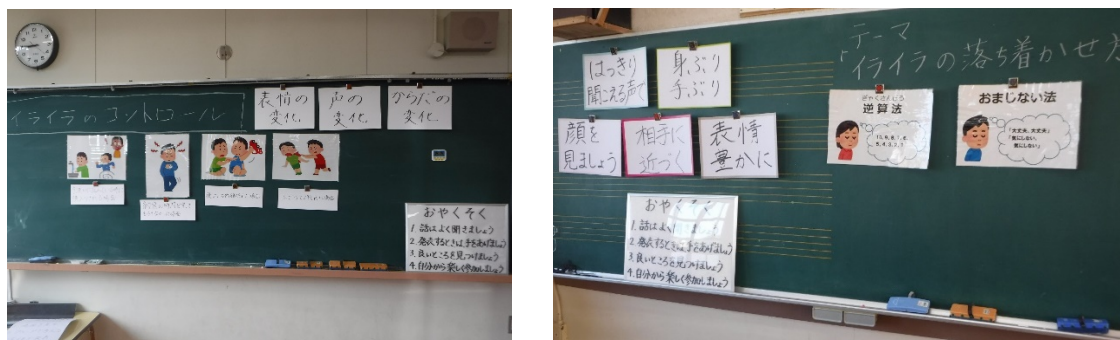
The training was carried out five times per academic year at the elementary school for a total of 15 times over three years. At the junior high school, it was carried out four times in the first year but only once in the second year, as the eighth graders had full schedules and could not find the time. It was impossible to continue after this.

The skills targeted by the initiative were as follows.

Elementary school: Lively greetings, addressing people in a friendly manner, making friends, reaching out to people in trouble, clearly expressing one’s own thoughts and feelings, asking a

favor effectively, saying no in a nice way, apologizing in a nice way, controlling feelings of irritation or annoyance, asking politely when confused

Junior high school: addressing people in a friendly manner, communication skills for expressing feelings (speaking skills), communication skills for expressing feelings (listening skills), asking questions when confused during work experience



Posters on the classroom blackboard (during SST)

The results report only used the elementary school data, as circumstances at the junior high school meant we were unable to get the data as planned.

Regarding changes among the students in the first year (when they were in fourth grade), the “social skills measure (elementary school version)” containing 15 items measured improvements in the three items of “encouraging friends when they fail,” “listening to requests from friends,” and “considering the other person’s feelings when speaking.” The “self-esteem measure” containing 22 items measured improvements in the five items of “I want to use my abilities for the benefit of other people,” “I can empathize with other people’s feelings,” “there are people who understand me,” “I am grateful to the people around me who take care of me,” and “there are people who need me.”

Comparing how students were at the start of the intervention and how they were at the end of the second year (the end of fifth grade), out of the 15 items on the “social skills measure (elementary school version),” there were big improvements in the three items of “playing by myself, apart from friends,” “quietly watching friends play,” and “talking a lot with friends during breaks.” Out of the 22 items on the “self-esteem measure” there was a certain degree of improvement in the three items of “I can empathize with other people’s feelings,” “taking responsibility and acting once something has been decided, so as not to burden other people,” and “there are people who need me.”

Also, we gained evaluations from the homeroom teachers who participated in the SST with the children by holding individual 15-minute semi-structured interviews in March at the end of the school year, during which the teacher reflected on SST carried out over the year (five in the first year, four in the second). As a result, in their evaluations of the first year, the teachers said they had seen positive change, including comments such as “talkative children have started reaching out to less talkative children,” “they have become able to give opinions during group activities,” “they look forward to SST,” and “during end of day assemblies, they have become skilled at finding good points.” The teachers also found out things about themselves, saying “looking at the way the students from Fukuoka University interacted with the children, I

noticed I was not being very considerate,” and “I was demanding too much from them.” In their evaluations of the second year, they also saw positive changes such as “there were children who looked at the posters used during SST and the checked if they were demonstrating that skill,” and “opportunities to talk have increased.” The teachers also said that they found it very useful to incorporate elements of SST into the way they teach lessons and that they had been using end of day assemblies to get the children to reflect whether they had been using their social skills.

Conclusion

Through SST, all of the children practiced specific interpersonal situations seen in everyday life and became more confident in their own lives. This is evaluated by teachers and reinforced through comments. This method encourages the acquisition of skills and we think it improved confidence and self-esteem.



Children practicing during SST

Holding a Workshop

We combined the reporting of this initiative with a hands-on workshop-seminar on SST for teachers, school counselors, and psychologists based in Fukuoka Prefecture with the aim of spreading the use of SST within school education. In addition to reporting on the background and results of this research, we carried out a demonstration of SST and group work on how each profession can use SST and other helpful tips. Also, through a practical report of the school adaptation support classroom Yutoriya, we explained the truancy situation in Japan and Yutoriya’s activities.



Scene from the workshop

Team 2: School Adaptation and Healthy Development (later childhood and adolescence)
2-2: Initiatives Toward Effectively Using New Physical Fitness Tests and
Increasing the Quality of Physical Education and Sports at Schools

Objective

We advanced a joint project with the Fukuoka City Board of Education and elementary schools to undertake research involving physical evaluations of elementary school students and we verified that a child's weight at birth and birth month have an effect on their build, physical fitness, and sporting ability as a child. Furthermore, we have engaged in physical education lesson support initiatives at elementary schools that utilize coordination training, soccer, swimming, snorkeling, and other specialist knowledge and skills. This goal of this research project is to further develop initiatives carried out to date with the aim of increasing the scale and accuracy of physical evaluations and to reflect the results of this analysis in physical education lesson support initiatives so we can propose physical education methods that are in line with the times.

Physical Evaluations

Method

We sent undergraduate students, graduate students, and teaching staff from the university's Faculty of Sports and Health Science to multiple elementary schools in Fukuoka City to support the implementation of the Ministry of Education, Culture, Sports, Science and Technology's New Physical Fitness Test (eight items), which is carried out each year at elementary schools across Japan, and then analyzed the test results. The aim of our analysis was to obtain information on a student's lifestyle habits, such as weight at birth, number of hours slept, number of hours spent watching television, and exercise habits, provided we had permission from the student, their guardian, and the school.



Implementing the New Physical Fitness Test at an elementary school

Results

The results of analysis carried out to date are as follows.

Figure 1 shows the birth weight and current height of the boys. In each of the grades from fourth to sixth grade, boys who had low birth weights tended to be shorter. There was no correlation seen among the girls. Figure 2 shows a comparison of build and sporting ability between students born between April and June with low birth weights and students born in March with regular birth weights (2,500g or more). In nearly

every item relating to build and sporting ability, the students born between April and June with low birth weights outperformed the students born in March with regular birth weights. There is almost a year's difference in growth between a child born in April and one born in March. For children, it seems like one year makes a big difference.

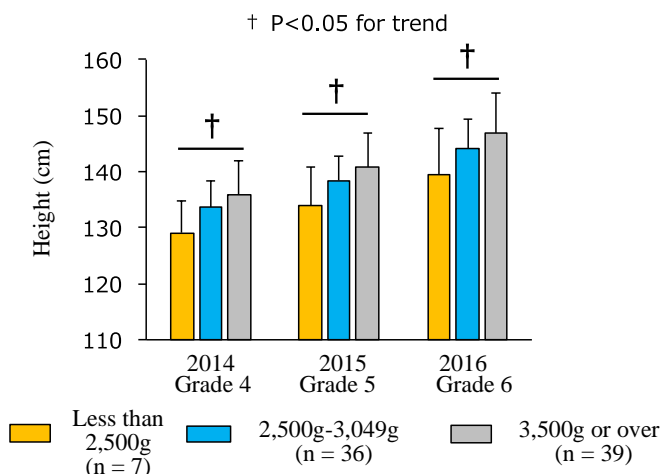


Figure 1: Relationship between birth weight and height of boys

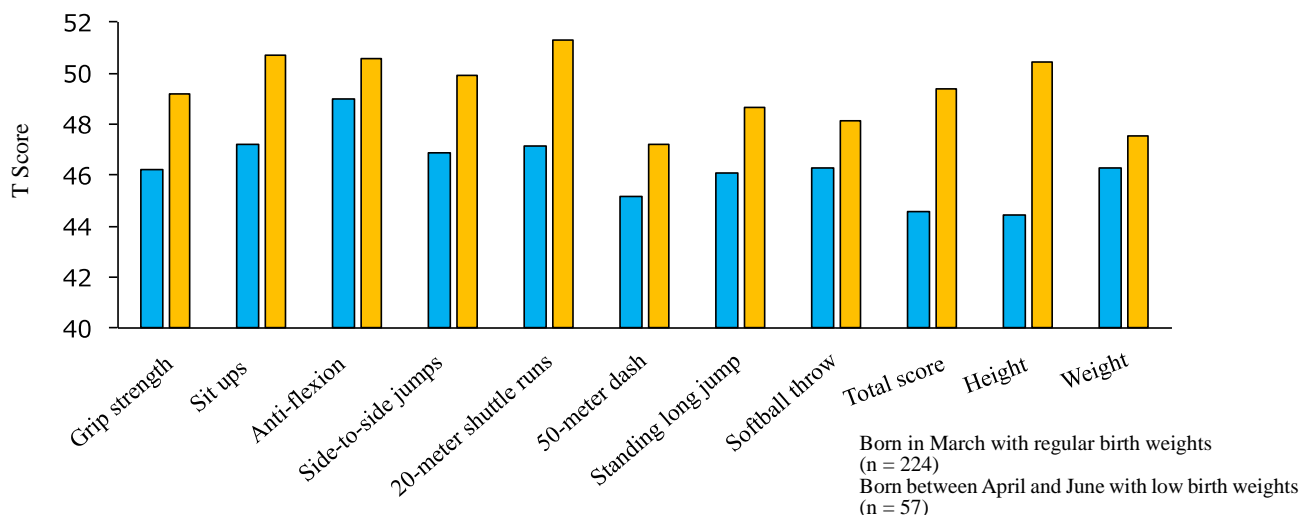


Figure 2: Comparison of build and sporting ability between students born between April and June with low birth weights and students born in March with regular birth weights

Analysis of 2,143 children from first to sixth graders at five elementary schools (1,227 boys, 1,186 girls) showed that overweight or obese children had significantly less sleep than average children (25.2 minutes) and watched televisions for significantly longer (19 minutes). Figure 3 shows a comparison of each type of build. For both boys and girls, overweight or obese children had significantly stronger grip than the other two build types ($p < 0.05$). We think this is because bigger bodies have larger muscle cross-sectional areas, enabling them to

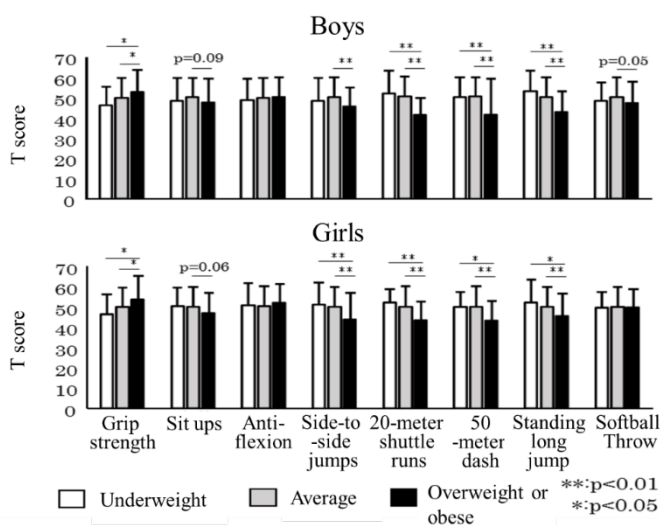


Figure 3: Comparison of build types

exert more muscular strength. For both boys and girls, overweight or obese children had significantly lower scores for the 20-meter shuttle runs, 50-meter dash, and standing long jump compared to the other two build types, as well as on the side-to-side jumps for girls, and for boys, overweight or obese children scored significantly lower on side-to-side jumps compared to children with an average build ($p < 0.01$). These items require agility, full body endurance, speed, and muscle power, and we think that for dynamic exercise, there is a relationship between movement and body weight. Regarding anti-flexion, there was no significant difference between the three build types and as flexibility is an important element for this exercise, the result implies that there is a weak relationship between body type and ability. We also adjusted results for each item of the test in accordance with lifestyle and exercise habits, but the results were the same as before the adjustment.

We proceeded with research on the relationship between the birth month and physical fitness of 4,163 students at seven elementary schools (2,060 boys, 2,103 girls). The children born between January and March scored lower in the physical fitness test than children born between April and June. At elementary school level, this trend was more prominent in the boys than the girls. We were able to confirm that children born between January and March who were members of sports teams or clubs were able to achieve similar scores to children born between April and June.

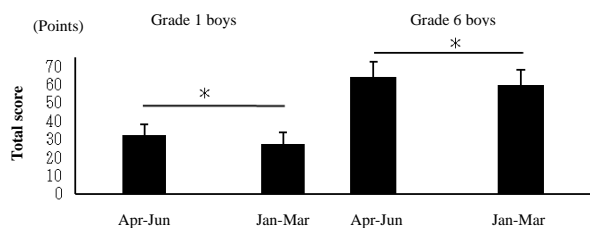


Figure 4: Relationship between birth month and physical fitness test result

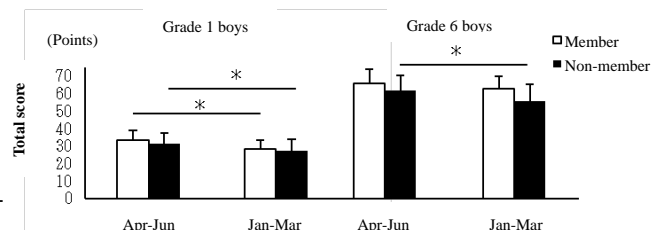


Figure 5: Relationship between birth month and physical fitness test result according to sports team or club membership

We then proceeded with research on the relationship between the birth month and physical fitness of 2,425 students at eight elementary schools (1,248 boys, 1,177 girls). As new evaluation criteria, we used a five-category evaluation method that used standard deviation (SD) from the average, with the five categories being average, +1.5 SD, +0.5 SD, -0.5 SD, and -1.5 SD. Among the children born between October and March, fewer were evaluated as A and B and more were evaluated as D and E, compared to the children born between April and September. Therefore, we tried creating new evaluation standards for the children born between October and March,

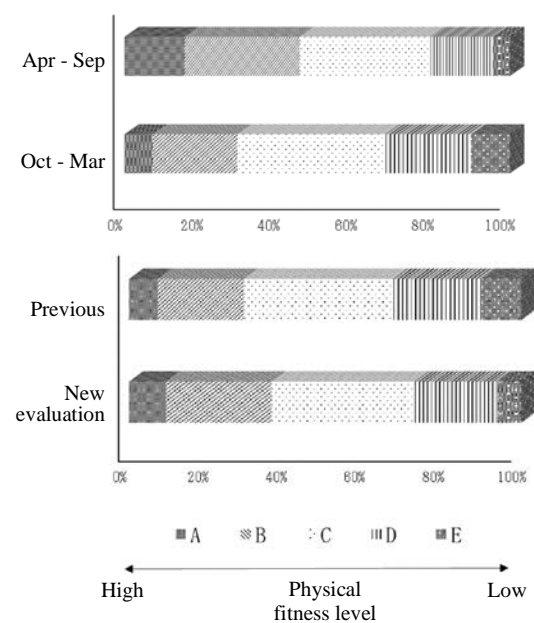


Figure 6: Distribution of physical fitness evaluations by birth month and new evaluation method

which increased the number evaluated as A and B and decreased the number evaluated as D and E. This suggests that the new evaluation method can decrease the disparity in evaluations caused by birth month.

Lecture

On October 18 (Fri.) 2019, the Fukuoka Prefecture Designated Commissioned Project for School Meal Research and the Fukuoka City Board of Education Research Promotion Project were held at Shiobaru Elementary School in Fukuoka City, under the research theme of “developing strong, health-conscious children through experiential activities and exchange activities.” In front of around 200 people involved in education, we introduced the new physical fitness test method advanced through collaboration between Fukuoka University and the Fukuoka City Board of Education, and shared the evidence gained from the initiative.



Coordination Training

We are advancing initiatives centered on the following three pillars as joint research with the Fukuoka City Board of Education’s Physical Fitness Improvement Committee, with the aim of spreading a new neuroscience-based training program (coordination training) developed in Germany, a leading country for sports, and improving the physical fitness of children in Fukuoka City by raising the quality of physical education lessons.

- (1) Creation and development of program content
- (2) Provision of training opportunities to teaching staff at schools
- (3) Research and investigation (verification of the effects of introducing new teaching methods, etc., from a neuroscience perspective)

(1) Creation and development of program content

- Creation of leaflets through the Physical Fitness Improvement Committee (distributed to all schools on March 17, 2017)

- Joint creation of manuals and DVD with the Fukuoka City Board of Education (distributed to all elementary and junior high schools in Fukuoka City on April 1, 2018)



Example leaflet



Manual and DVD

(2) Provision of training opportunities to teaching staff at schools

- Junior high school health and physical education workshop (April 14, 2016/approx. 120 participants)
- Junior high school teacher training workshop (August 8, 2016/approx. 50 participants)
- Coordination training workshops (held on February 16 and 22 in 2017/total of approx. 200 participants, held on April 17, June 8, and June 16 in 2017, and February 15 and 21 in 2018)

⇒The workshops were held for teaching staff from elementary and junior high schools in Fukuoka City and at least two teachers from each school participated. It used practical methods to communicate tips and points to be aware of when teaching content contained in the manual and DVD (distributed on April 1, 2018) in physical education lessons. As a result, there were many comments from participants along the lines of “I definitely want to use this in my lessons,” “I would like to learn about the program in more detail,” and “I hope you will hold a workshop on future content.”

- Session on coordination training given as part of a workshop for nursery teachers in Kitakyushu City’s Kokuraminami Ward, an initiative by Team 1: Life with Children (pregnancy, childbirth, and early childhood), (January 22, 2019)
- Workshop for teaching staff from Yokote Elementary School in Fukuoka City (January 31, 2019)
- Workshop for nursery teachers in Kitakyushu City’s Kokuraminami Ward, an initiative by Team 1: Life with Children (pregnancy, childbirth, and early childhood), (November 5, 2019)
- Workshops for teaching staff from Ono-kita Elementary School in Onojo City, Fukuoka Prefecture (April 3 and August 27, 2019)
- Workshops for elementary school teaching staff hosted by the Fukuoka City Board of Education (August 5, 2019)
- Workshop for teaching staff from Yokote Elementary School in Fukuoka City (February 10, 2020)

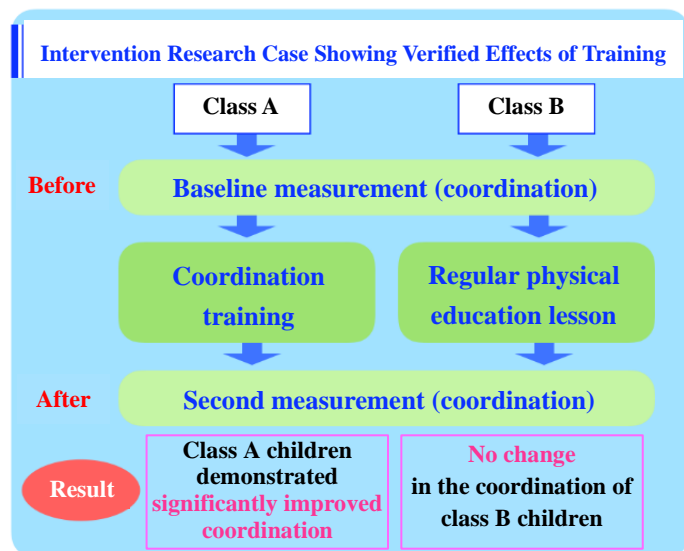
⇒The theme of workshops held from November 5, 2019 to February 10, 2020 was introducing and applying the training in physical education lessons using the manual and DVD.



A coordination training workshop for teaching staff

(3) Research and investigation (verification of the effects of introducing new teaching methods, etc., from a neuroscience perspective) – Verification of the effects of coordination training

We verified whether there were any effects at K Elementary School in Fukuoka City by comparing physical education lessons involving coordination training with regular physical education lessons and seeing if there was any difference in the degree to which coordination developed. The results showed a significant improvement in coordination among children who had taken the class with coordination training. On the other hand, there was no change in the degree to which coordination developed among children who took the regular class.



- April-June 2019: Intervention research (verification of long-term effects/ Ono-kita Elementary School in Onojo City, Fukuoka Prefecture)

- November-December 2019: Intervention research (verification of medium-term effects / Ono-kita

Elementary School in Onojo City, Fukuoka Prefecture)

- January-February 2020: Intervention research (verification of stress-reduction effects / Ono-kita Elementary School in Onojo City, Fukuoka Prefecture)

Soccer/Kids Soccer

Each year, together with staff comprising students from the university's soccer club, we hold kids soccer classes open to all students at Yokote Elementary School and Naka Elementary School in Fukuoka City. These are combined with practical workshops for teaching staff through which we communicate tips and specific methods for carrying out soccer-themed physical education classes.

The initiative concentrates on the following points.

- Effectively improving coordination and athletic ability
- Getting children who are not good at sports to have fun exercising
- Working together with teammates to share the joy of victory



Kids soccer (right), practical workshops for teaching staff (left, center)

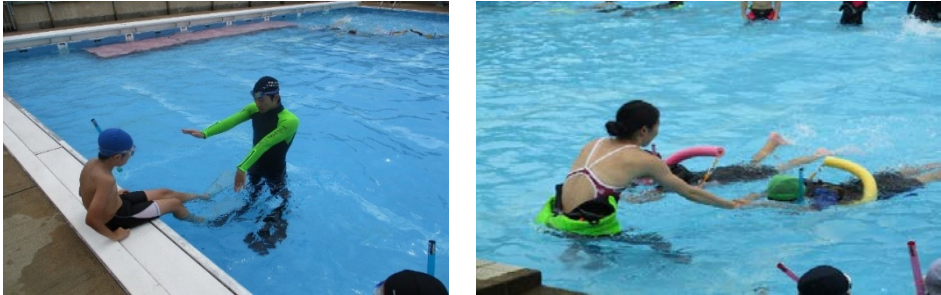
Swimming Class Support/Snorkeling Classes

Each year, in mid-June to coincide with the opening of elementary school pools, students from the university's Faculty of Sports and Health Science provide support for swimming classes at Naka Elementary School, covering children from first to sixth graders. This mainly consists of modelling the four swimming styles used in competitive swimming, assisting with swimming tests and providing technical instruction, and teaching swimming skills such as pushing off from the side, prone floating, and floating in a curled-up position. As this is the first week the pool is open, the water temperature is still low, but each year we have been able to provide support for active and fun lessons despite the cold.



Swimming class support

Around June and July each year, students from the university’s Faculty of Sports and Health Science hold two 90-minute snorkeling classes for elementary school students in collaboration with the Fukuoka Snorkeling Association. By using light equipment (mask, snorkel, fins), the classes have helped children who have never swum before to learn to float and hold their breath, and it has also eased their hesitation and discomfort around water, so that they become able to swim at least 25 meters by themselves (classes held at Yokote Elementary School and Higashi-Sumiyoshi Elementary School).



Snorkeling classes

Team 3: Social Participation Support and Active Senior Citizenship (mid-life and senior years)

3-1: Using Health Tourism to Support Health Promotion for Citizens

Objective

In recent years, interest in health has increased in Japan, and the forms in which health promotion is advanced are diversifying. In the travel industry, there has been a focus on health tourism (HT). HT is a new type of tourism that combines fun elements with healthcare elements, enabling people to travel while improving their health. Although there is demand to see a medical basis for HT, there has been very little research aimed at verifying this.

This research team has published many theses regarding the benefits of exercise for maintaining and improving health, and we have been verifying the effects of exercise at a manageable intensity for both young and old men and women for around half a century under the name of Niko Niko Pace (Smiling Pace). Slow Jogging® (SJ) is a method of jogging at the same speed as walking. It is exercise that can be done by anyone and it consumes about twice the amount of energy as walking at the same speed, making it an effective form of exercise for countering obesity and diabetes. Furthermore, as it is expected to improve the aerobic capacity of regular seniors and people with poor physical fitness, it is thought to be effective in extending healthy life expectancies.

This research aims to develop HT program that uses SJ and to verify its effectiveness in health promotion.

Health Tourism Verification Research

Method

(AY2016) *Implemented as a preliminary trial

Target: Three adults without regular exercise habits (one man, two women)

Schedule: Two-night, three-day HT ⇒ One-month self-management period ⇒ Two-night, three-day HT

(AY2017)

Target : 12 people aged 36 to 70 (three men, nine women)

Schedule : Tour 1 (four people) Two-night, three-day HT ⇒ One-month self-management period
⇒ Two-night, three-day HT

Tour 2 (eight people) Two-night, three-day HT ⇒ One-month self-management period

(AY2018)

Target : Six regular citizens aiming to become more healthy

Four runners aiming to lose weight and improve their records

Schedule : Two-night, three-day HT ⇒ One-month self-management period (regular citizens)

Six-night, seven-day HT ⇒ One-month self-management period (runners)

(AY2019)

Target : Five regular citizens (two men, three women)

Schedule : Two-night, three-day HT ⇒ One-month self-management period (*Still underway)

(*Plan to carry out detailed survey of body-fat percentage, amount of activity, aerobic capacity, etc. before and after HT, and then one month, three months, six months, and one year afterward.)

This research was carried out with approval from the Ethics Committee of Fukuoka University (Reviewed in AY2019 – Title: Verifying the Effects of Health Promotion Programs; Reference Number: 19-10-01). All participants gave informed consent.



Exercise capacity test (left), hydrostatic weighing (right)

1) Overview of the two-night, three-day HT program (*The runners-only HT program was six-night, seven-days)

The type of exercise used for HT was SJ, with a one-hour SJ program being carried out four times a day (SJ program: 40 sets of SJ for one minute and walking for 30 seconds). The intensity of the SJ exercise was set at either a pace that the participants subjectively considered to be “comfortable” or at a Niko Niko Pace calculated through exercise capacity testing (equivalent to about 50% of maximum oxygen intake).

Regarding activities other than SJ carried out during HT, we incorporated tourism elements such as tours of famous local sightseeing spots to realize a program that increased the amount of activity while staying fun.



Scenes of health tourism underway

2) Food

Meals were devised by a national registered dietitian and provided in collaboration with partners such as accommodation facilities and restaurants. Daily energy intake was set at 1,200 kcal and meals were devised that left diners feeling satisfied despite the lower number of calories. We also set the amount of protein intake at 1.5g per kg to curb any increased protein breakdown in skeletal muscles during weight loss.



Health tourism meals

3) Self-management period

Participants recorded their body weight and were equipped with an activity tracker (in cases where the self-management period was one year, this was equipped during regular assessment periods). They were also encouraged to carry out the SJ program once a day during the period. In regard to food, they were instructed to avoid unrestrained eating and drinking and to make a habit of considering the amount of energy in meals. Lists of ingredients and recipes used during the short-term stay (HT) were distributed to participants in advance and they were given lifestyle tips based not only on watching what they eat, but also burning calories through exercise.

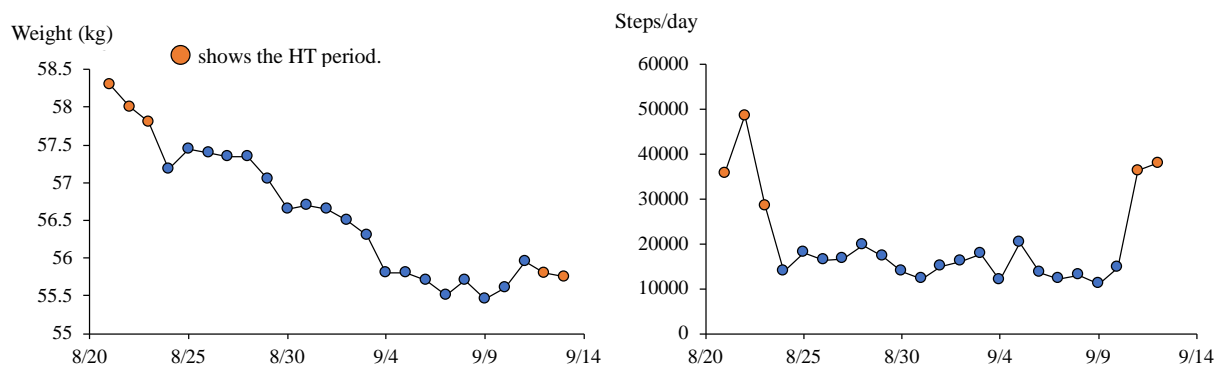
Results

(AY2016)

During HT, participants did SJ for about four hours a day over three days and all participants managed to complete the SJ program, even though they did not have regular exercise habits. Each day during HT they walked about 30,000 steps to 40,000 steps.

The graphs below show changes in step counts and body weight over time. Only two of the participants submitted records of their step count totals and body weight for a month. After completing one HT stay, they maintained a high level of physical activity, walking over 10,000 steps per day. There was also a downward trend in body weight as the days passed.

This preliminary trial of the HT program confirmed that even people not used to exercising could complete the program without any particular problems. It also suggested that high levels of physical activity can be maintained during the follow-up period after completing one HT stay.



Figures: Changes in weight and step counts over time during the HT period and follow-up period (n=2)

(AY2017)

One day's activity comprised 30,000 steps to 40,000 steps. Results after Tour 1 included a body weight decrease of 2.5 kg and an increase in aerobic capacity of 0.8 METs and results after Tour 2 included a body weight decrease of 2.8 kg, a 0.4 kg increase in skeletal muscle mass, and a 3.2 kg decrease in body fat. Over one month, including the self-management period, participants were able to lose about 3 kg of body weight and reduce body fat without losing skeletal muscle mass.

(AY2018)

During the two-night, three-day HT program, the regular citizens covered an average of 37,433 steps per day. Stamina was observed to increase by about 5%. In regard to body composition, they lost 3 kg of body weight and within this, the ratio of body fat within the trunk of the body decreased by 10%. There was a 1% decrease in lean body mass. Blood biochemical tests showed a 6% reduction in LDL cholesterol and a 12% decrease in neutral fats (triglycerides: TG). The runners saw an increase in stamina of 6% on average.

(AY2019)

Compared to before HT, the participants saw a 1.4kg decrease in body weight and a 0.8% decrease in body fat directly after, decreases of 2.3 kg and 2.1% respectively one month after, and decreases of 3.6 kg and 2.6% respectively three months after. Three months after HT, body weight had decreased 5.1% compared to before.

Table: Changes in body weight and body fat from before the HT to three months after (n=5)

Items	mean \pm SD	Change from Pre	Change from Pre	Comparison with Pre (P-value)	P for trend
<u>Body weight: kg</u>					
Pre	69.7 \pm 3.8	-	-	-	
After	68.2 \pm 3.4	-1.4 kg	-2.1 %	.187	.056
1 month after	67.4 \pm 3.1	-2.3 kg	-3.3 %	.029	
3 months after	66.1 \pm 4.5	-3.6 kg	-5.1 %	.270	
<u>Body fat: %</u>					
Pre	24.9 \pm 5.5	-	-	-	
After	24.1 \pm 5.4	-0.8 %	-3.3 %	.419	.059
1 month after	22.8 \pm 5.2	-2.1 %	-8.6 %	.040	
3 months after	22.3 \pm 4.1	-2.6 %	-10.3 %	.403	

Holding Seminars for Businesspeople

We held a seminar at BIZCOLI (Biz Communication Library) titled "The effectiveness of Slow Jogging for business and running – An ultimate running method born from sports physiology research," which was positioned as a seminar in support of the Fukuoka University Research Branding Project (January 24, 2018). This included a lecture and practical demonstration aiming to introduce and promote Slow Jogging and health tourism to businesspeople. At the start of the seminar, there was also an introduction to the Fukusou Project

and a chance to network with participants was provided after to explore possible tie-ups with individuals, companies, and other organizations.

BIZCOLI is a membership-based library operated by the Kyushu Economic Research Center. It is a place where businesspeople can gather based on the concept of “A base for the exchange of the production, accumulation, and exchange of wisdom.”

The event differentiated from the usual image of a seminar through the unique plan of combining a seminar with a networking event, held in a stylish environment with a casual atmosphere. It was attended by about 50 businesspeople (54 applicants).



Holding the seminar (left), a scene from the networking session (right)

Developing Health Tourism in Kama City, Fukuoka Prefecture

We have concluded a trilateral partnership and collaboration agreement (August 30, 2019) between Kama City, Fukuoka Financial Group, and the Fukuoka University Research Institute for Physical Activity, and are engaged in a Ministry of Health, Labour and Welfare Practical Regional Employment Creation Project. The project involves using Kama City’s tourism resources to develop health tourism products with the aim of increasing the number of tourists visiting the city and increasing employment, which will lead to regional revitalization. By combining evidence regarding health tourism with the Bank of Fukuoka’s network, Kama City is developing a case study for social implementation. On November 16 and 17, 2019, we held a one-night, two-day health tourism trip for 14 men and women, including participants from within Fukuoka City. In addition to this, we also implemented initiatives such as training sessions on Slow Jogging® and its social implementations.



Concluding the trilateral partnership agreement (left), health tourism in Kama City (center, right)

Health Improvement Measures in Fukuoka Prefecture (Collaboration with the Department of Public Health and Medical Affairs, Fukuoka Prefecture)

Fukuoka Prefecture is aiming to further extend the healthy life expectancy of its citizens by bringing together relevant organizations from various fields to improve citizens' health through the development of the Fukuoka Kenko-zukuri Kenmin Undo project. This will include an initiative promoting Slow Jogging® as one of a selection of specific exercises that citizens will be encouraged to do to establish good exercise habits. We gave lectures on “Effects and Practice of Slow Jogging” at the Fukuoka Kenko-zukuri Kenmin Kaigi General Meeting – Nippon Kenko Kaigi in Fukuoka - (January 25, 2019) and the Fukuoka Kenko-zukuri Kenmin Undo Seminar (August 7, 2019) and we have strived to further promote it through initiatives such as introducing evidence of its effectiveness for improving the health of citizens at the Food and Health Promotion Forum (January 31, 2020).

Reference: Fukuoka Kenko-zukuri Kenmin Undo website (Japanese only)

<https://www.kenko.pref.fukuoka.lg.jp/>

**Team 3: Social Participation Support and Active Senior Citizenship
(mid-life and senior years)**

**3-2: Developing Projects Providing Broad Support for Seniors
Through Industry-Academia-Government Regional Collaboration**

Objective

Teaching staff from the Fukuoka University Faculty of Medicine's School of Nursing Senior Support Team have created a communication skills training program* for meter readers from Saibu Gas Customer Service Company Limited ("Saibu Gas CS"), and we aim to develop a broad senior activity support project system through industry-academia-government partnerships, such as collaborating with local governments watch over seniors in the region and encourage social participation, and to verify the effects of the training program.

(*A program developing communication skills that incorporate health and watchful care from a nursing perspective)

Communication Training for Meter Readers from Saibu Gas CS' Western Sales Office

Method

From January to November 2017, we implemented a communication skills improvement training program comprising 10 sessions (including a completion ceremony) for 23 meter readers from Saibu Gas CS' Western Sales Office. Sessions were held about once a month and lasted 180 minutes each (apart from the second session, which was 90 minutes) (Table 1). The first two sessions were positioned as foundation sessions with the aim of first establishing communication between the school of nursing teaching staff and the participants. The third session onward involved training focused on seniors, including topics such as distance between oneself and other people and ways of providing care, taught in the form of lectures, exercises, and practical training. For the practical training, we prepared learning environments through collaboration with the Fukuoka City Council of Social Welfare, social workers from Fukuoka City's Jonan ward, and fire departments to enable the meter readers to achieve their goals and objectives.

This research was carried out with approval of the Fukuoka University-Medical Ethics Review Board. We also exchanged memorandums of understanding concerning the research with Saibu Gas CS and the Fukuoka University Faculty of Medicine's School of Nursing.

Additionally, scenes from the training were shared in a video on the Saibu Gas CS website and in Gas Energy News.

Also, in January 2020, we held lectures on "Your Own and Other People's Inner Feelings," and "Disaster Prevention - From Helplessness to Becoming Someone Who Can Help" as senior support follow-up training. (Table 4)

Table 1: 2017 Improving Communications Skills for Senior Support Training Program

	Time	Central Themes	Methods	Evaluation Method
1	Jan – 180 mins	1) Understanding the goals of the industry-academia-government partnership 2) Sharing the current situation, systems, and issues regarding seniors in the region 3) Understanding what communication is	Lecture Discourse on communication/skills practice	Communication self-evaluation form Pre-program full company questionnaire
2	Feb – 90 mins	1) Getting to know the fun side of communication and understanding it is not so difficult	Discourse on communication/skills practice	Communication self-evaluation form Interview survey
3	Mar -180 mins	1) Understanding who a “senior” is 2) Learning the basics of communication (listening)	Senior simulation Communication	Communication self-evaluation form Questionnaire
4	Apr -180 mins	1) Considering dementia among regional seniors 2) Learning communication patterns	Discourse on dementia Communication	Communication self-evaluation form
5	May -180 mins	1) Considering what can be done to prevent unattended deaths 2) Understanding communication methods	Discourse on preventing unattended deaths Communication	Communication self-evaluation form
6	Jun -180 mins	1) Considering what we can do for seniors living in the region who are not our family members	Practical training at the public hall Participation in a local gathering for the elderly	Communication self-evaluation form
7	Jul -180 mins	1) Considering care support ethics 2) Considering specific ways we can provide support	Groupwork Communication	Communication self-evaluation form
8	Aug -180 mins	1) Considering what family is 2) Understanding communication techniques for creating dialogue	What is family? Communication	Communication self-evaluation form
9	Sep -180 mins	1) Considering lives that can be saved	Fire department emergency lifesaving class	Communication self-evaluation form
	Nov	Using the communication skills learnt to become more conscious of providing care support to seniors in the region	Completion ceremony	Post-program full company questionnaire

To evaluate improvement in the meter readers’ communication skills, each session we had them self-evaluate their communication skills categorized into 12 items (five-point scale) and before and after the intervention we carried out an egogram test in the form of a questionnaire. Also, before the intervention we conducted an interview survey with the meter readers to see what kind of perception they had regarding senior support.

Results

1) Meter readers’ perception of senior support before the intervention

When interviewing the Western Sales Office meter readers about senior support, while there were some positive comments such as “I would like to try reaching out to them and have conversations,” and “I would like to help the seniors,” there were also negative comments such as “I don’t think I can get involved too deeply,” and “It sounds difficult and makes me uneasy.”

2) Communication self-evaluate

Figure 1 shows the monthly averages of the 12 items. The average for February was 3.49 but by September it had grown to 3.85. The averages of May and August were low because there was less time for practice.

Figure 2 shows the items for which there was a significant difference between the February and September scores. These included “My bearing when listening is appropriate,” “I can show agreement and understanding,” “I can repeat what I said,” “I can confirm a person’s feelings or sentiment using words.”

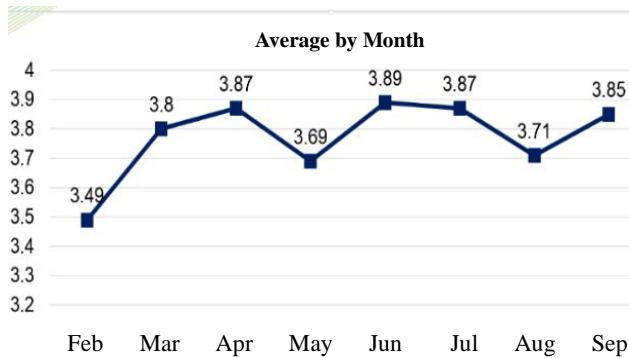


Figure 1: Trend in communication evaluations by month

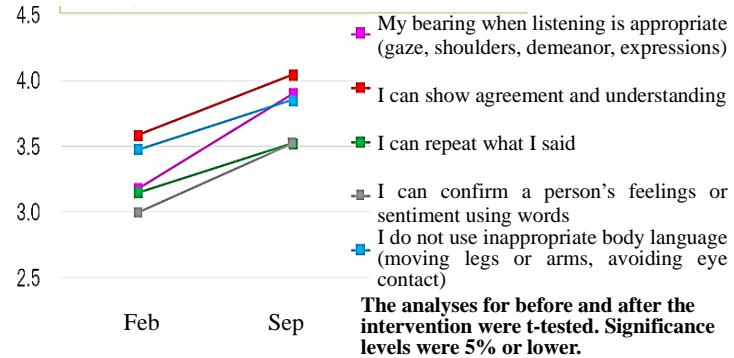


Figure 2: Items showing a significance differences between scores before and after the intervention. The analyses for before and after the intervention were t-tested. Significance levels were 5% or lower.

3) Egogram test before and after the intervention

The intervention group (20 people) was evaluated using an egogram questionnaire (TEG II) before and after the intervention. The A (Adult) item showed a tendency to increase.

Table 2: Egogram before and after educational intervention

	Before	After	n = 20 p
CP	10.3	10.4	n.s
NP	14.6	14.0	n.s
A	8.8	10.3	n.s
FC	12.8	12.7	n.s
AC	9.1	9.5	n.s

“A” shows a personality at an adult level emotionally.




Communication skills training

Developing Companywide Communication Skills Training for Saibu Gas CS

Method

After we had verified that the training given to the Western Sales Office meter readers had produced certain effects, from January to November 2018 we carried out communication skills training for all meter readers in the Kyushu region (Table 3). For this, we used text booklets titled “A Protective Network You Can Be a Part of – A Handbook for if Anything Should Happen” and a training introductory video that were created during the previous training.

Table 3: 2018 schedule

	Jan		Mar		Jun		Aug	Sep	Oct	Nov	Dec to Mar
Companywide development	Lecture		Second training session		Third training session		Fourth training session	Session 5 Local gathering for the elderly		Sixth training session	Sawara Ward Taguma School District Senior support preparation
Senior support	Local Council of Social Welfare			 Preparation/meetings							
	Meetings between Fukuoka City’s Elderly Affairs Department and Health & Welfare Center, Fukuoka City Council of Social Welfare, social workers, local councils, representatives of the gathering for the elderly, Saibu Gas CS, and Fukuoka University										

Results

In an evaluation of the text booklet by the meter readers, 97% answered that it “had the necessary information and was easy to understand,” and 70% answered that “it will be useful when encountering abnormal situations.”

The communication self-evaluation produced an initial score of 3.48 but by the final session this had risen significantly to 3.99 ($P < 0.05$).

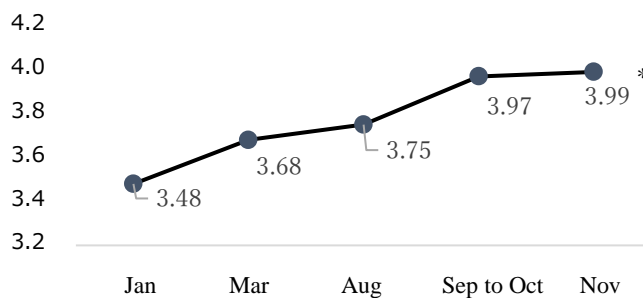


Figure 3: Communication self-evaluation score trend

The two years comprising the training for the Western Sales Office personnel and the companywide training suggest that the Education Program Aimed at Improving Communication Skills is effective.

Elderly Care Support

Method

After providing training for the Western Sales Office personnel in 2017 and implementing companywide training in 2018, from 2019 onward we started providing care support for seniors in the region. In order to provide this support, in 2018, the previous year, we began a collaboration with the Fukuoka City Council of Social Welfare and Fukuoka City and advanced preparations. After receiving cooperation from the Council of Social Welfare for Sawara Ward, Fukuoka City, we forged cooperative links with leading citizens in Sawara Ward’s Taguma School District, and relevant people in industry, academia, and government, and decided to implement the initiative in 2019.

Regional elderly care support was developed through a collaboration with **industry** through the activities of company employees, **government** through partnerships with cooperating institutions (Fukuoka City, the Fukuoka City Council of Social Welfare, and the Council of Social Welfare for Sawara Ward), and the **Region** through partnerships with citizens from Taguma School District and social workers.

The effectiveness of the program was comprehensively evaluated through questionnaires and interviews soliciting the opinions of not only the company employees, but also the local elderly, citizens, and social workers.

This research was carried out with approval from the Fukuoka University-Medical Ethics Review Board (U19-423)



Elderly care support at a local gathering for the elderly held in Taguma School District, Sawara Ward, Fukuoka City

Table 4: AY2019 research activities schedule

	Apr to Jul	Aug to Mar		
Regional partnerships	Local Council of Social Welfare Local administration council Preparation meetings Trail period Training	Participation of local gathering for the elderly →Support for solitary elderly Kick-off meeting held in September	Jan	Mar
			Held elderly support follow-up training	Post-evaluation
Partner organizations	Partnership with Fukuoka City Council of Social Welfare Partnerships with social workers, local councils, representatives of the gathering for the elderly, citizens, and meter reader representatives	Participation in February's protective network meeting		
	Partnerships with UR Meetings regarding partnerships with livelihood support advisor, etc.	Held meetings in February		

Results

(1) Survey measuring the opinions of local elderly people

In September and October 2018, during the preparation stage of the support initiative, we gave out questionnaires at 12 gatherings of elderly people with the aim of surveying the opinions of local elderly people. In their evaluation of having company employees participate in these gatherings, over 90% felt positive about having this participation in their region.

(2) Evaluation of support by company employees

We carried out a survey of company employees participating in the gathering that used a qualitative-induction research design in order to clarify their perception regarding support for local seniors. The results showed they were accumulating experience of interacting with the elderly and that as both parties built relationships of mutual trust, the company employees were becoming more motivated regarding regional elderly support. They had started becoming more interested in the region and were thinking about things like activities that can be carried out alongside work and partnerships within their company and with external organizations.

(3) Evaluation of solitary elderly in the region

We carried out semi-structured group interviews with elderly people aged 65 or over who went to the gatherings on what they thought was important regarding elderly care support provided by company employees. The results revealed a need for mutual assistance among citizens to tackle dementia and disasters together. They also revealed a need for support that encourages social participation for all elderly people through interaction between generations created when company employees become more integrated into a region and build relationships of trust.

(4) Evaluation from the Fukuoka City Council of Social Welfare

The Fukuoka City Council of Social Welfare carries out activities to increase the number of eyes watching over a region and create connections. In light of this, they greatly welcomed the participation of company employees in activities in the region. It thought that the company employees understood their corporate mission and they wanted to connect with the region in the best way possible.

Afterthoughts

Elderly people in the region are very interested in staying healthy and maintaining safe and secure lives, and they are alert to the need to tackle dementia and disasters. While they are learning appropriate ways to handle this themselves, they also want to see mutual assistance among local citizens and various organizations in the area. This initiative realizes industry-academia-government regional collaboration while making company employees more integrated into the region, and it is thought that these build relationships of trust that lead to support which encourages social participation by the elderly. It is hoped that the initiative will continue to develop going forward.



Elderly care support at a local gathering for the elderly held in Taguma, Sawara Ward, Fukuoka City

**Team 3: Social Participation Support and Active Senior Citizenship
(mid-life and senior years)**

**3-3: Researching the Effects of Chinese Herbal Medicines
as Preventatives Against Mental/Psychological Frailty Symptoms**

Objective

Mental/psychological frailty is a condition in which an individual's physical and mental functions decline as they age, leading to the impairment of vital functions and the weakening of mind and body. However, there are also signs that with appropriate intervention and support, it is possible to reverse the impairments to vital functions. In other words, if appropriate intervention and support is not provided, the condition will advance into dementia and nursing care will become necessary. This team is focused on exploring the issue of dementia, using mice to conduct basic research on appropriate intervention and support.

It has been reported that light exercise contributes to the improvement of mental functions and research using mice suggests that factors secreted by muscles during exercise have an impact on brain functions. Also, the Chinese herbal medicines hachimi-jio-gan and gosha-jinki-gan, which has hachimi-jio-gan as a main constituent, are thought to have an influence on muscle mass. Based on this, we think that combining hachimi-jio-gan and gosha-jinki-gan intake with light exercise will have a synergistic effect that enhances the secretion of factors by the muscles, contributing to improvements in mental/psychological frailty symptoms. Therefore, we let mice who had been given hachimi-jio-gan exercise freely and conducted a behavioral analysis of their cognitive and mental activity and a biochemical analysis of molecule expression related to brain functions (Study 1). We then used senescence-accelerated mice to analyze behavioral changes that resembled mental/psychological frailty symptoms, and studied the effects of combining Chinese herbal medicine (hachimi-jio-gan and gosha-jinki-gan) intake and light exercise (Study 2).

Method

(Study 1)

Animals used: Six-week-old male ICR mice (CLEA Japan, Inc.) with each cage containing three or four mice. In regard to the amount of exercise, a running wheel was installed in the cage and the mice could run freely. They were given a 1,000 mg/kg dose of hachimi-jio-gan (HJG) each day mixed into their water bottle. The mice were divided into the following four groups. 1) Water + sedentary, 2) HJG + sedentary, 3) water + exercise, and 4) HJG + exercise. After three weeks of HJG and free exercise, we conducted a behavioral analysis.

Behavioral analysis: We carried out a three-chamber test to analyze social curiosity and social cognitive functions. We created a device divided into three chambers and put cages in the chambers on opposite sides of the device, in which an intruder mouse could be placed. In order to analyze social curiosity, we placed

intruder mouse A in the cage on just one side and left the cage on the other side empty. We then measured the amount of time the test subject mice spent in the chamber where intruder mouse A was. Next, we placed intruder mouse B in the empty cage and measured the amount of time the test subject mice spent in the chamber with intruder mouse B to evaluate social cognitive functions. We also used an elevated plus maze to analyze symptoms of anxiety. The maze comprised of open arms that did not have walls and closed arms with walls. We measured the amount of time the test subject mice spent in the closed arms.

Biochemical analysis: Following the behavioral analysis, we harvested the mice's hippocampi and analyzed the amount of molecule expression using the western blot method.

(Study 2)

We mixed Chinese herbal medicine (hachimi-jio-gan and gosha-jinki-gan: 1,000 mg/kg/day) into the water bottles of senescence-accelerated mice (SAMP8 mice). The mice took the Chinese herbal medicine from the age of three months and we carried out behavioral analysis when they were five months old. Following this, we installed a running wheel in their cage and allowed the mice to exercise freely. Two weeks after the installation of the running wheel (when the mice were seven months old) we carried out another behavioral analysis.

We used a three-chamber test to analyze social interaction and social recognition. We also conducted nest building and sucrose splash tests to study symptoms of lethargy. We also used an elevated plus maze and an open-field device to analyze the amount of spontaneous activity and anxiety behavior.

Results

(Study 1)

Evaluation of social curiosity and social cognitive functions in the three-chamber test: In the study evaluating social curiosity, there was no significant difference in the amount of time each of the four groups spent in the chamber with intruder mouse A. However, compared to the water + sedentary group, there was a tendency for mice from the water + exercise group to spend an increased amount of time in the chamber. In the study evaluating social cognitive functions, there was no significant difference in the amount of time each of the four groups spent in the chamber with intruder mouse B, which was a stranger.

Evaluation of anxiety behavior using an elevated plus maze: There was no significant difference in the amount of time each of the four groups spent in the closed arms.

Analysis of the expression of brain-derived neurotrophic factors and the transcriptional coactivator PGC1 α : Regarding the expression of mature brain-derived neurotrophic factors (BDNF), compared to the water + sedentary and HJG + sedentary groups, the water + exercise group saw a significant increase. However, this significant increase was not found in the HJG + exercise group (Figure 1A). Regarding the expression of PGC1 α , which induces the expression of BDNF, while there was a significant increase in the water + exercise group, just like with the mature BDNF, there was also an increase found in the HJG + exercise group (Figure 1B).

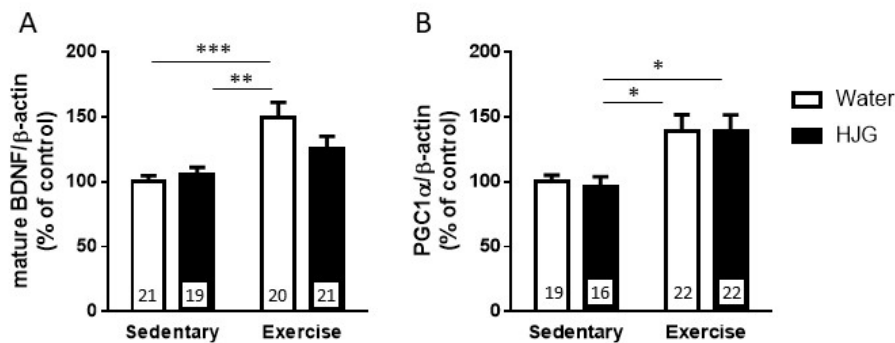


Figure 1: Amount of expression of mature BDNF (A) and PGC1α (B) in the mice's hippocampi

* P<0.05, ** P<0.01, *** P<0.001, 2 way ANOVA followed by Tukey's test

(Study 2)

Effects of the combination of hachimi-jio-gan intake and light exercise (seven-month-old mice)

The nest building test showed that the SAMP8 mice's nest building behavior had declined, suggesting symptoms of lethargy. However, the combination did not seem to have an effect on this behavioral change. Furthermore, the sucrose splash test revealed a trend of decline in grooming behavior among the SAMP8 mice and only mice that received hachimi-jio-gan and undertook exercise showed improvements.

In the open-field test, there was no difference in the amount of activity between all of the groups, but in the elevated plus maze test, the SAMP8 mice tended to enter the closed arms more often. However, the combination did not seem to have an effect on this increased number. Also, in the open-field test, the SAMP8 mice tended to spend a shorter amount of time in the center zone, while this tendency improved in the mice that underwent the combination, suggesting a positive effect against symptoms of anxiety. Furthermore, in the elevated plus maze test, the SAMP8 mice did not spend any longer in the closed arms and did not show symptoms of anxiety, but the mice that underwent light exercise spent a shorter amount of time in the closed arms.

In the three-chamber test, there were no differences observed between all groups in regard to social interaction and social recognition.

Effects of gosha-jinki-gan intake (five-month-old mice)

In the nest building test, the SAMP8 mice's nest building behavior was observed to have declined, suggesting symptoms of lethargy. However, gosha-jinki-gan did not seem to have an effect on this behavioral change. The sucrose splash test showed a decline in grooming behavior among the SAMP8 mice and gosha-jinki-gan did not seem to have an effect on this behavioral change.

The SAMP8 mice showed increased activity in the open-field test and entered the closed arm an increased number of times in the elevated plus maze test, suggesting diversity. However, gosha-jinki-gan did not seem to have an effect on these behavioral changes. The SAMP8 mice spent a shorter amount of time in the closed

arms of the elevated plus maze test and were observed to have diminished symptoms of anxiety, but this change was not a result of gosha-jinki-gan. Also, in the open-field test, there were no differences observed in the amount of time each of the groups spent in the center zone.

Afterthoughts

(Study 1)

The combination of hachimi-jio-gan intake and light exercise did not improve the social cognitive functions of the mice. We think that no effects were detected because this research used healthy mice that were only a few weeks old.

The biochemical study confirmed that exercise produced an increase in mature BDNF and PGC1 α . However, although an increase in PGC1 α was observed in the HJG + exercise group, no significant increase in the expression of mature BDNF was observed. This suggests that hachimi-jio-gan has an effect on molecules from PGC1 α onward in the BDNF expression cascade.

(Study 2)

Effects of the combination of hachimi-jio-gan intake and light exercise (seven-month-old mice)

In regard to the lethargic behavior in the sucrose splash test, although no synergistic, enhancing effects of the combination were observed, hachimi-jio-gan intake and light exercise tended to produce improvements respectively. On the other hand, only the combination tended to produce improvements against the symptoms of anxiety observed in the open-field test. These results suggest that depending on the symptoms, the combination can be effective, and we think that combining hachimi-jio-gan intake and light exercise has a synergistic, enhancing effect. As the study concerned seven-month-old mice, it is possible that in cases where symptoms are more advanced due to aging, the combination may have an effect on other symptoms.

Effects of gosha-jinki-gan intake (five-month-old mice)

We think it is possible that there were no effects observed due to the shortness of the gosha-jinki-gan intake period. Currently, the mice used in this study are undertaking light exercise.

Conclusion

Exercise by being allowed to run freely induced the expression of PGC1 α and mature BDNF. SAMP8 mice showed lethargic behavior reflecting mental/psychological frailty. Hachimi-jio-gan intake and light exercise respectively tended to produce improvements in this behavior. From these results, we think it is possible that each of hachimi-jio-gan intake and light exercise alone may be effective against mental/psychological frailty symptoms. As the number of cases in this research was small, further analysis is required going forward.

Exhibiting a Booth at a Conference

We exhibited a booth at the 34th Congress of the Medical and Pharmaceutical Society for WAKAN-YAKU, which was held at Fukuoka International Congress Center on August 26 (Sat.) and 27 (Sun.) 2017. We introduced the content of the research and the Fukusou Project through a panel display, distributing leaflets, and showing a video of our experiments on animals.



Exhibition booth (34th Congress of the Medical and Pharmaceutical Society for WAKAN-YAKU)

Research Publication

Theses

- 1) 泉原嘉郎, 乾真寛, Jürgen Krug: 日本の小学校低・中学年における子どもたちのコーディネーション能力～福岡市と遠賀郡の比較を中心として～. 福岡大学教職課程センター紀要 創刊号: 65-79, 2017.
- 2) Sagayama H, Shizuma K, Toguchi M, Mizuhara H, Machida Y, Yamada Y, Ebine N, Higaki Y, Tanaka H: Effect of the Health Tourism weight loss programme on body composition and health outcomes in healthy and excess-weight adults. *Br J Nutr* 119(10): 1133-1141, 2018.
- 3) 下山寛之, 渡口慎子, 安方惇, 山崎郁美, 嶋田康平, 廣田貴也, 山田陽介, 海老根直之, 布目寛幸, 清永明, 檜垣靖樹, 田中宏暁: 短期間減量プログラムにおける運動介入と高たんぱく質に設定した低炭水化物食または高炭水化物食による食事制限が身体組成に与える影響. *日本スポーツ栄養研究誌* 11: 16-24, 2018.
- 4) Takae R, Hatamoto Y, Yasukata J, Kose Y, Komiyama T, Ikenaga M, Yoshimura E, Yamada Y, Ebine N, Higaki Y, Tanaka H: Physical activity and/or high protein intake maintains fat-free mass in older people with mild disability: the Fukuoka Island City Study: A cross-sectional study. *Nutrients* 11(11): E2596, 2019.
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- 6) 馬場みちえ, 石橋曜子, 吉川千鶴子, 宗正みゆき, 上野珠未, 牧香里, 大城知子, 宮林郁子: 産学官連携による地域高齢者ケアサポートのためのコミュニケーションスキル育成プログラムの開発・評価. *福岡大学医学紀要* 47(1): 11-20, 2020.

Conference Presentations

- 1) 高江理恵, 畑本陽一, 古瀬裕次郎, 小見山高明, 安方惇, 上原吉就, 檜垣靖樹, 田中宏暁: 高齢者のスロージョギングによる運動介入が身体活動量に及ぼす影響～福岡アイランドシティ Study～. 第72回日本体力医学会大会. 2017年9月.
- 2) 石橋曜子, 上野珠未, 馬場みちえ, 吉川千鶴子, 宗正みゆき, 大城知子, 宮林郁子: 地域企業による地域高齢者ケアサポート活動に向けた認識と自己効力感(第1報). 第37回日本看護科学学会. 2017年12月.
- 3) 上野珠未, 馬場みちえ, 石橋曜子, 吉川千鶴子, 宗正みゆき, 大城知子, 宮林郁子: 地域企業による地域高齢者ケアサポート活動に向けた認識と性格傾向(第2報). 第37回日本看護科学学会. 2017年12月.
- 4) 馬場みちえ, 宮林郁子, 吉川千鶴子, 宗正みゆき, 大城知子, 石橋曜子, 上野珠未: 地域

- 包括ケアシステムに向けた産学官連携による地域高齢者ケアサポートの開発. 第 37 回日本看護科学学会. 2017 年 12 月.
- 5) 山本泰暉, 高江理恵, 畑本陽一, 古瀬裕次郎, 安方惇, 上原吉就, 檜垣靖樹, 田中宏暁: 2 泊 3 日のヘルスツーリズムが身体活動量と肥満指標に与える影響. 第 26 回西日本肥満研究会. 2018 年 7 月. 若手研究奨励賞 (YIA) 受賞.
 - 6) 高江理恵, 畑本陽一, 古瀬裕次郎, 安方惇, 檜垣靖樹, 田中宏暁: 高齢者における身体組成への変化にはたんぱく質摂取量と身体活動量が影響する. 第 26 回西日本肥満研究会. 2018 年 7 月.
 - 7) 牧香里, 馬場みちえ, 吉川千鶴子, 宗正みゆき, 石橋曜子, 大城知子, 上野珠未, 宮林郁子: 産学官連携による高齢者社会参加促進のための広域的サポート事業の開発—地域の高齢者を見守るための事業所に向けた教育教材の作成—. 第 44 回日本看護研究学会. 2018 年 8 月.
 - 8) 高江理恵, 畑本陽一, 山本泰暉, 田上友季也, 下山寛之, 山田陽介, 海老根直之, 檜垣靖樹, 田中宏暁: 運動と食事による短期的な減量介入がアスリートの身体組成とランニングパフォーマンスに及ぼす影響. 第 73 回日本体力医学会大会. 2018 年 9 月.
 - 9) 皿田洋子: 「生きる力」が育つ学校文化を創る取組み—Social skills training—. SST 普及協会 第 23 回学術集会 in 札幌. 2018 年 11 月.
 - 10) 馬場みちえ, 宮林郁子, 吉川千鶴子, 宗正みゆき, 石橋曜子, 牧香里: 地域包括ケアシステムをめざした産学官連携による地域高齢者ケアサポートの展開 (第 2 期). 第 38 回日本看護科学学会. 2018 年 12 月.
 - 11) Ishibashi Y, Miyabayashi I, Baba M, Yoshikawa C, Munemasa M, Maki K: The Effects of a “Communication Skills Improvement Program” for the care Activities for Older Adults Community Meter Readers of Private Companies. Sigma Theta Tau International Honor Society of Nursing (STTI). 2019. 2.
 - 12) Miyabayashi I, Ishibashi Y, Baba M, Yoshikawa C, Munemasa M, Maki K: Development of an Educational Program to Provide Multi-layered Organic Support for the Elderly in Japan’s Community-based Integrated Care System. Sigma Theta Tau International Honor Society of Nursing (STTI). 2019. 2.
 - 13) 子どもの緊急時における保育所等保育士・看護師の対応の現状. 第 25 回日本保育保健学会. 2019 年 5 月.
 - 14) 保育所等の保育士・看護師に対する緊急時の対応技術習得のための段階的研修の効果. 第 66 回日本小児保健協会学術集会. 2019 年 6 月.
 - 15) 皿田洋子, 本徳勇氣: 教育現場での SST—幼児教育～小・中学校—. SST 普及協会第 25 回 SST 全国経験交流ワークショップ in 徳島. 2019 年 7 月.
 - 16) 高江理恵, 畑本陽一, 古瀬裕次郎, 安方惇, 檜垣靖樹, 田中宏暁: 高齢者における除脂肪量と身体活動量およびタンパク質摂取量との関連～福岡アイランドシティ研究～. 第 27 回西日本肥満研究会. 2019 年 7 月.

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- 1 8) 「子どもといる生活支援」として大学の施設を活用し地域に開かれた体験型両親・祖父母学級の実践報告. 第 60 回日本母性衛生学会学術集会. 2019 年 10 月.
- 1 9) 地域と大学の連携・協働による「初産婦夫婦への妊娠期からの子育て支援」実践報告. 第 60 回日本母性衛生学会学術集会. 2019 年 10 月.
- 2 0) 檜垣靖樹: 持続可能な社会に向けて未来を見据えたスロージョギング®健康法. 第 7 回日本介護予防・健康づくり学会. 2019 年 11 月.
- 2 1) 高江理恵, 畑本陽一, 古瀬裕次郎, 安方惇, 小見山高明, 池永昌弘, 吉村英一, 山田陽介, 海老根直之, 檜垣靖樹, 田中宏暁: 高齢者の除脂肪割合とタンパク食品の関連性. 第 7 回日本介護予防・健康づくり学会. 2019 年 11 月.
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- 2 3) 馬場みちえ, 石橋曜子, 吉川千鶴子, 宗正みゆき, 牧香里, 上野珠未, 隈本寛子: 産学官民連携からみた企業社員による地域高齢者ケアサポートシステムの構築 (第 3 期). 第 39 回日本看護科学学会交流集会. 2019 年 12 月.
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- 2 5) 吉川千鶴子, 上野珠未, 馬場みちえ, 石橋曜子, 宗正みゆき, 牧香里, 隈本寛子, 宮林郁子: 産学官連携による企業社員による地域高齢者ケアサポートへのプログラム構築—第 1 報 検針員へのコミュニケーション向上スキル教育研修の評価. 日本健康支援学会. 2020 年 3 月.
- 2 6) 上野珠未, 吉川千鶴子, 馬場みちえ, 石橋曜子, 宗正みゆき, 牧香里, 隈本寛子, 宮林郁子: 産学官連携による企業社員による地域高齢者ケアサポートへのプログラム構築—第 2 報 企業社員へのプログラム開発のための基礎的研究. 日本健康支援学会. 2020 年 3 月.
- 2 7) 宗正みゆき, 隈本寛子, 石橋曜子, 牧香里, 吉川千鶴子, 上野珠未, 馬場みちえ, 宮林郁子: 産学官連携による企業社員による地域高齢者ケアサポートへのプログラム構築—第 3 報 企業社員のふれあいサロンへの参加に対する地域高齢者の認識. 日本健康支援学会. 2020 年 3 月.
- 2 8) 石橋曜子, 上野珠未, 牧香里, 宮林郁子, 馬場みちえ, 宗正みゆき, 吉川千鶴子, 隈本寛子: 産学官連携による企業社員に対する地域高齢者ケアサポートのプログラム構築—第 4 報 ふれあいサロンに参加する企業社員の地域高齢者ケアサポートに対する認識. 日本健康支援学会. 2020 年 3 月.

Symposiums and Lectures

- 1) Miyabayashi I, Ishibashi Y, Baba M, Yoshikawa C, Munemasa M, Maki K: Challenge for Social Contribution towards Regional Elderly. Fukusou project international symposium. 2018.12.
- 2) 馬場みちえ, 宮林郁子, 吉川千鶴子, 宗正みゆき, 牧香里, 石橋曜子: 企業による新しい地域社会への社会貢献創出. 福岡大学新春産学官技術交流会 2019. 2019年1月.

Other

- 1) 泉原嘉郎: 指導者なら知っておきたいコーディネーショントレーニングのこと. 福岡市教育委員会体力向上推進委員会リーフレット (元気ッズ体力アップに向けて) 2017.
- 2) 福岡市教育委員会&泉原嘉郎: 体力向上マニュアル 2018.
- 3) 福岡市教育委員会&泉原嘉郎: 体育授業で使えるコーディネーショントレーニング DVD 2018.
- 4) イノベーションジャパン(東京)展示
「企業がおこなう地域への新たな社会貢献の創出」パンフレット 2018年8月.
- 5) ガスエネルギー新聞掲載 「検針員が高齢者見守りー福岡大のプログラム活用 西部ガス・カスタマーサービス」2019年1月21日号.