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ORIGINAL ARTICLE

Exploring College Students' Subjective Health Perceptions According to Physical Activity Level

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PURPOSE: This study provides fundamental data required to promote the physical and mental health of college students by exploring their subjective health perception relative to physical activity level.

METHODS: Individual, in-depth interviews were conducted in 2023 to assess the subjective health perception of eight collegiate students relative to their physical activity levels.

RESULTS: The findings indicated that university students do not adhere to physical activity guidelines, with variations in preferences and motivations for engaging in different types of physical activities. Muscle-strengthening exercises were performed most often, reflecting a specific focus on building strength and muscle mass. Although most participants considered themselves healthy, contrasting perceptions existed regarding factors such as alcohol consumption and smoking. The participants actively engaged in diverse physical activities, thereby expressing a positive perception of the value of exercise. Furthermore, the participants demonstrated a proactive approach to health management by avoiding unhealthy foods and incorporating health supplements, exhibiting a deep understanding and commitment to maintaining their well-being. Almost all participants reported overall improvement in stamina from intense physical activities. However, perspectives on the health-enhancing effects of moderate physical activity varied, with some participants expressing uncertainty and others considering it to be the most suitable exercise for their health conditions. Approximately 50% of the participants emphasized the health benefits of strength training, citing its positive effects on muscle strength and increased self-confidence through an improved external image.

CONCLUSIONS: This study explored the subjective health perceptions related to physical activity among eight university students, revealing a preference for strength training, generally positive health perceptions, and proactive health management strategies. These findings emphasize the need for personalized exercise programs based on individual health conditions.

Key words: External image, Health management strategies, Individualized exercise programs, Muscle-strengthening exercises, Self-confidence

INTRODUCTION

At the threshold of their social entry and position as pivotal contributors for shaping future society, university students' health profoundly impacts their social development. However, while they forge new social relationships and cultivate autonomous lifestyles, they are increasingly exposed to environments that may pose health risks, potentially leading to adverse health effects. According to previous research findings, university students tend to engage in detrimental health behaviors such as excessive alcohol consumption, smoking, irregular eating habits, and disrupted sleep patterns, than health-promoting behaviors [1]. In addition, Kim et al. [2] compared the mental health of middle school, high school, and university students. This study revealed that university students exhibited the least positive factors, such as self-efficacy and life satisfaction, and the most negative factors, particularly depression. The physical and mental health status of university students is significantly concerning, emphasizing the urgent need to explore measures for encouraging a healthy lifestyle.

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In particular, physical activity has been reported to have positive effects on both physical (health status, health satisfaction) and mental aspects (life satisfaction and cognition) [3]. In a study by Song and Shin [4], providing physical activity-based programs to university students reduced negative factors related to mental health (obsessive-compulsive disorder, depression, hostility, and fear/anxiety levels). Despite these positive findings, the International Physical Activity Survey Team reports 9% of the mortality rate in Korean adults is attributed to insufficient physical activity. Additionally, the average daily sedentary time was reported as high as 7.8 hours [5]. In addition, according to the 2022 National Sports Survey conducted by the Ministry of Culture, Sports and Tourism, the participation rate of individuals in their 20s who engaged in regular physical activity for at least 30 minutes once a week decreased by 1.5% from 2021 (63.6%) to 2020 (62.1%) [6]. In spite of this decline in physical activity among university students, the importance of physical activity is emphasized as it positively affects physical and mental health simultaneously.

Subjective health perception is garnering attention in health research [7], as it allows for a reflection of objective health conditions, holding significant meaning in understanding overall health status [8]. According to Cho and Kim [9], physical activity has a positive influence on subjective health perception. Similarly, Hwang and Kim [10] indicated that individuals who engage in more physical activity tend to report a better subjective health status. These findings suggest a significant positive association between physical activity and subjective health. Furthermore, delving into the correlation between subjective health and physical activity, which is positively related to health, can provide valuable insights for university students in leading a healthy life.

Over the past three years, research on clarifying subjective health perception based on physical activity has been limited to adolescents [10], middle-aged individuals [11], and older adults [12]. Despite the numerous related studies, research exclusively focusing on university students is insufficient. Additionally, most studies examining the relationship between these two factors have been predominantly quantitative.

The current health status of university students is particularly concerning, establishing a need for prioritizing research that explores subjective health perceptions based on well-established and multifaceted positive effects of physical activity. Despite this urgency, research has predominantly focused on adolescents, middle-aged individuals, and older adults, with most studies being quantitative in nature. Therefore, this study qualitatively explores the subjective health perceptions based on physical activity among university students to provide foundational data that can contribute to enhancing physical and mental health among university students.

METHODS

1. Participants

Participants were selected using purposive non-probability sampling methods. Eight university students currently enrolled at Gachon University in Gyeonggi Province, who voluntarily expressed their consent to participate in the research, were chosen. The general characteristics of the participants are summarized in Table 1.

2. Data collection

Data were collected through in-depth interviews, a concentrated method in grounded theory. In-depth interviews allow researchers to explore participants' subjective perspectives on specific experiences in an open and in-depth manner [13]. A panel of five experts, consisting of professors and doctoral candidates specializing in sports science, was formed to construct the interview questionnaire. During the first round of discussions, the expert panel reviewed literature that aligned with the

Table 1. Characteristics of participants

Participant	Gender	Age	Following all KYPAQ	Following vigorous PA	Following moderate PA	Following muscle strengthening exercises
Participant 1	Male	20		Sufficient		Sufficient
Participant 2	Male	20		Implemented, but insufficient		Sufficient
Participant 3	Male	20		Implemented, but insufficient		Sufficient
Participant 4	Male	20	Implemented, but insufficient	Sufficient	Implemented, but insufficient	Implemented, but insufficient
Participant 5	Male	20		Implemented, but insufficient		Sufficient
Participant 6	Male	20		Implemented, but insufficient		Sufficient
Participant 7	Female	20		Sufficient		Sufficient
Participant 8	Female	22		Sufficient		Implemented, but insufficient

KYPAQ, Korean Youth Physical Activity Questionnaire; PA, physical activity.

research objectives and established the direction for the questionnaire guidelines. In the second round, the panel refined the questionnaire to align with the study's qualitative nature based on survey data from the referenced literature. In the final round, the panel further refined and confirmed the questionnaire, ensuring its suitability for achieving the research objectives. The interviewer focused on crafting detailed and flexible questions, allowing for a nuanced exploration of participants' perspectives on the research topic [13]. Efforts were made to ensure the constructed questionnaire aligned with the research theme and objectives, promoting a detailed and flexible framework.

The in-depth interviews began with open-ended questions to acquire basic information and progressed to mid-stage questions based on the participant's narrative [13]. Following the participant's story, subsequent questions were tailored accordingly. The interviews were conducted in a flexible semi-structured format by not presenting a predetermined set of questions to facilitate immediate selection and provision of follow-up questions [14]. All content discussed during the interviews was comprehensively documented using smartphone recordings, and each interview session lasted approximately 1 hour per participant. Additionally, specific questions and directions for the two primary focuses of this study, namely physical activity and subjective health, were set as follows.

1) Physical activity

The physical activity questionnaire was adapted from the Korean Youth Physical Activity Questionnaire (KYPAQ) developed by Hong et al. [15] to align with the characteristics of this study. While the International Physical Activity Questionnaire (IPAQ) is commonly used for measuring physical activity levels in adults [16], it covers a wide age range (16-69). Therefore, considering the ages of the participants in this study, the KYPAQ was deemed more suitable as it is designed specifically for Korean youth. Additionally, as the Youth Basic Act Article 3 defines "youth" as individuals aged 9 to 24 [17], all participants fall within this range, reinforcing the appropriateness of using KYPAQ.

This questionnaire categorizes physical activity levels into three types: vigorous-intensity physical activity, moderate-intensity physical activity, and muscle-strengthening exercises. It consists of three questions regarding the number of days participants engaged in vigorous-intensity physical activity for at least 20 minutes, moderate-intensity physical activity for at least 30 minutes, and muscle-strengthening exercises within the previous week. Following the guidelines of the Ministry of Health and Welfare [18], participants were classified into the "Meeting the Guidelines Group" if they engaged in vigorous-intensity physical activity (high-intensity activity) and muscle-strengthening exercises for at least two days a week and moderate-intensity physical activity every day. Participants who did not meet these criteria were classified into the "Not Meeting the Guidelines Group."

2) Subjective health perceptions

The subjective health questionnaire was constructed based on items commonly utilized in previous studies targeting university students [19-21], and tailored to the specific objectives of this study. The questionnaire asks participants to rate their usual health status on a scale of 'Very Healthy,' 'Healthy,' 'Average,' 'Unhealthy,' or 'Very Unhealthy.' Additionally, to obtain more in-depth insights, additional questions were formulated to explore internal and external factors influencing subjective health. Participants were asked about factors influencing their subjective health, reasons behind their perceptions, efforts they make for health promotion, and how their subjective health perception varies by physical activity type. These inquiries comprehensively explore subjective health from various perspectives.

3) Data analysis

First, all content interviews were meticulously transcribed and organized into text files. The documented content was reviewed and verified three times to ensure accuracy and prevent errors. Through "coding," the initial step in qualitative analysis, recurring vocabulary, themes, and scenes in the data were assigned specific codes to systematize the information [22]. Lastly, through detailed reading, analysis, and inference of the coded content, the researcher generated new concepts, categories, or meanings that comprehensively encompassed the overall data [23]. Following a systematic four-step process of data-coding-categorization-conceptualization, the grounded theory researcher derived research outcomes.

4) Ethical considerations and truthfulness of the research

The research purpose, rationale, and overall details were thoroughly explained to the participants before the interviews. After ensuring the participants had a comprehensive understanding, the interviews were conducted with their consent. The interviews were recorded, and the participants were assured that the content would only be used for this study and would not be utilized for any other purpose. Additionally, participants were informed about anonymizing their information for privacy protection, and a commitment was made not to disclose any

personal information under any circumstances. In addition, a researcher triangulation method was employed to enhance the truthfulness of the research. Denzin's [24] researcher triangulation requires the participation of multiple researchers in the study to eliminate potential biases from a single researcher and ensure research credibility. In line with this, a group of experts conducted the interpretation and meaning-making of the content during the data analysis process. Only the content agreed upon by all five experts through iterative discussions and consensus-building was finalized as the ultimate result.

RESULTS

As a result of the in-depth interviews, three major categories (Weight and Perception of Types of Physical Activity, Perception of Subjective Health and Health Management Strategies, Subjective Health Perception by Physical Activity Type), five sub-categories, and three lower-level categories were identified.

1. Weight and perception of physical activity types

None of the participants met the guidelines set by the Ministry of Health and Welfare [18] for all three types of physical activity (vigorous-intensity physical activity, moderate-intensity physical activity, muscle-strengthening exercises), highlighting the severity of physical inactivity among university students. Participants prioritized muscle-strengthening exercises among the three physical activity type, with 6 out of 8 participants meeting the guidelines, making it the top-ranking activity. Vigorous-intensity physical activity, which 4 out of 8 participants met, was ranked second. However, none of the participants met the guidelines for moderate-intensity physical activity, placing it third. There were individual differences in the perceived importance of each physical activity type, and participants tended to engage in activities they personally preferred.

"*In the past, I was extremely thin. So, with the desire to bulk up, I exercised and ate diligently, and my body has certainly grown larger.*" *(Participant 1)*

"I focus on strength training because I want my body to grow larger." (Participant 3)

"I play soccer as a hobby because intense physical activity makes me breathe heavily, and I believe it improves lung capacity." (Participant 4)

"I engage in exercises until I am significantly out of breath, not just lightly. Therefore, it's safe to say there is almost no moderate-intensity physical activity in my routine." (Participant 1)

2. Subjective health perception and health management strategies

1) Subjective health perceptions and discrepancies

While most participants perceived themselves as healthy, differences emerged regarding factors that could negatively impact health, such as alcohol consumption and smoking. On the other hand, some participants attributed their less favorable health perceptions to genetic influences.

"I consider myself quite healthy, and one of the main reasons for that is the fact that most of my friends smoke, but I never did. I've consistently refrained from smoking, and I believe that has made a significant difference." (Participant 5)

"*I believe I am in excellent health. Despite engaging in alcohol consumption and smoking, I haven't noticed any health issues, and my overall condition has been good.*" *(Participant 2)*

"*I subjectively perceive myself as very healthy. In reality, I abstain from both alcohol and smoking entirely.*" *(Participant 3)*

"I perceive my health as not good. There are congenital issues in my family, such as asthma and innate weaknesses in the digestive and respiratory systems, which contribute to my negative health perception." *(Participant 1)*

2) Health management strategies

(1) Engagement in physical leisure activities

Many participants actively pursued various physical activities as their preferred leisure pursuits, citing diverse reasons for their engagement. While the specific physical activity type varied among participants, a common thread was the positive perception regarding the value of physical activity. All participants expressed a positive feeling of vitality and willingly engaged in physical activities, indicating a voluntary commitment to such practices.

"Incorporating strength training exercises not only makes me feel less fatigued in my daily life but also leaves me with a refreshing sensation the

next day." (Participant 6)

"I feel a bit sluggish if I don't move, especially compared to the past. When I have free time and nothing else to do, I prefer to exercise. It helps with ventilation, and staying at home all the time makes me feel lethargic and depressed. Exercising seems like a way to find energy and vitality." (Participant 7)

"I enjoy going out alone, taking walks, meeting friends, and engaging in activities like badminton in the park. When I get bored, I explore different sports and try to learn new exercises. I just love being active." (Participant 8)

(2) Dietary management and consumption of health supplements

Participants demonstrated an active approach to health management by avoiding convenient and fast foods in favor of a more health-conscious diet. Additionally, they consumed various health supplements as part of their efforts to maintain good health.

"I tend to avoid selective eating and opt for cooked meals rather than consuming instant foods." (Participant 5)

"I try to avoid fast food and overly stimulating dishes." (Participant 3)

"For the sake of my health, I regularly incorporate basic vitamins and other health supplements into my diet." (Participant 1)

"I'm conscious of my health, so I make an effort to include various health supplements in my routine." (Participant 2)

(3) Aversion to smoking

Participants were definitely aware of the negative impacts of smoking on health and demonstrated a reluctance to smoke due to concerns about its adverse effects on their well-being. This observation highlights the participants' deep understanding and commitment to health management, as they actively avoid behaviors that could compromise their health.

"Many of my friends smoke, but I choose not to smoke because I believe it would be detrimental to my health." (Participant 4)

"I refrain from smoking not only for my health but also as part of maintaining my physical fitness." (Participant 5)

3. Subjective health perception by physical activity type

1) Subjective health perception following intense physical activity

Almost all participants reported positive effects such as an overall improvement in stamina, when engaging in intense physical activities. Some participants noted that the positive effects became more pronounced with repeated engagement.

"Intense physical activity has the most positive impact on health, in my opinion. When I engage in intense running, my breath quickens, and I feel an energetic boost. Over time, I've noticed a significant improvement in my stamina. Initially, I used to tire quickly during matches, but as I continued, my fitness gradually improved, making a substantial impact." (Participant 2)

"Intense physical activity, with its significant sweating, aids toxin elimination, and undoubtedly enhances cardiovascular endurance. It also improves lung capacity, especially when engaging in activities like soccer as a hobby. I believe that intense physical activity has a considerable positive impact on health. Just as there is a saying that studying requires physical fitness, I think good health is essential for various aspects of life." (Participant 3)

"Intense physical activity, due to increased breathlessness, seems to improve lung capacity. Personally, I play soccer as a hobby, and I anticipate that my lung capacity will significantly improve as a result. Intense physical activity seems to have a substantial positive impact on health. As they say, maintaining good physical fitness is crucial, not just for sports but also for overall well-being." (Participant 4)

"I believe intense physical activity has the most significant positive effect on health. While I may not feel a notable improvement in energy after other forms of exercise, I can distinctly sense the positive changes following intense activity." (Participant 5)

"Intense physical activity, in essence, has the most significant positive effect on health. It contributes more to enhancing stamina than staying inactive. Being active has a more profound impact on health than merely combating lethargy." (Participant 6)

2) Subjective health perception following moderate physical activity

Opinions regarding the health-enhancing effects of moderate physical

activity varied among participants. Some participants were unsure whether moderate physical activity significantly impacted health, while others considered it the most suitable exercise for their health conditions.

"I'm not sure about the specific effects of moderate physical activity." (Participant 3)

"While moderate physical activity does have an impact on health, I don't think it's as significant as engaging in more intense activities that challenge the body. I believe that strenuous exercises, like intense physical activity, would lead to better overall fitness." (Participant 4)

"I have ankle issues. I've been getting injured since the fifth grade, and that has continued... (omitted) Moderate physical activity, at a reasonable intensity level, seems to pose less risk of injury and has the most positive impact on my health in the long run, both at present and in the future." (Participant 7)

3) Subjective health perception following strength training

Nearly half of the participants emphasized strength training as an excellent means for health promotion, with a focus on building muscle strength and rehabilitation. Additionally, one participant mentioned that strength training has positive effects on physical health and emotional well-being. Specifically, the participants pointed out that strength training not only contributes to their internal health enhancement but also increased self-confidence by improving their external image.

"I think strength training has the most positive impact on health. Not only does it contribute to internal health, but the improvement in external appearance also leads to enhanced self-confidence." (Participant 3)

"Strength training seems to be geared towards improving the body externally. Having muscles provides a firm body that can withstand impact better, potentially reducing the risk of injuries." (Participant 4)

"I believe strength training has the most beneficial impact on health. I had a slight issue with my disc, but with consistent effort, it naturally improved. Whether it's due to mood or not, I also felt a slight enhancement in my immune system." (Participant 6)

"I think strength training is the best for my body. Since my knees are not in good condition, I focus on stability-oriented exercises with a slight emphasis on strength. Rather than intense strength training, I prioritize maintaining balance and stability." (Participant 7)

DISCUSSION

This study interviewed eight university students to explore subjective health perceptions related to physical activity. The interview results were categorized into three main themes: Significance and Perception of Physical Activity Type, Subjective Health Perception and Health Management Strategies, and Subjective Health Perception by Physical Activity Type.

First, when examining the weight and perception of physical activity type, the proportion of participants that meet the guidelines for the three exercise types was highest in strength training, followed by vigorous physical activity and moderate physical activity. Regrettably, an in-depth discussion on this issue may be challenging due to the lack of active research regarding university student participation patterns in different physical activity types. However, the Ministry of Culture, Sports, and Tourism conducted a study based on the 2022 National Survey on Physical Activity [6] and found that the highest proportion (21.6%) among those in their 20s, the age group of university students, engaged in bodybuilding, which falls under strength training. This trend aligns with the findings of our study. As evidenced by Chang's study [25], which demonstrated that male and female university students are actively trying to achieve an ideal body image, this phenomenon can be attributed to a high level of interest in physical appearance. Many university students are highly motivated to engage in strength training for body management.

Secondly, subjective health perception revealed that many participants perceived themselves as healthy. However, genetic factors negatively impact health. A study conducted by Lee et al. [26] that targeted individuals aged 20 to 60 also found that younger ages, particularly those in their 20s, correlated with better subjective health status, further corroborating the findings of our study. This trend suggests that younger individuals view their health more positively, which is consistent with previous research and our results. However, Kim's study [2] compared middle school, high school, and university students, revealing that university students had the highest depression levels. Therefore, further research is needed to gain a deeper understanding of mental health status and causes among university students. While existing research on the correlation between subjective health and genetic factors is insufficient for in-depth discussion, it is imperative to note that genetic influences on health affect all age groups. As such, future

research should also explore factors that positively and negatively influence subjective health across a broader age range, such as genetic factors.

Thirdly, various health management strategies were identified, including engaging in regular physical leisure activities, managing dietary habits, and taking health supplements while avoiding smoking. These observations align with those from a study by Shin et al. [27], which revealed that university students maintain their health through regular exercise, consistent meal patterns (dietary habits), and nutritional supplementation (health supplement consumption). Notably, there is a partial similarity in trends, with particular emphasis on a high proportion (57.7%) practicing regular exercise. Overall, these studies indicate that university students recognize the importance of exercise for health management and actively implement it as a periodic practice.

On the other hand, despite efforts by university students to manage their dietary habits and supplement nutrition for health maintenance, female university students have a higher prevalence of malnutrition, consume snacks, and eat out more frequently than male university students [28]. These findings suggest that female students often exhibit irregular dietary behaviors. However, once students enter adulthood, they encounter more opportunities for unhealthy lifestyle choices in an unrestricted environment, regardless of gender. Therefore, it is essential to consider implementing a nationwide dietary education system to instill values related to proper dietary habits for all university students.

The findings of Lee et al. [26] indicated that increased smoking among individuals in their 20s negatively impacted their subjective health, similar to the current study. Subsequently, participants tended to refrain from smoking due to concerns about its adverse effects on health. Furthermore, based on survey results that indicated high health concerns among 65.2% of university students [27], smoking avoidance is driven by health management considerations. Additionally, a study on adults aged 20 to 60 and above [26] revealed that individuals in their 20s exhibit the highest subjective health levels. This finding proposes that university students in their early 20s perceive their health status more positively than the other age groups. Due to the potential consequences of fostering a misguided attitude toward health habits based on a current sense of well-being, it is crucial to establish a collaborative effort involving multidisciplinary health experts and educators at a national level. This collaborative effort can lead to nationwide health education programs, and ongoing research and discussions should focus on this issue.

Fourth, concerning the perceived health promotion effects of different physical activity types, the majority of participants ranked intense physical activity as the most impactful, followed by strength training, then moderate physical activity. While there is limited research in this area, a study conducted by Son et al. [29] on middle and high school students reported similar results. In their study, subjective health awareness levels based on three physical activity types were observed in the order of high-intensity physical activity (31.7%), strength training (28.0%), and moderate-intensity physical activity (16.6%), corroborating the findings of this study. This trend may be attributed to the positive effects of intense physical activity on various physical factors, such as body shape, weight, and overall health, as evidenced by Kim et al. [30]. The perception that intense physical activity has the most significant impact on health promotion suggests a positive association between engaging in intense physical activity and experiencing health benefits across different physical factors.

Moreover, the present study revealed that strength training has internal and external health-promoting effects, including strength improvement, external physical enhancements that increase self-confidence, and rehabilitative effects. These findings correlate with the results of Chang's study [25], indicating that college students have a strong desire to improve their body image through physical activities. Additionally, Han et al. [31] demonstrated that injured college students found psychological (subjective) benefits in injury recovery through rehabilitation exercises, further supporting the current study's results. Thus, with its benefits of promoting healthy body composition, rehabilitation, and enhancing self-confidence, strength training holds significant value for internal and external health improvement among college students.

Many participants reported only positive health-promoting effects from vigorous physical activity and strength training: however, some participants expressed that they did not feel significant health improvement effects from moderate-intensity physical activity. Participants also noted that moderate-intensity physical activity could be suitable for their specific health condition. In a comparative study between college students majoring in physical education and those with different majors [32], there was no significant difference in the subjective health levels between groups. These findings suggest that considering various factors, including exercise intensity and type, is crucial for health promotion. Therefore, tailoring exercise programs to individual health conditions by researching and developing personalized exercise programs should be a priority.

While this study provides valuable insights into college students' subjective health perception, it is essential to acknowledge several limitations. First, the study's reliance on a small sample size (eight participants) from a single university limits the generalizability of the findings to a

broader population of university students. The lack of diversity in participant demographics, including age, gender, and socioeconomic background, may restrict the applicability of the study's conclusions to more diverse populations. Second, while in-depth interviews provide rich qualitative data, the subjective nature of participant responses and interviewer interpretation could introduce bias into the data analysis process, potentially influencing the validity and reliability of the findings. The focus on self-reported perceptions and experiences may overlook objective measures of physical activity levels and health status, leading to potential inaccuracies or discrepancies in the data collected. Third, while efforts were made to adapt existing instruments (e.g., KYPAQ, subjective health questionnaire) to the study's context, the validity and reliability of these instruments specifically for the target population (university students in OOO) may not be fully established, raising concerns about the accuracy of physical activity and health perception assessments.

1. Perspectives

Through focused interviews, this study examined subjective health perception related to physical activity among university students. Subsequently, three main themes were identified: Weight and Perception of Different Physical Activity Types, Subjective Health Perception and Management Strategies, and Subjective Health Perception by Physical Activity Type. First, a deeper understanding of the mental health status of university students is crucial, and further research should extensively explore factors influencing subjective health across various age groups. Second, active research and discussions are needed, with the government taking the initiative in designing nationwide health education programs to shape proper health lifestyle values among university students. Third, a detailed assessment of diverse health conditions among university students is essential. The collected data should then be used to research and develop personalized exercise programs tailored to individual health conditions. This study conducted qualitative research to understand subjective health perceptions based on the physical activity type among university students. However, due to the mall number of participants, generalizing the research results as objective indicators may be challenging. Therefore, future studies should expand the sample size (gender, age, occupation, etc.) and derive quantified data based on the results of this study to validate its effectiveness. Furthermore, since this study is based on the current situation, it is necessary to conduct parallel research that delves deeply into various factors, such as past experiences concerning familial and environmental influences, which could impact current lifestyle habits and perceptions.

CONCLUSIONS

This study delved into the subjective health perceptions related to physical activity among eight university students, revealing several key findings. Firstly, participants exhibited a strong inclination towards strength training, aligning with the prevailing interest in physical appearance among university students. Secondly, subjective health perceptions were generally positive, with genetic factors considered as potential negative influences. Health management strategies included regular physical activities, dietary habits, and health supplements, demonstrating a proactive approach by participants. Finally, intense physical activity was ranked highest regarding perceived health promotion effects, followed by strength training, while moderate-intensity physical activity received varied opinions. This study underscores the importance of considering individual health conditions when developing personalized exercise programs for university students.

CONFLICT OF INTEREST

All authors declare that they have no conflicts of interest with the contents of this study.

AUTHOR CONTRIBUTIONS

Conceptualization: HY Kim; Data curation: HY Kim, SH Choi; Formal analysis: HY Kim, SH Choi, KS Hong; Funding acquisition: HY Kim; Methodology: HY Kim, SH Choi; Project administration: HY Kim, SH Choi; Visualization: SH Choi; Writing original draft: HY Kim, SH Choi, KS Hong; Writing-review & editing: HY Kim, SH Choi, KS Hong.

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