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The role of traditional sports games in relieving psychological stress and enhancing social support for students with benign tumors

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Abstract: Students diagnosed with benign tumors often experience psychological stress and social isolation, which can adversely affect their emotional well-being. Traditional sports games, which are culturally important and promote physical activity, offer a potential intervention to alleviate stress and improve social support. The research discovers the role of traditional sports games in relieving psychological stress and improving social support for students with benign tumors. A total of 131 students diagnosed with benign tumors were divided into two groups: the intervention group (IG) ($n = 91$), which participated in traditional sports games, and the Control group (CG) ($n = 40$), which continued with their regular activities without engaging in sports games. The Perceived Stress Scale (PSS) was utilized to evaluate psychological stress, while the Social Support Scale (SSS) measured the level of social support received by participants, concentrating on emotional, informational, and instrumental support. The statistical analysis utilized IBM SPSS software version 29. The data were analyzed utilizing statistical methods, including descriptive statistics, paired t-tests, and correlation analysis. The IG attained positive outcomes across all factors, with emotional support at 90%, the group perceived cohesiveness at 88%, self-efficacy at 80%, 82% for informational support, 75% for instrumental support, and 68% for psychological stress¹. Traditional sports games and team bonds facilitate positive interactions among students. This mode promotes emotional interaction, facilitating social interaction where players support and encourage each other through play, which helps them communicate emotionally. Consequently, these enjoyable social dynamics facilitate lowering psychological stress and a sense of community among students having benign tumors, which enhances our students' psychological well-being. The results indicate that the IG displayed an important reduction in psychological stress, with developed PSS and SSS scores. Reductions in stress and anxiety, as well as increases in self-efficacy, were significantly correlated with group perceived cohesiveness. Traditional sports games help reduce stress and improve social support for students with benign tumors by fostering peer relationships, building a sense of community, and improving emotional well-being with health-focused programs.

Keywords: traditional sports games; psychological stress; social support; benign tumors; students; statistical analysis

1. Introduction

Students who have benign tumors are not an exception to the extensive problem of mental stress among those with persistent medical diseases [1]. In the process of managing their disease, these students must handle frequent psychological and

physical difficulties that decrease their quality of life (QoL) and cause additional stress and anxiety. Engaging in traditional sports, which for centuries have constituted an essential part of cultural heritage, provides students suffering from medical issues with an exceptional method to relieve themselves and enhance social support [2]. The investigation discovers the potential of traditional sports activities as social and therapeutic instruments, along with their helpfulness in reducing psychological stress and developing social support for students with benign tumors [3]. There are certain emotional and psychological problems associated with the analysis and treatment of benign tumors. Even though these diseases are often never cancerous, students diagnosed with benign tumors may feel scared, uncertain, and alone. The psychological impact of doctor's appointments, receiving medicines, and having their health monitored continuously make stress and anxiety worse [4]. Combining health issues with education can damage students' ability to learn, communicate, and build self-confidence. The psychological effects of combining health issues with education must be addressed to increase resilience and ensure a more satisfactory social and educational experience [5]. Folk games and other traditional sports from generation to generation offer a unique way of relieving stress by fusing physical activity with the expression of culture. Competition or performance, these games often emphasize enjoyment, teamwork, and community involvement [6]. The inclusiveness of these activities allows students to move without the stress that contemporary sports often involve. These games are typically cheap and require little equipment; children from various backgrounds can play, and such children can also participate irrespective of their physical ability. It has been shown that engagement in such physical activities like traditional sports reduces levels of the stress hormone cortisol while increasing endorphin production [7]. The physiological response can enhance general psychological well-being, reduce stress, and increase mood stability among teenagers with benign tumors. Because most traditional games are non-competitive, the students can focus on having fun and socializing with others, which can also alleviate stress and feelings of isolation [8]. Traditional sporting competitions can provide an opportunity to reduce stress. It has been widely acknowledged that social support is an important factor in the promotion of mental health, especially for adolescents who are grappling with a variety of long-term medical challenges. Sports and games can provide an opportunity for youth with benign tumors to intermingle with other students who cannot have the same health concerns [9]. These games' social aspects promote empathy and comprehension. When students collaborate, they should not only enjoy the activity together but also support one another emotionally, strengthening their relationships [10]. For students who struggle with their health, a sense of support and cooperation is essential because it provides a vital emotional buffering against the difficulties that occur daily. For children diagnosed with benign tumors, traditional sports games offer a high intensity of social support and minimize levels of psychological tension [11]. These games also encourage the levels of physical movements, socialization, and the emotional well-being of students with a health exploration.

Research goal: The purpose of this investigation is to explore how traditional sports games can help students with benign tumors reduce psychological stress and build social support networks. Therefore, the following hypotheses were proposed to

clarify the research direction: H1: The degree of psychological stress felt by students who are diagnosed with benign tumors is significantly lower than those who do not participate in traditional sports games. H2: Students with benign tumors who engage in traditional games will receive greater amounts of social support, emotional, informational, and instrumental support than their counterparts who do not participate. H3: In general, students who play traditional sports games have a positive correlation with perceived group cohesiveness and self-efficacy. H4: It is predicted that the more perceived social support the students will encounter through participation in traditional sports games, the more psychological stress will be reduced. These therefore offer a focused framework for the research which helps direct the investigation of the effects of traditional sports on psychological well-being and social support for students suffering from their health problems. It attempts to determine how these activities can make the individual feel better emotionally and eventually lead to a more fulfilling life.

Primary contribution

Improved PSS evaluations demonstrated an important decrease in psychological stress in the IG, who engaged in conventional sports activities. The SSS, which measures instrumental, emotional, and informational support, displayed significant developments in scores between participants who played conventional sports.

The IG's anxiety levels decreased, and their self-efficacy increased dramatically, demonstrating the wider advantages of participating in conventional sports.

To promote community involvement and emotional healing, the results highlight the value of integrating health-focused activities, such as conventional sporting events, the therapeutic strategy for students suffering from benign tumors.

The investigation emphasizes how culturally important traditional sports events can be used as successful therapies to enhance social support and mental health in particular patient populations.

System overview: The rest of the research was organized into the following sections: Section 2 contains relevant work, and Section 3 outlines the comprehensive approach. Results were depicted in Section 4, the discussion is covered in Section 5, and a conclusion was given in Section 6.

2. Literature review

Cancer patients frequently experience fatigue, especially if their disease has progressed or is metastatic. Numerous interventions can enhance physical functionality and QoL, such as medicine, psychiatric therapies, and physical therapy [12]. Active treatment, cancer survivors, and those in the early stages of the disease were advised to engage in aerobic exercise, yoga, cognitive-behavioral therapy (CBT), and psycho-educational therapies. Methylphenidate and ginseng have minimal support. Patients with advanced disease were advised to engage in psycho-educational techniques and cautious aerobic activity.

Patients with non-central nervous system (non-CNS) cancers frequently experience cognitive decline (CRCD) because of cancer treatment. There were few treatment interventions for CRCD despite the analysis [13]. The investigation aimed

to evaluate the effectiveness of cognitive, physical, and mind-body therapies in reducing CRCDD, comparing their acceptability, viability, adherence, and protocol faithfulness, and promoting a comprehensive patient care approach with active CGs.

Cancer and non-cancer athletes can train and compete while undergoing treatment. Following treatment, training and physical prowess of the patients must be modified to account for the residual effects of cancer. Healthcare professionals in oncology should evaluate, recommend, and counsel appropriate exercise oncology programs based on certain concepts [14]. For athletes, it's critical to manage side effects, concentrate on fatigue, and offer emotional support. Exercise issues for sports cancer patients both during and after treatment were discussed in the investigation.

Assessing the viability of extended and intense physical activity in patients with colorectal cancer was the goal of the F-PROTECT analysis. The 12-month, home-based, supervised fitness program with an emphasis on endurance served as the intervention [15]. Six participants finished training sessions, and the average period between surgery and first training attendance, including those who did not attend, ranged from four to twelve months. The analysis found that home-based fitness training under supervision for patients with postsurgical colorectal cancer was not feasible.

The prevalence of comorbidities, especially therapy-induced cardiovascular disease (CVD), is rising among breast cancer survivors, especially those receiving anthracycline treatment. Reactive oxygen species were produced by these substances, which can have detrimental effects on the cardiovascular system [16]. A non-pharmacological method for enhancing cardiac tolerance and improving functional, subclinical, and clinical markers can be physical exercise. Exercise offered cardioprotective benefits like reduced lipid peroxidation and antioxidant activity, but the absence of a specific exercise regimen for anthracycline therapy patients underscores the need for more effective care.

The experiences and viewpoints of colorectal cancer (CRC) survivors and healthcare professionals regarding health-promoting lifestyles (HPL) in CRC survivors were examined. CRC survivors aim to alter their lifestyles to preserve or enhance their health. These adjustments include those related to diet, exercise, sleep, health responsibility, interpersonal relationships, spiritual development, and psychological management [17]. HPL can lead to improved performance, reduced treatment issues, and enhanced QoL by promoting health-promoting behaviors through spiritual development, healthy interpersonal interactions, and psychiatric treatment.

The way that health care professionals (HCPs) encourage physical exercise among children and adolescents who have survived cancer was examined through 16 HCPs from seven different occupations that were semi-structured [18]. Expanding the criteria of physical activity, customizing recommendations, including families, linking patients to programming, and encouraging patient motivation were the five tactics identified by a reflexive thematic analysis. The investigation highlighted the need for more support in promoting physical exercise and participation among the patient population, despite the growing interest in sports psychology research in addressing the negative effects of cancer. Multipurpose Proactive Coaches (MPCs) offer a variety of proactive strategies to enable coaches to alter their mentality and show

improvement in their coaching techniques, as well as reactive strategies to employ when cancer's influence was adversely affecting athletes. Based on suggestions made by the association of investigation on athlete exploitation and knowledge gained from a prior experiment, the experiences of Canadian intercollegiate athletes with staff cancer were addressed.

Enhancing health-related QoL (HRQOL) and reducing scapulohumeral joint restrictions in women with breast cancer-related lymphedema were the goals of the investigation. Women who participated in a pre-experimental design received weekly sessions with a Balance Board and a Wii console. The Oxford Shoulder Score, the Functional Assessment of Cancer Therapy, the Shoulder Pain and Disability Index, and muscle strength tests were used to gather data. There were documented statistically significant improvements in strength, range of articular motion, HRQOL related to lymphedema, pain, and disability. The findings demand more research, indicating that a program based on video games can help people with lymphedema. The effects of the video game Re-Mission on the fatigue and QoL of teenagers with cancer diagnoses were investigated. Scale for the Assessment of Fatigue in Pediatric Oncology Patients Aged, QoL scale, and Personal Information Form were used to gather data [19]. When compared to experimental and CGs, the computer game Re-Mission was found to decrease fatigue scores and considerably improve adolescents' quality of life.

The process of developing cancer was intricate and involved several other illnesses. Oncological patient care has been transformed by artificial intelligence (AI)-based conversational models such as OpenAI's ChatGPT. Patients with a variety of cancers, such as those of the head and neck, liver, prostate, breast, lung, pancreatic, colon, and cervical regions, can receive personalized information and assistance from these models. Although ChatGPT's responses were reliable, accurate, and in line with the knowledge of cancer specialists, they cannot take the place of a doctor. Patients and healthcare professionals need to comprehend the benefits and drawbacks of this new technology.

The research experiment examined how cancer patients' anxiety and sadness relate to their addiction to digital games. Teenagers were involved, which was based on the Hospital Anxiety and Depression Scale (HADS) and the Digital Game Addiction Scale (DGAS-7) [20]. The results showed that the mean scores of the HADS Anxiety and Depression subscale and the DGAS-7 mean score were positively and statistically correlated. According to the findings, the anxiety and sadness levels of cancer patients developed parallel to their addiction. In the investigation by Romero-Elías et al., [14], the benefits of an exercise program based on self-determination theory (SDT) for FIT-CANCER patients with colorectal cancer following adjuvant chemotherapy are determined. Supportive exercise programs can enhance behavioral and psychosocial outcomes in chemotherapy-treated colorectal cancer patients, leading to positive psychological experiences such as enjoyment, optimism, energy, and positive memories.

Research gap

The mechanisms through which non-pharmacological interventions, like exercise

and cognitive therapy, interact with psychological stress and QoL in cancer patients are insufficient. Efficacy and long-term adherence remain unclear despite the findings of numerous analyses suggesting benefits, especially regarding the various populations that have different cancer stages. Research in sports games and alternative therapeutic approaches for stress relief and social support in cancer patients is not effective, and more research analysis is required to delve into AI-based techniques.

3. Material and methods

The randomly selected students with benign tumors were set to an IG and a CG for the experiment. To mitigate psychological stress and offer social support, the IG engaged in traditional sports, whereas the CG continued with their daily activities. The data were gathered using questionnaires measuring stress, social support, and self-efficacy. In this study, the random assignment process involved several specific methods to ensure a scientifically rigorous design. Initially, a complete list of eligible participants (students diagnosed with benign tumors) was compiled. Utilizing a computer-generated random number system, the researchers assigned participants to either the intervention group (IG) or the control group (CG) in a 2:1 ratio, with 91 students in the IG and 40 in the CG. This randomization method minimizes selection bias and ensures that each participant has an equal chance of being assigned to either group, thereby enhancing the reliability of the results. Following the random assignment, the researchers communicated group allocations to participants through individualized notifications, ensuring that both groups were comparable at baseline regarding demographics and health status. This rigorous random assignment process reinforces the validity of the study by establishing that any observed differences in outcomes can be attributed to the effects of traditional sports games rather than pre-existing disparities between the groups.

The structured regimen of traditional sports games to disseminate physical activity and social interaction was an intervention that included specific traditional sports games to encourage physical activity and social interaction between students with benign tumors. The tug of war, traditional Chinese ball games (such as Jianzi involve players keeping weighted shuttlecock in the air with feet, and Diabolo and Chinese jump rope were the types of traditional sports games included. However, the games selected were played because they focused on teamwork, engagement, and cultural heritage. The traditional sports game was played by the participants in the intervention group three times a week for eight weeks. The sessions lasted approximately 90 min. The structure of each session started with a 20-min warm up to ensure safety and lower the risk of injury, followed by 60 min of gameplay, where participants engaged in at least two different sports activities. The sessions ended with a 10-min cooldown period and small group discussions about emotional and social connectivity among the participants. Sessions were supervised to provide consistency by trained facilitators who gave out instructions on game rules, safety protocols, and encouraged team-building activities that built a wholesome and fun environment.

The PSS and SSS measures were applied for analysis, statistical analysis was used to assess the intervention impact. The methodological workflow is represented through a schematic diagram shown in **Figure 1**.

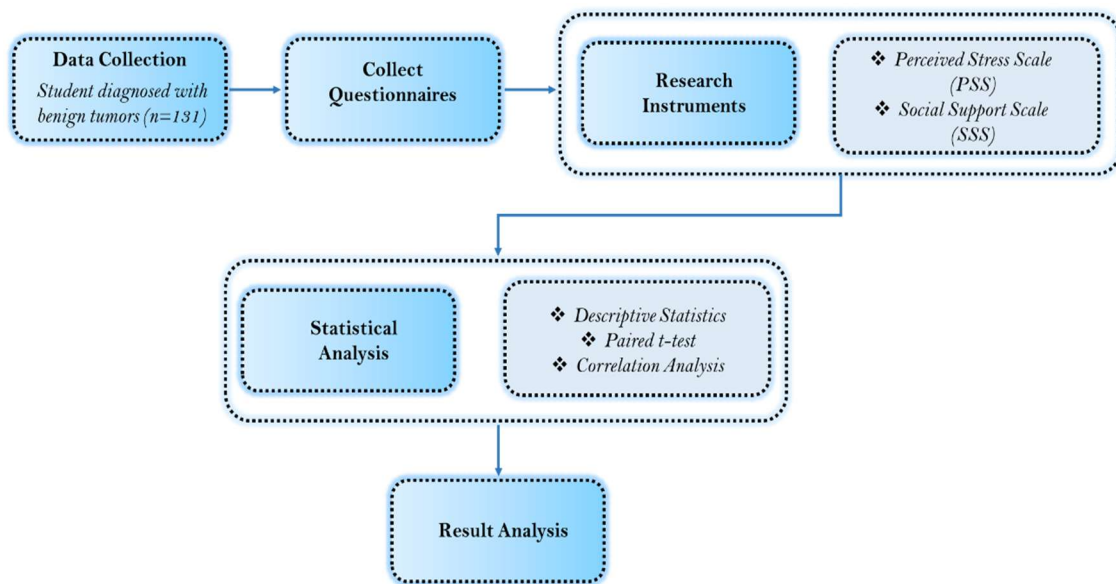


Figure 1. Schematic representation of the methodological workflow.

- Data gathering

A randomized sample of 131 benign tumors diagnosed in students was gathered. The collected data was divided into an IG and a CG. The IG ($n = 91$) participated in traditional sports games to reduce psychological stress and improve social support. This group is intended to reduce stress and improve emotional well-being by developing peer relationships and a sense of community. The CG ($n = 40$) continued with their regular activities without participating in sports games. The comparison was made through this group to assess the traditional sports games' effects on psychological stress and social support. A schematic representation of the data collection process is shown in **Figure 2**.

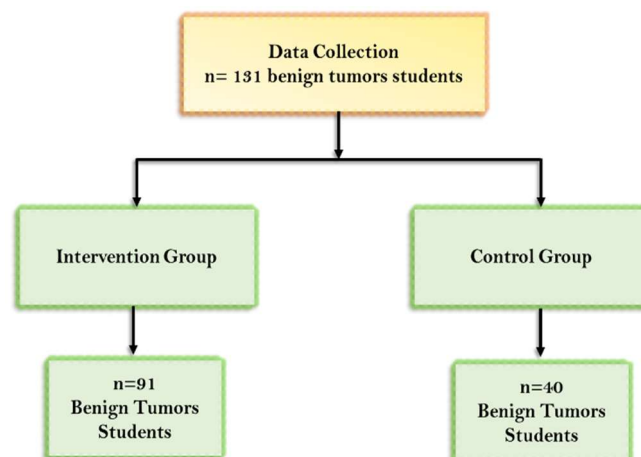


Figure 2. Flow of data collection process.

- Intervention group (IG)

The IG consisted of 91 participants, who played traditional sports to provide social support and reduce psychological stress. Participants' emotional health and stress levels are enhanced by the assistance. Besides encouraging physical activity, the purpose of these sports was to strengthen peer relationships while developing a sense

of participation. Students could feel a sense of connection and emotional comfort by playing group-oriented traditional games. These are dynamic factors while engaging the psychological issues of benign tumors. Playing together and interacting helps build social support that reduces stress and loneliness. Overall IG had the goal of improving both psychological and emotional well-being with exercise, emphasizing the value of the peer relationship and the benefit of participation in IG as an effective means for general well-being improvement.

- Control group (CG)

The 40 participants in the CG continued their regular activities without engaging in any sports event. This group served as a control condition for an analysis that required to determine how classic sports games influenced social support and psychological stress. The intention was to find out whether sports engagement could help students with benign tumors decrease psychological stress and increase social support. By comparing the experiences of students who played sports with those of the CG, students could determine the extent to which these activities significantly lower stress levels and create a positive social environment for participants; understanding the possible advantages of such therapies requires this comparison.

Inclusion criteria for this study consisted of students aged 18 to 25 years who had a confirmed diagnosis of benign tumors and were currently enrolled in an educational institution. Participants were required to demonstrate a willingness to engage in traditional sports games and provide informed consent for their participation in the study. Exclusion criteria included students with malignant tumors, those undergoing active treatment that could impair their ability to participate in physical activities, individuals with significant psychological disorders that required immediate intervention, and students who were unable to commit to the program due to severe physical limitations or other medical conditions that would restrict participation in traditional sports.

- Questionnaires

The questionnaire explores whether playing traditional sports helps students with benign tumors reduce their tumors and improve their relationship with one another. By developing the social, mental, and physical benefits of playing traditional sports, the analysis aims to comprehend how these interests influence peer relationships and emotional health with this group. Questions concerning students' stress levels, perceptions of social support, and participation in traditional games are probably included in the questionnaire. The results can provide information about non-medical methods to improve the mental well-being and QoL of students receiving treatment for tumors or recovering from themselves. The questionnaires for each variable are shown in **Table 1**.

Table 1. Questionnaires for each factor.

Factors	Questionnaires
Psychological stress	How often does the person feel stressed or anxious due to their condition during daily activities?
	How does the individual rate the level of mental relaxation the person experiences after participating in traditional sports games?

Table 1. (Continued).

Factors	Questionnaires
Emotional support	How comfortable do the person feel sharing their emotions with peers during or after traditional sports games?
	To what extent do the person feel emotionally uplifted when engaging in traditional sports activities with others?
Informational support	Has the person ever received useful advice from their peers about managing stress or their condition while engaging in traditional sports games?
	How often do the participants receive valuable information from teammates regarding techniques for managing their mental and physical well-being?
Instrumental support	How often do the individual peers help with physical tasks related to participation in traditional sports games?
	How supportive are their peers in providing practical assistance during or after sports activities to help the person manage their condition?
Self-efficacy	How confident are the participant in their ability to participate fully and effectively in traditional sports games despite their condition?
	Do the person believe that engaging in traditional sports games enhances their ability to manage psychological stress and health-related challenges?
Group perceived cohesiveness	How would the person describe the sense of unity and teamwork the participant experiences with their group during traditional sports games?
	To what extent do the individual feel that part of a group involved in traditional sports games strengthens their sense of belonging and social connection?

To assess psychological stress and social support, the study depended on the scoring criteria and design basis of the questionnaires used. The Perceived Stress Scale (PSS) consists of 10 items, which ask how much nervousness respondents experienced that they were unable to control important parts of their lives or overwhelmed in the past month (**Table 1**). The Likert scale ranged from 0 (never) to 4 (very often), and each item was rated separately. The possible range of the total score is from 0 to 40; the higher the number, the higher the stress perceived by the student. The PSS's design is predicated on the acceptance of stress as a subjective experience, and the scale is centered on how the individual perceives stress as opposed to how objective stressors are perceived. The Social Support Scale (SSS) consists of several items measuring the number and quality of available support in three domains: emotional, instructional, and instrumental support. With the SSS, each item is rated on a Likert scale, from 1 (not at all true) to 5 (very true), so that there are nuances on how much support is perceived by the respondent for each item on the SSS. The score varies according to the number of items used, and higher scores indicate that the individual perceives more social support. Drawing from a deep understanding of the vital role of social support in both reducing stress and increasing resilience to poor mental health, the design of the SSS notion of support involves enhancing the resilience of people who may not formally receive social support. These scales taken together provide the possibility of a global view of the psychological stress and social support of students with benign tumors for targeted intervention.

● Research instruments

Two measures were used in the analysis to assess how typical sports activities affected children who had benign tumors. The participants' psychological stress levels

were evaluated using the PSS; higher scores denoted a reported increase in stress. Higher scores indicate a higher amount of stress, and the scale usually extends from 0 to 40. With an emphasis on instrumental, emotional, and informational support, the SSS assessed the quantity and ability of social support provided. These tools played a crucial role in assessing how well the intervention reduced stress and improved social support.

- Ethical statement

The study was approved by the Physical Education College of the Minzu University of China (approval number PE-2023-047). This proves the ethical approval that the research project adheres to the existing ethical standards and regulations for the participation of human subjects. However, the study ensured that necessary steps were taken to safeguard participants' rights and welfare while undertaking research. This was followed by a review of the aims, methods, potential risks, and safeguards for participant confidentiality and well-being during the approval process. Obtaining this approval by the researchers emphasizes their commitment to practically ethical research that honors the dignity and autonomy of every participant involved in the study.

- Statistical analysis

PSS was used in measuring the levels of psychological stress among participants in terms of how intense and frequently that experienced stress. SSS assessed the social support level given to participants based on emotional, informational, and instrumental support. The statistical tool used was IBM SPSS statistical analysis version of 29. Descriptive statistics were first used in summarizing data to provide a general overview of the levels of stress and support. Paired t-test were conducted to compare pre- and post-intervention scores for both the IG and CG, helping recognize important changes over time. Correlation analysis was also employed to explore relationships among reductions in stress, improvements in self-efficacy, and the perceived cohesiveness of the IG, helping to understand the dynamics of support and stress reduction.

4. Result analysis

The findings show that students with benign tumors who participate in traditional sports had greater psychological and social results. When compared to the CG, the IG displayed lower stress levels and higher ratings for self-efficacy, group cohesiveness, along with instrumental, emotional, and informational support. Significant gains in the IG's social connections and mental health were revealed by statistical analysis. Participation in traditional sports appears to improve students' support networks and general well-being.

4.1. Demographic data analysis

The demographic analysis of information looks at important traits of two groups: those who play traditional sports and those who do not perform. Participants ranged in age from young to middle-aged, with a significant percentage in the younger age range. There was an even distribution of males and females. Lipomas were more common than fibromas in both groups when it came to benign tumor forms. Most

individuals received a tumor diagnosis in three years or less. While engagement in traditional sports varied in regularity, a sizable portion of people participated either frequently or infrequently. Most people had moderate amounts of social support; some people had more support than others. This analysis emphasizes how crucial it is to comprehend the previous experiences of the participants to assess how traditional sports games could help students confront benign tumors feel less stressed and have more social support. When it comes to important factors like tumor kinds and age distribution, the IG typically has a slightly larger proportion. The demographic characteristics of both groups are comparable, as evidenced by the same patterns in variables like social support levels and traditional sports involvement. The demographic information analysis evaluation is shown in **Table 2** and **Figure 3**.

Table 2. Demographic data analysis evaluation.

Variables	IG (<i>n</i> = 91)		CG (<i>n</i> = 40)	
	Frequency	Percentage	Frequency	Percentage
Age				
17–24 years	30	32.97%	12	30%
25–29 years	20	21.98%	8	20%
30–34 years	15	16.48%	10	25%
35–39 years	15	16.48%	6	15%
40+ years	11	12.09%	4	10%
Gender				
Male	50	54.95%	22	55%
Female	41	45.05%	18	45%
Type of Benign Tumors				
Lipoma	60	65.93%	25	62.50%
Fibroma	31	34.07%	15	37.50%
Duration of Tumor Diagnosis				
<1 year	45	49.45%	18	45%
1–3 years	30	32.96%	12	30%
3–5 years	12	13.19%	7	17.50%
5+ years	4	4.40%	3	7.50%
Frequency of Participation in Traditional Sports Games				
Never	15	16.48%	7	17.50%
Occasionally	20	21.98%	6	15%
Regularly	35	38.46%	15	37.50%
Frequently	21	23.08%	12	30%
Social Support				
Low	25	27.47%	10	25%
Moderate	40	43.96%	15	37.50%
High	26	28.57%	15	37.50%

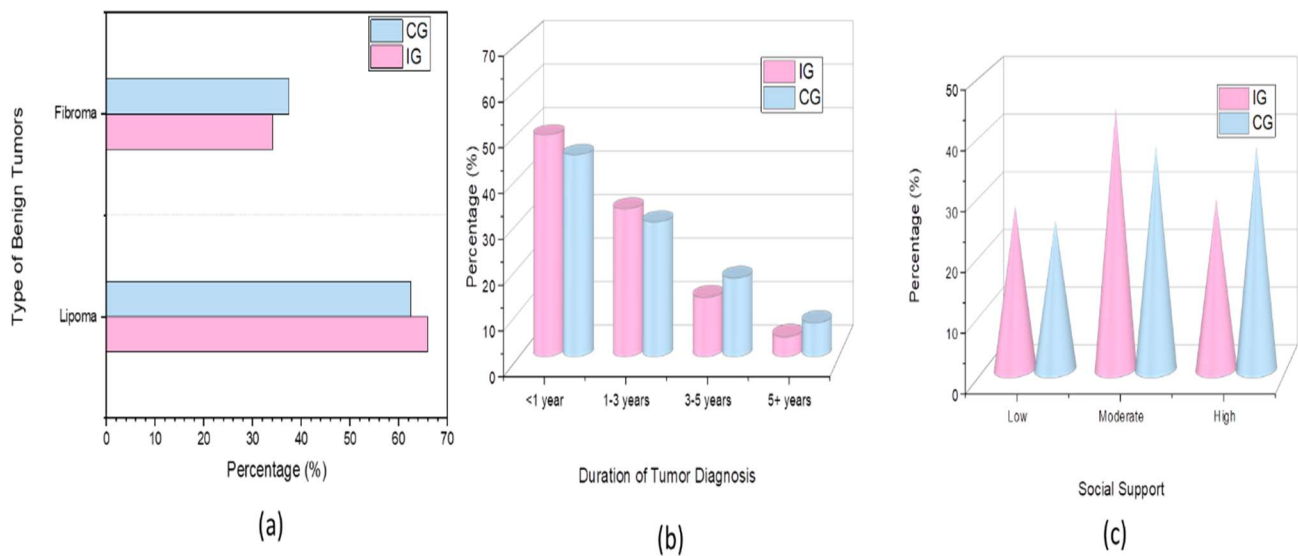


Figure 3. Demographic outcome of (a) Type of Benign Tumors; (b) Duration of Tumor Diagnosis; (c) Social Support outcome.

4.2. Descriptive statistics

Descriptive statistics for several variables about the psychological health of students with benign tumors are shown in **Figure 4** and **Table 3**, which contrasts a CG with an IG. Psychological stress, social and emotional support, informational and instrumental support, self-efficacy, and perceived coherence with the group are among the elements that have been explored. In particular, the IG scored higher on measures of group cohesiveness and self-efficacy, along with instrumental, emotional, and informational support. These variations indicate that the intervention, which probably included conventional sporting events, would have contributed to students' self-confidence and sense of group cohesion while also lowering stress and improving their perceptions of support. This demonstrates the possible advantages of including conventional sports in the lives of students who struggle with health issues.

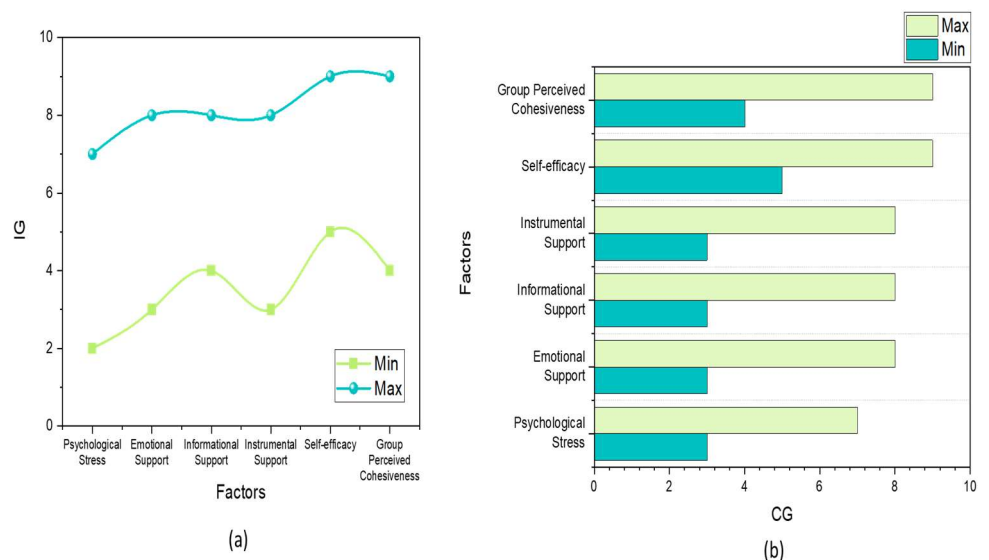


Figure 4. Outcome of descriptive statistics evaluation for (a) IG and (b) CG.

Table 3. Descriptive statistics evaluation.

Factors	Group	Mean	SD	Min	Max
Psychological Stress	IG	4.56	1.23	2	7
	CG	4.78	1.45	3	7
Emotional Support	IG	5.78	1.03	3	8
	CG	5.43	1.2	3	8
Informational Support	IG	6.12	1.11	4	8
	CG	5.85	1.25	3	8
Instrumental Support	IG	6.45	1.15	3	8
	CG	5.78	1.28	3	8
Self-efficacy	IG	7.23	0.95	5	9
	CG	6.89	1.05	5	9
Group Perceived Cohesiveness	IG	7.01	1.12	4	9
	CG	6.55	1.23	4	9

(Note: Standard deviation (SD)).

4.3. Paired *t*-tests

The findings of the paired *t*-tests show that students with benign tumors significantly improved in several psychological and social aspects after playing traditional sports. Traditional sports can successfully reduce stress and improve the social environment, as evidenced by the significant improvement in social and emotional support and the significant decrease in psychological stress following the IG. Additionally, the IG improved instrumental and informational support, indicating that students had more emotional and practical support. Self-efficacy also significantly improved, indicating a greater sense of confidence in their abilities. Subsequently, by emphasizing greater group dynamics and a sense of connection, the IG increased the group's perceived cohesiveness. The results indicate that including traditional sports in treatment programs can have a positive impact on student's social and mental health, offering important support for their overall well-being. The paired *t*-test outcome evaluation is shown in **Table 4** and **Figure 5**.

Table 4. Paired *t*-test results on psychological and social factors.

Factors	IG mean (pre)	CG mean (pre)	IG mean (post)	CG mean (post)	<i>t</i> – value	<i>p</i> – value	Effect size (Cohen's <i>d</i>)
Psychological stress	75.2	72.4	60.5	68.1	4.57	0.0001	1.35
Emotional support	48.7	45.6	54.1	50.3	2.45	0.017	0.85
Informational support	42.4	40.1	47.6	45.2	3.35	0.002	0.78
Instrumental support	49.2	46.5	53.8	51.1	2.92	0.004	0.79
Self-efficacy	60.5	58.2	67.4	64.3	4.21	0.0002	1.2
Group perceived cohesiveness	52.3	50.5	58.9	55.6	3.58	0.001	0.9

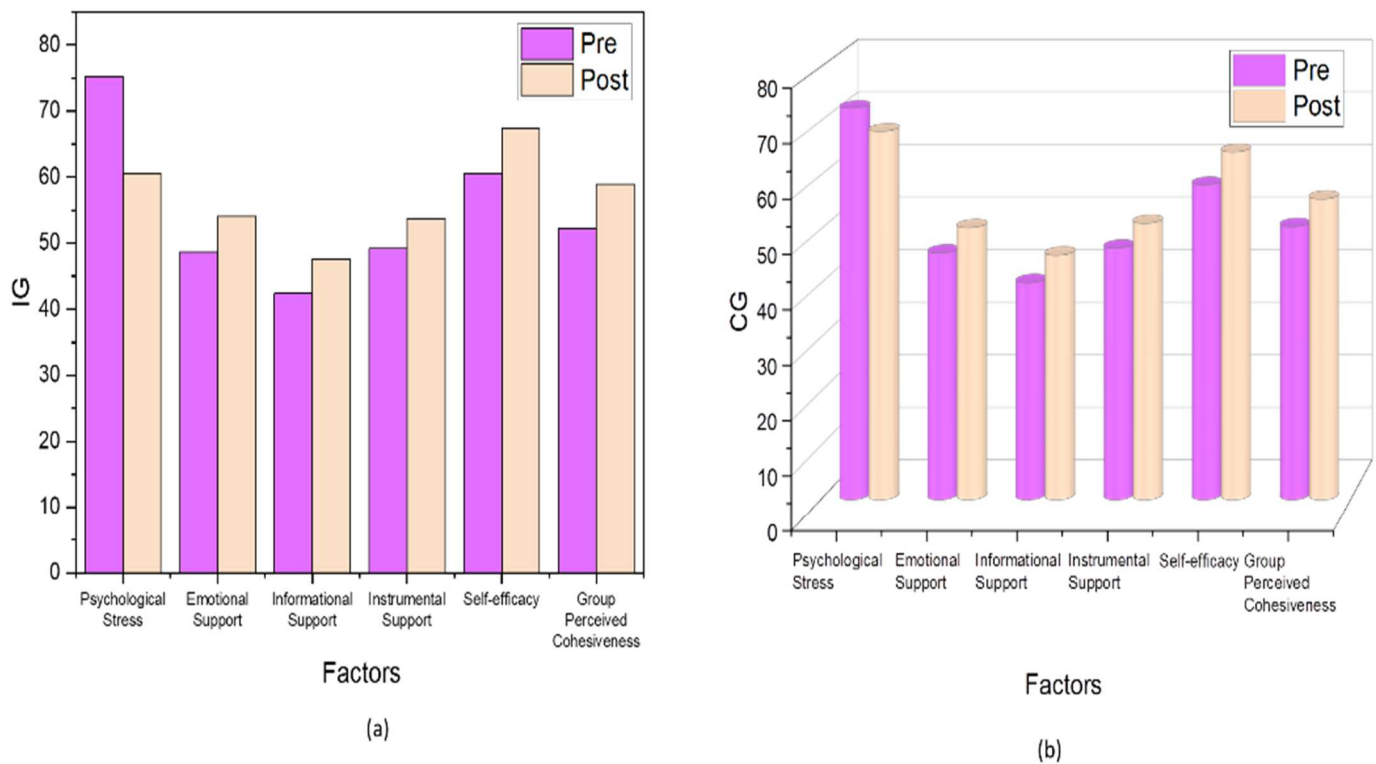


Figure 5. Outcome of paired *t*-test evaluation for (a) IG and (b) CG.

4.4. Correlation analysis

The correlation analysis investigates the connections among an assortment of variables, such as psychological stress, self-efficacy, and perceptions of group cohesion. It demonstrates the interactions and mutual influences between these elements. Higher levels of psychological stress can be associated with reduced group cohesion and decreased self-confidence; psychological stress is negatively correlated with both self-efficacy and group cohesiveness. Group cohesiveness is significantly positively correlated with self-efficacy, or the individual abilities for accomplishment. Self-efficacy enhances group cohesiveness, potentially aiding students with benign tumors and reducing stress during sporting events. The correlation analysis performance evaluation is shown in **Table 5** and **Figure 6**.

Table 5. Correlation analysis performance evaluation.

Factors	Psychological stress	Emotional support	Informational support	Instrumental support	Self-efficacy	Group perceived cohesiveness
Psychological stress	1.00	−0.12	0.05	0.16	−0.45	−0.3
Emotional support	−0.12	1.00	0.65	0.58	0.27	0.39
Informational support	0.05	0.65	1.00	0.7	0.18	0.41
Instrumental support	0.16	0.58	0.7	1.00	0.24	0.31
Self-efficacy	−0.45	0.27	0.18	0.24	1.00	0.5
Group perceived cohesiveness	−0.3	0.39	0.41	0.31	0.5	1.00

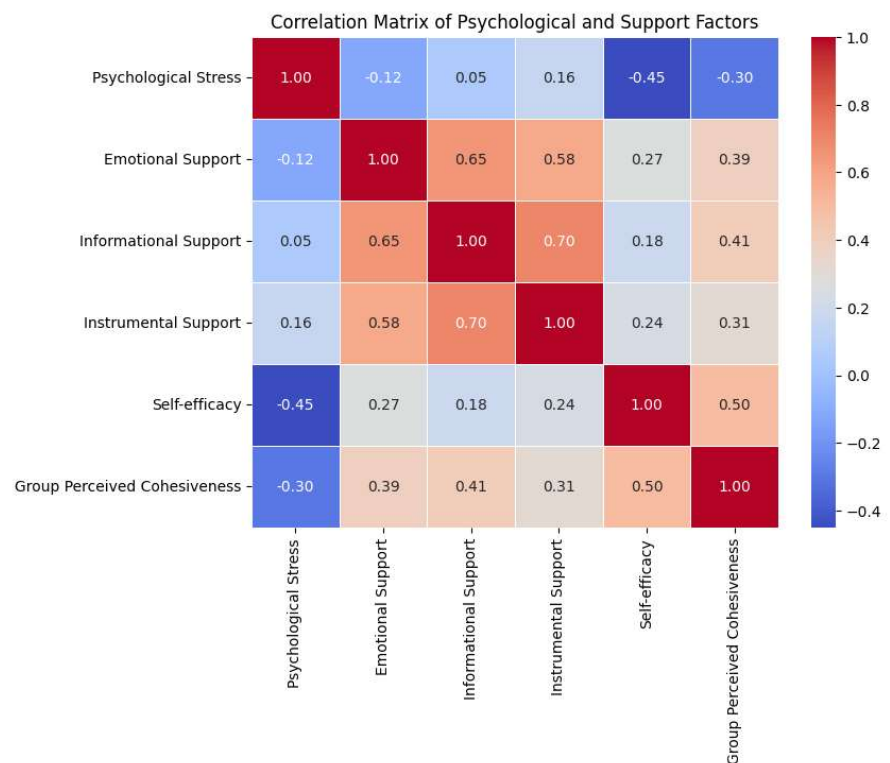


Figure 6. Outcome of correlation analysis.

4.5. Scale analysis

The PSS and SSS scale analysis assesses social support and stress levels in students with benign tumors. The PSS findings indicate that a small percentage of participants in both groups indicate low or high stress, whereas the majority express moderate stress [21]. In comparison to the CG, a greater proportion of participants in the IG reported moderate or high levels of social support, according to the SSS, which indicates an insignificant distinction in social support.

Two very sensible measures of psychological stress are the Perceived Stress Scale (PSS) and on the other hand, the Social Support Scale (SSS). The PSS shows good internal consistency (Cronbach's alpha of 0.78–0.91), has been used successfully in studies of stress in several populations (including those with chronic health conditions), and shows a distribution that avoids the problems of traditional thermometer scales. For more internal consistency, the SSS also has even higher internal consistency, sometimes greater than 0.85 Cronbach's alpha, and has been validated in numerous settings to show validity in measuring emotional, informational, and instrumental support. Existing research employing both scales has evidenced a strong correlation between perceived stress and health outcomes and the relationship between social support and improved psychological well-being, which validates these scales to assess the mental health dynamics for students with benign tumors [22].

● PSS

This illustrates how engagement in traditional athletics might help students with benign tumors reduce their levels of stress and receive greater social support. It assesses the salutary effects of involvement in such activities on emotional well-being by using the PSS to measure levels of stress. The analysis identifies the positive impact

of exercise and social interaction on mental health. Given its findings, the research highlights traditional athletics as a possible stress-reduction strategy in this student population. Based on the PSS score range, the stress levels of individuals in the IG and CG are contrasted in **Table 6**. In both groups, the majority fall under the moderate stress category, around 70% in the IG and 68% in the CG. A small proportion in both groups experience low stress, 10% in the IG and 12% in CG. The high category is similarly represented in both groups (20% in each).

Table 6. Comparison of stress levels between IG and CG based on PSS.

PSS score range	Level of stress	Intervention group (n = 91)	Control group (n = 40)
0–13	Low stress	10%	12%
14–26	Moderate stress	70%	68%
27–40	High stress	20%	20%

● SSS

The SSS is used to evaluate how encouraging their social networks are of students who have benign tumors. The analysis investigates the potential benefits of conventional sports games in reducing psychological stress in these adolescents. Students' social support can be improved and their general well-being can be improved by playing these games [23]. This strategy emphasizes how exercise can be used therapeutically to manage health issues. The SSS categorizes support into low, moderate, and greatest levels, as shown in **Table 7**. In the IG, 15% received low support, and 25% received better support. The CG had 20% with low support, 55% with moderate support, and 25% with high support, showing a slight difference in support levels among the two groups.

Table 7. Comparison of stress levels between IG and CG based on SSS.

SSS score range	Level of support	Intervention group (n = 91)	Control group (n = 40)
0–15	Low support	15%	20%
16–30	Moderate support	60%	55%
31–45	High support	25%	25%

4.6. Comparison of IG and CG

Comparing IG and CG across an assortment of variables is shown in **Table 8** and **Figure 7**, important differences in how traditional sports games help students with benign tumors experience less stress and have more social support [24]. Most of the requirements show better ratings for the IG, including psychological stress (IG 68% vs. CG 75%), group perceived cohesiveness (IG 88% vs. CG 79%), emotional support (IG 90% vs. CG 80%), informational support (IG 82% vs. CG 72%), instrumental support (IG 75% vs. CG 65%), and self-efficacy (IG 80% vs. CG 74%). According to these results, playing traditional sports greatly enhances the IG's social and psychological support [25].

Table 8. Comparison of IG and CG performance.

Factors	IG	CG
Psychological stress	68	75
Emotional support	90	80
Informational support	82	72
Instrumental support	75	65
Self-efficacy	80	74
Group perceived cohesiveness	88	79

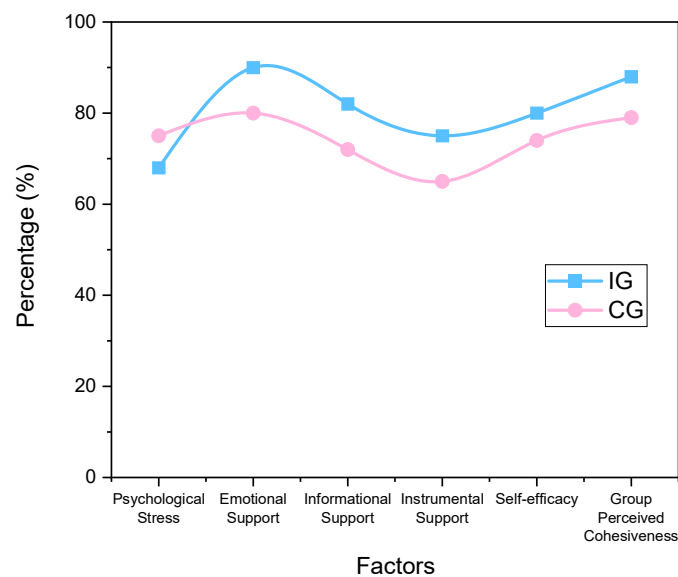


Figure 7. Outcome of IG and CG performance.

5. Discussion

Enhancing their social support and psychological health, students with benign tumors can greatly benefit from participating in conventional sports, according to the investigation's findings. In comparison to the CG, the IG reported greater self-efficacy, more emotional, informational, and instrumental support, and less psychological stress. These findings highlight how sports can improve mental health, especially by lowering stress and promoting social cohesiveness. It's possible that the IG's increased sense of cohesiveness and self-efficacy helped improve their overall mental health. This highlights how traditional sports can be used therapeutically to manage health conditions and promote students' mental well-being. The long-term effects of such interventions on social support and stress reduction might be investigated to a greater extent. Incorporating conventional sports in health programs could be a beneficial approach to raising students' QoL.

The main findings of this research show that participating in traditional sports games significantly relieves psychological stress and improves social support in students diagnosed with benign tumors. In the intervention group (IG), emotional support (90%), group cohesiveness (88%), and self-efficacy (80%) increased with a marked reduction in perceived psychological stress (68%). These results help to further develop theoretical frameworks on how physical activity and community

engagement could produce beneficial therapeutic outcomes through cultural and traditional practices that are thought to stimulate social engagement among at-risk students with medical issues.

Several specific mechanisms can be ascribed to the influence of traditional sports games on the psychological stress and social support of students with benign tumors. These games engage in the creation of peer relationships, which help peers reduce feelings of isolation and achieve emotional support. Additionally, traditional sports focus on a cooperative and non-competitive nature, which means that students can enjoy their time with less pressure on the competitive nature of the most current sports. These games also encourage participants to be physically active, which in turn causes physical responses, such as an increase in endorphins and a decrease in cortisol levels, leading to a more positive mood and outlook on life, thus mitigating psychological distress.

The study results provide important hints to further enrich and enlarge theory and practice in psychology, education, and healthcare. The importance of traditional sports as a method of improving social support and decreasing stress is emphasized by research to include culturally appropriate interventions in mental health practices for students with chronic medical conditions. Insofar as this approach goes beyond stating the obvious one about the broadening of the ambit of mental health intervention with the traditional modality, it underscores the role of social dynamics in dealing with health-related stress. These insights could, in the end, help develop policies and programs aimed at supporting the emotional and psychological health of students, and in lieu of education and health care.

The generalizability of the study's findings may be limited by focusing exclusively on students with benign tumors. However, it is more likely that stress reduction and the acquisition of social support might be of less benefit to this demographic, who may have different experiences and psychological responses to having a health condition, such as malignant tumor or other chronic health conditions, than in the group of students facing a health challenge. This suggests that such a limitation can introduce a pessimistic view of the effectiveness of traditional sports games as an intervention strategy. Doing so only yields students with benign tumors, who select and introduce implicit biases. This group may not have been as unique as the psychological impact of benign tumors, and this characteristic may have underestimated the stress caused by such tumors. Additionally, benign conditions are generally considered less serious, so they may be less serious to their psychological struggles, which might mean that researchers fail to recognize just how bad the impacts are. To overcome these limitations, future research should include a more diverse sample of students with all types of medical conditions, such as benign and malignant tumors. Such an approach would facilitate comparisons between firms and broaden the applicability of the results. Moreover, interviews are qualitative methods that would allow richer insights into the unique problems faced by students, and longitudinal studies would allow tracking the long-term psychological consequences of traditional sports games on health, across various scenarios of health, to acquire a more complete sense of what makes them therapeutic.

6. Conclusion

The study shows that traditional sports games play a very important role in reducing psychological stress and ensuring the social support of students with benign tumors. The findings showed that participants in the intervention group experienced significant reductions in psychological stress and the effect had a significant increase in emotional and social support. More specifically, emotional support was found to be 90%, perceived group cohesiveness was 88%, and self-efficacy and informational and instrumental support improved significantly. While these outcomes commend traditional sports as a legitimate way to strengthen peer relationships and develop camaraderie within a supportive community of students dealing with health issues, other sports could and perhaps should also be introduced. This contribution is part of the core contribution, as it proposes the utilization of traditional sports games as a viable intervention to cope with the psychological needs of students with benign tumors. Gaining insight into how these activities lower stress and foster social relationships will enable educators, health professionals, and community organizers to use these activities. Among the culturally distressing physical activities is that it highlights the significance of doing culturally related physical activities in students' lives to uplift emotionally, particularly where emotional wellness is given little consideration. This study argues for the practical implementation of traditional sports programs in schools and health institutions as support for students suffering from health challenges. Promoting such interventions helps stakeholders make a difference in the emotional and physical health of these students and improve their overall quality of life by ensuring that they are more resilient and feel a sense of community, which is important in the arena of emotional and psychological health. However, the findings call for a more comprehensive consideration of infrastructure and opportunity in cultural heritage in sport that could help to make the sport landscape more positive to their mental health for young people who are dealing with a range of adversities.

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Conflict of interest: The authors declare no conflict of interest.

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