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A study of the effects of outdoor group building activities on the psychological well-being of 25-30 year old overtime employees in private enterprises in Shanghai, China

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ABSTRACT

Today, Shanghai is China's economic and trade center and one of China's mega cities, which leads to the fast pace of life in Shanghai. Some employees in private enterprises work overtime, which makes the happiness of employee's plummet, and eventually leads to the increase of turnover rate, which leads to the loss of talents in the company. This paper focuses on the impact of overtime work on the psychological happiness of 25 to 30 year old employees in Shanghai private enterprises, and whether the intervention of outdoor team building activities can improve the happiness of employees. This paper will use the mixed research method of interview and questionnaire to explore the influence of 25-30 years old in Shanghai private enterprises on the psychological happiness of overtime workers. This study can improve the working happiness of people between 25 and 30 years old and improve work efficiency, help companies fill the talent gap and further development, provide relevant theoretical basis for applied psychology, and provide reference suggestions for human resources in Shanghai private enterprises to promote the enthusiasm of employees. (Disclaimer: Shanghai in this article refers to Shanghai, China)

KEYWORDS

Work overtime; Happiness of employees; Shanghai private enterprises; 25 to 30 year old employees

1. INTRODUCTION

1.1. Research Purpose

In order to provide suggestions for enterprises to improve the working environment and quality of life of employees, this paper deeply understood the psychological well-being of employees aged 25 to 30 working overtime in private enterprises in Shanghai, China, and the impact of working overtime on their mental health. Through the implementation of outdoor team building activities, the impact of outdoor team building activities on the psychological happiness of overtime employees is studied to determine whether outdoor team building activities have the potential to relieve overtime pressure and improve employee happiness. Based on the research results, targeted management suggestions are proposed, including overtime policy optimization, employee mental health support and team building programs, so as to help enterprises improve employee psychological happiness, enhance employee motivation and enterprise competitiveness.

1.2. Background of Study

As the economic center of China, Shanghai has been affected by the COVID-19 epidemic in recent years, and some small and medium-sized private enterprises have closed down, increasing the risk of employee unemployment. Working employees of private enterprises, especially those aged 25-30

who work overtime, face great psychological pressure and the challenge of reduced happiness, and the long-term overtime culture may lead to physical and mental exhaustion, anxiety and depression.

1.3. Problem statement

In today's private enterprises in Shanghai, employees aged 25 to 30 often face long hours of overtime, which can have a negative impact on their psychological well-being. The purpose of this study is to explore the influence of outdoor group building activities on the psychological happiness of this group through mixed research methods. We will combine qualitative and quantitative research methods to investigate. First, through in-depth interviews and focus group discussions, the experience and psychological feelings of employees participating in outdoor team building activities were deeply understood. Secondly, the subjective evaluation of employees' psychological happiness and the feedback of their participation in outdoor group building activities were collected through questionnaire survey, and the influence of outdoor group building activities on psychological happiness was quantified through statistical analysis. Through mixed research methods, we can comprehensively understand the impact of outdoor group building activities on the psychological well-being of overtime employees, and provide more comprehensive and reliable research conclusions, so as to provide more accurate management suggestions for private enterprises in Shanghai, promote the mental health and happiness of employees, and promote the sustainable development of enterprises.

1.4. Research Objective

1) Explore the level of psychological well-being of overtime employees aged 25 to 30 in private enterprises in Shanghai, including their subjective well-being, job satisfaction and life satisfaction.

2) Analyze the influence of outdoor group building activities on the psychological well-being of overtime employees, and to explore the direct and indirect influences of the activities on the psychological well-being of employees.

1.5. Research Question

1) Does participation in outdoor sports intervention have a positive impact on employees' job performance and job satisfaction?

2) Is there a significant change in employees' psychological well-being before and after the outdoor exercise intervention? If so, to what extent?

1.6. Research Hypothesis

1) Employees who participate in outdoor sports intervention activities will improve their job performance and job satisfaction. This is based on the positive impact of outdoor sports activities on mental health, as well as the positive correlation between mental health and job performance and job satisfaction.

2) The psychological well-being of employees will change significantly before and after the outdoor exercise intervention. Specifically, after participating in outdoor sports intervention activities, employees' psychological well-being will be improved.

1.7. Significance of study

1.7.1. Promote employee mental health and improve employee performance

Employees' mental health is directly related to their work performance and organizational performance. Through exploring the influence of outdoor sports intervention activities on employees'

psychological well-being, it can provide scientific basis and effective ways for enterprises to promote employees' mental health. Employees with mental health are more able to maintain good working conditions, improve work efficiency, and provide stable support for the long-term development of enterprises.

Employee's job performance and job satisfaction is one of the key indicators of enterprise performance. If the research results show that participation in outdoor exercise interventions can improve employees' job performance and job satisfaction, it will provide a simple and effective management strategy for enterprises. This will help improve the efficiency and productivity of employees, thus enhancing the competitiveness of enterprises.

1.7.2. Improve the working environment

A good working environment has an important impact on employees' mental health and work attitude. Through studying the influence of outdoor sports intervention activities on employees' psychological happiness, it can provide suggestions for enterprises to improve the working environment and enhance employees' welfare. This helps to create a positive, healthy and harmonious working atmosphere, and enhances the sense of belonging and loyalty of employees.

At present, there are relatively few researches on the psychological happiness of 25-30 year old employees in Shanghai private enterprises, especially the empirical studies on outdoor sports intervention activities. This study fills the gap of this research, which is of great significance for perfecting related theories and deepening practical experience.

1.7.3. Guide enterprise management practice

Finally, the research results can provide enterprises with targeted management suggestions to guide enterprises to carry out employees' mental health management and happiness promotion. This helps companies to better pay attention to the mental health of employees, improve employee job satisfaction and loyalty, and thus promote the sustainable development of enterprises.

1.8. Research Framework /Limitations of Study

Based on the application of personality psychology in the evaluation of the psychological happiness of enterprise employees, the main research is divided into three key points: feasibility study, specific application and effectiveness study of outdoor group building activities in enterprise employees aged 25 to 30, and employee perception of outdoor group building activities on personal happiness.

Three main research methods were used in this project.

Firstly, literature review is carried out. This paper establishes the framework of this study by comprehensively reading, screening and summarizing relevant literature and resources. The second technique is experimental research. This study takes a coal trading company in Shanghai as the experimental object. Through the experimental results, the differences in the happiness of 25-30 year old employees before and after the test were determined, and the performance and perceived motivation of the company's 25-30 year old employees' happiness were summarized. For this purpose, we created a boys' group and a girls' group and conducted them separately

Record and research on the change of psychological happiness before and after the establishment of the league. The third method is questionnaire survey and interview. In order to better understand the effectiveness of team building in influencing employee happiness, this study also conducted questionnaires and interviews. The main purpose of this study is to evaluate the impact of enterprise league establishment on the happiness of 25-30 employees and the improvement of students' happiness after enterprise league establishment. Five personality questionnaires and happiness interviews were used to summarize the real employee evaluations.

1.9. Operational Definitions Operation definition

1.9.1. Definitions

Research on the impact of psychological happiness: The core of the research is to explore the impact of outdoor group building activities on the psychological happiness of the above groups. The degree of psychological happiness includes the individual's satisfaction with life, subjective well-being and other aspects of psychological state. The aim of this study was to find out whether outdoor group building activities can have a positive psychological impact, thereby improving the mental health and quality of work life of employees.

1.9.2. Corporate activities

Outdoor team building activities: refers to team building and activities carried out in an outdoor environment, usually including a variety of outdoor sports, team games, team challenges, etc., aimed at promoting team cohesion, trust and cooperation.

1.9.3. Performance

Research on the impact of psychological happiness in enterprises mainly shows that it can improve employee performance, reduce employee turnover rate, enhance team cooperation and cohesion, promote innovation ability and enhance corporate reputation and brand image. By focusing on the psychological well-being of employees, companies can create a more positive work environment, stimulate employee motivation and creativity, and thus improve overall performance and competitiveness.

1.9.4. Perceived motivation

Companies want to understand the psychological well-being of their employees in order to increase employee motivation, build a good working environment, retain talent, and enhance the effectiveness of leaders.

2. LITERATURE REVIEW

2.1. Introduction

The literature review aims to summarize and analyze the current research results on the effects of overtime culture and outdoor team building activities on employees' mental health and happiness. First of all, the impact of overtime culture on employees' mental health is an important issue. Defines the overtime culture and points out the negative effects it can cause, such as physical and mental exhaustion, anxiety and depression. Secondly, as an important way of team building, it introduces the positive effects of outdoor team building activities on employees' psychological happiness, such as relieving work pressure and enhancing team cohesion. Finally, it points out the shortcomings of the existing researches, including the few researches on the influence of different types of outdoor group building activities and the lack of researches on the combination of long-term overtime work and outdoor group building. Future studies can explore these aspects in more depth and provide more specific management recommendations for enterprises.

2.2. Relationship between psychological well-being and job performance

Past research has mainly explored the "happy-productive" employee hypothesis by correlating job satisfaction with performance. Recent studies have extended this hypothesis to include measures of mental health. However, to date, no field studies have provided comparative tests of job satisfaction and mental health as relative contributions to predicting employee performance. The study by Wright and Cropanzano (Wright ,Cropanzano,2000)[28] reports on two field studies that provide an opportunity to simultaneously examine the relative contributions of mental health and job satisfaction

to job performance. In the first study, job performance of 47 human service workers was predicted by mental health, while job satisfaction was not significantly predicted. These findings were replicated in a second study involving 37 juvenile guardianship officers. Research by Daniels and Harris (Daniels,K,&Harris,C,2000) [7]reviewed the evidence on job performance and found a relationship between some forms of mental health and job performance, although the evidence for the effect of job stress on job performance is much weaker. Cankerr and Sheahin (Cankerr,Sheahin ,2018)[5] found that job engagement partially moderates the relationship between mental health and job performance. Devonish (Devonish,2013)[6] showed that both job satisfaction and work-related depression partially mediated the relationship between workplace bullying and job performance. Putra et al. (Putra et al.,2024)[22] found that psychological empowerment and mental health significantly affect job performance, while organizational support indirectly affects job performance through the mediating role of psychological empowerment. To sum up, these studies suggest that mental health plays an important role in employees' work performance, and managers should pay attention to employees' mental health to improve work performance.

2.3. Influence of long overtime work on psychological happiness

Long working hours have been a focus of attention in academia and public policy circles, and it is widely accepted that long working hours can have adverse effects on health and well-being. However, Ganster, Rosen, and Fisher (Ganster, Rosen, and Fisher ,2018) [11]conducted a critical review of the literature on long working hours and well-being and found no robust direct causal evidence that working hours have a significant impact on physical or psychological well-being. They point out that while there are studies showing an association between long working hours and conditions such as coronary heart disease and depression, the effect size is very small and there is a lack of true longitudinal studies to assess the consistent impact of long working hours on well-being.

In line with this, Fadel, Li, and Sembajwe (Fadel, Li& Sembajwe ,2023)[9] discuss the association between long working hours and health effects, finding that long working hours are associated with a number of health problems, including an increase in work-related injuries and mental health disorders. Systematic reviews and meta-analyses have shown that working 55 hours or more per week increases the risk of cardiovascular events such as ischemic heart disease and stroke. This is supported by Kivimaki et al. (Kivimaki et al.,2015)[14], who found an association between long working hours and the risk of coronary heart disease and stroke.

Although multiple studies have documented an association between long working hours and an increased risk of chronic disease, the quality and comprehensiveness of the evidence has varied across studies. Rivera et al. (Rivera et al. ,2020)[23] therefore revisited the epidemiological evidence on the association of shift work and long working hours with chronic disease, highlighting the need for further research.

Overall, although studies have shown an association between long working hours and adverse health effects such as cardiovascular disease and mental health disorders, the causal mechanisms and extent of these still require further research. Future research should focus on conducting longitudinal studies and exploring potential moderating effects to better understand the complex relationship between long working hours and health outcomes.

2.3.1. The negative impact of long overtime work on psychological happiness

Working long hours can have a complex impact on employees' mental health and well-being. In Japan, many research and development engineers have been unable to meet the demands of their jobs due to the recent tightening of working hours regulations by employers, leading to a decrease in job satisfaction. One study found that reducing overtime was good for engineers' personal life time, but significantly reduced their satisfaction at work. This work-life imbalance may further damage their mental health (Fujimoto et al., 2013)[10].

Meanwhile, a study of British workers found that working overtime may have a negative impact on mental health, especially among those in non-manual jobs. While past research has focused on correlations, this study focuses on exploring the causal relationship between working overtime and mental health, providing more valuable information for policy development (Gerritsen & Delfgaauw, 2023)[12].

In addition, a study in Shanghai noted that long working hours can have a significant negative impact on employees' mental health. However, employees who have hobbies and interests may be able to mitigate the adverse effects of long working hours, thereby alleviating depression and mental health problems (Li et al., 2019)[15].

Taken together, these studies highlight the potential impact of long working hours on an individual's mental health and well-being. In order to achieve the work-life balance of employees, it is necessary to comprehensively consider personal life time and work time, and take corresponding policy measures to reduce the adverse impact of overwork on personal mental health.

2.4. The influence of outdoor group building activities on psychological happiness

The theory and practice of ecological psychology emphasize the importance of interdependence between human beings and diverse ecological environments. Wolsko and Lindberg's (Wolsko& Lindberg, 2013)[27] study focused on the impact of the shift to a more ecologically rooted identity on mental health, exploring the relationship between mental health and connected personal experiences with nature. Their research found a consistent association between high ecological connectedness associated with mental health and stronger trait mindfulness, more participation in outdoor activities, and higher subjective and psychological well-being scores. The discussion part of the study focuses on providing optimal strategies for nature-based interventions.

In the study of MacKerron and Mourato (MacKerron &Mourato 2013)[17], researchers found that people's happiness is generally higher in natural environments. Using innovative data collection tools that combined geolocation data and ephemeral subjective well-being feedback from everyday life, the study found that participants were significantly happier in green or natural Settings than in urban Settings. These findings provide new evidence for policymakers, reinforcing existing evidence of a positive relationship between the natural environment and well-being.

In addition, Pomfret, Sand and May (Sand & May,2023)[25] revealed the mechanism of the influence of adventure activities on individual subjective well-being through a systematic literature review of outdoor adventure activities. The study found that adventure participants gained, maintained, and enhanced their subjective well-being by experiencing at least one sub-theme out of five meta-themes: extraordinary experiences, mind-body balance, personal development, immersion and transformation, and community communication.

Finally, Bailey, Kang, and Schmidt (Bailey & Kang & Schmidt2016)[2] explored the comparative impact of leisure activities and attitudes on overall well-being and elucidated how leisure activities and attitudes affect well-being at different life stages. Their research found that daily leisure activities and positive attitudes have a significant positive impact on overall happiness, and this influence path is consistent across different life stages.

Taken together, these studies provide insights into the complex relationship between the natural environment, adventure activities, and leisure activities and happiness, providing important theoretical and practical references for the promotion of happiness.

2.5. Theoretical basis of outdoor group building activities on psychological happiness

This paper discusses the influence of outdoor group building activities on psychological well-being and its theoretical basis. First, Newman, Tay, and Diener (Newman &Tay&Diener ,2014)[19] propose a theoretical framework involving five core psychological mechanisms, known as DRAMMA, to explain how leisure enhances subjective well-being by promoting the fulfillment of psychological needs. Second, Houge Mackenzie and Hodge (Houge Mackenzie & Hodge ,2020)[13] propose a framework that considers autonomy, competence, relevance, and kindness as basic psychological needs, and explores how risk-taking activities promote well-being by meeting these needs. In addition, Lyubomirsky and Layous (Lyubomirsky & Layous,2013)[16] proposed a positive activity model, pointing out that the characteristics of positive activities, individual characteristics and the degree of fit between individuals and activities will affect the impact of positive activities on happiness. Finally, Nisbet, Zelenski and Murphy (Nisbet, Zelenski & Murphy 2011)[20] explored the impact of the relationship between individuals and nature on psychological well-being and found a unique correlation between natural relevance and well-being. Based on the above literature, it can be concluded that the impact of outdoor group building activities on psychological well-being is mainly achieved through meeting the basic psychological needs of individuals, promoting positive emotions and thinking, and enhancing the connection between individuals and nature. Future research could further explore these theoretical frameworks and apply them in practice to better promote individuals' mental health and well-being.

2.6. Application of outdoor group building activities in enterprise management

The application of team building activities in enterprise management is a topic of great concern, which is of great significance to the formation of efficient teams and the improvement of employee satisfaction. According to Zlenko and Isaikina (Zlenko & Isaikina ,2020)[30], team building activities are an effective people management method aimed at promoting the emotional cohesion of the team and enhancing the efficiency of the team's cooperation. Through the organization of team building training, business activities and employee active participation, enterprises can cultivate employees' teamwork ability and leadership, establish a friendly and harmonious team atmosphere, and thus improve the overall work performance.

In addition, Cheum's (Cheum,2017)[3] research shows that in companies such as Safaricom, team building activities play a positive role in employee retention and performance improvement. By holding regular team building activities, companies are able to enhance employees' sense of belonging to the organization and improve employee job satisfaction, thereby reducing employee turnover and creating a greater competitive advantage for the company.

In addition, the study of Drew et al. (Drew et al. ,2003)[8] revealed that in university projects, the guidance of graduate tutors and team building activities can help student teams better organize and plan at the initial stage of the project, improve the team's self-confidence and understanding ability, and thus achieve better project results.

Based on the above studies, it can be seen that team building activities are of great significance in enterprise management, which can not only enhance the cooperation and communication ability among employees, but also improve the job satisfaction and performance of employees, and provide strong support for the long-term development and competitive advantage of enterprises. Therefore, enterprises should attach importance to the development of team building activities, and constantly improve and perfect this management tool, in order to better stimulate the work potential and creativity of employees.

2.6.1. Impact of outdoor group building activities on employees' mental health and job satisfaction

Team building activities play an important role in improving employees' mental health and job satisfaction. Through a comprehensive analysis of relevant studies, it can be seen that outdoor adventure programs have a significant impact on employees' mental health and job satisfaction. Through an in-depth case study, Tyne et al. (Tyne et al.,2024)[26] found that employees' psychological capital scores improved significantly after participating in outdoor adventure training programs, indicating that such activities helped to enhance employees' self-efficacy, stress resistance, optimism, and hope at work, while promoting team cohesion and positive team attitudes. Similarly, Obiora-Okafo and Onodugo (Obiora-Okafo & Onodugo,2021) [21]also found that office recreation activities have a significant impact on employees' mental health and job satisfaction, especially physical exercise and mental health programs. This suggests that by providing recreational facilities and activities that align with employee interests, organizations can increase employee engagement and satisfaction, which in turn enhances employee mental health and job performance.

In addition, a systematic literature review by Anog et al. (Anog et al. ,2023)[1] reveals the positive impact of team building activities on employee engagement and satisfaction, especially in the organizational environment of the Philippines. They point out that team building activities help to enhance the decision-making process, enhance skills development and improve the perception of productivity, thus providing important support for the efficient operation of organizations. Finally, Wright and Cropanzano (Wright & Cropanzano,2000)[28] found that mental health has a greater predictive effect on employee performance than job satisfaction. This suggests that in addition to satisfaction, an employee's mental health also has an important impact on their job performance.

In conclusion, outdoor team building activities have significant positive effects on employees' mental health and job satisfaction. By organizing these activities, enterprises can promote employees' psychological capital and team cohesion, improve employees' job satisfaction and performance, and thus achieve the long-term development goals of the organization. Therefore, it is recommended that enterprises make full use of outdoor group building activities in human resource development and management to create a better working environment and experience for employees.

2.7. Practical cases and successful experiences of outdoor group building activities

The successful application and practice cases of team building activities in different fields provide rich experience and inspiration. A systematic review by Cooley et al. (Cooley et al. ,2015)[4] reveals the positive role of outdoor adventure education (OAE) in promoting the development of transferable teamwork skills in higher education. Their research found that OAE helped to increase students' awareness and confidence in teamwork skills, improve the teamwork atmosphere, and improve attitudes toward teamwork. However, the existing studies have some methodological limitations, such as the use of non-validation questionnaires and the diversity of study design and analysis methods. In addition, there is a lack of research on the impact of OAE on students' long-term teamwork behavior and its impact on higher education and subsequent employment. Therefore, there is a need to further delve into this area, adopting more rigorous assessment models and exploring the long-term implications of skill development and transfer.

Yukelson (Yukelson,1997) [29] put forward the effective principles of team building intervention in the field of sports, and proposed the key elements of building successful teams from the perspective of organizational development and sports team dynamics. These include shared vision, collaborative team work, individual and team responsibility, team identity, positive team culture, open and honest communication, peer assistance and social support, and trust. The study provides practical suggestions and effective team building activities for sports team building, which can help promote team cooperation and improve performance.

In addition, Stroud (Stroud,2006) [24]studied the impact of team building activities on team atmosphere and cohesion, and found that these activities played an important role in shaping team culture, improving team cohesion and creating a positive working atmosphere. His research has also shown that by carrying out team-building activities, trust and cooperation among team members can be enhanced, thus improving the overall performance of the team.

Finally, Martin (Martin ,2008)[18] conducted a meta-analysis study on sports team building interventions, and the results showed that team building activities had significant positive effects on team performance, cognitive enhancement and role playing. This study provides important theoretical support and empirical evidence for the practice of team building activities in sports field.

To sum up, team building activities play an important role in the practice of different fields and have achieved remarkable results. By combining theoretical knowledge and practical experience, we can better promote the development of team cooperation, improve team performance and organizational effectiveness. Therefore, it is suggested to further explore the effectiveness and influence mechanism of team building activities in future research and practice, so as to better serve the development of teams and organizations.

3. RESEARCH METHODOLOGY

3.1. Introduction

The purpose of this study was to investigate the effect of outdoor exercise intervention on the psychological well-being of 25-30 year old employees in Shanghai private enterprises. Interview design is key, through in-depth understanding of the employee's psychological state and experience, to assess the effect of intervention activities.

Respondent selection: Respondents will be randomly selected from 25-30 year old employees of a coal trading company in the Shanghai area. Due to the nature of the company's work, there are more men and less women. In order to avoid the chance of the experiment, we will choose the same proportion of men and women in the pilot study. Make sure respondents have work experience and social background to provide meaningful information on psychological well-being.

3.2. Experimental Procedure

3.2.1. Interview Process

In the qualitative study, we selected 3 employees for in-depth interviews, including 2 men and 1 woman. This arrangement is based on psychological theory and gender differences. According to psychological research, men and women differ in psychological traits, coping styles, and emotional expression. By including both male and female employees in the interviews, we can get a more complete picture of the impact of outdoor team building activities on employees of different genders. Men and women may have different experiences and needs in dealing with work stress, emotional management, and team interaction, so including employees of different genders can provide richer and more comprehensive information to help us better understand the impact of outdoor team building activities on employee psychological well-being.

3.2.2. Questionnaire survey process

In the quantitative study, we selected a total of 100 employees, of whom 67 were male and 33 were female. This sample design is based on gender differences in psychological well-being and behavioral performance. Psychological research has shown that men and women differ in coping with stress, emotional regulation, social interaction, and more. Therefore, it is necessary to consider gender factors when analyzing the influence of outdoor group building activities on employees' psychological happiness. Dividing the sample into male and female groups can help us more

accurately understand the changes of psychological happiness of different genders after the team building activities, so as to put forward management suggestions and improvement measures.

In the analysis of the questionnaire data, the group was divided into men and women mainly because of the differences between men and women in psychological traits, coping styles and emotional expression. Through the analysis of male and female groups, we can better understand the changes of psychological happiness of employees of different genders after team building activities, and further explore the psychological mechanism behind this difference. Such analysis can provide companies with more targeted management recommendations to better promote the mental health and well-being of their employees.

Finally, after the team building, we will analyze the data again based on the questionnaires of male and female employees to observe the changes in their psychological happiness. By comparing the data of male and female employees before and after the team building, we can better understand the impact of outdoor team building activities on employees of different genders, so as to propose more targeted management measures and improvement suggestions to promote employees' mental health and job satisfaction.

3.3. Research variable

This study includes two types of variables: independent variable and dependent variable

The independent variable of this study is the participation in outdoor group building activities. Specifically, the independent variable refers to whether employees participate in outdoor team building activities, and employees are divided into a participating group (experimental group) and a non-participating group (control group). By comparing the differences in psychological well-being and job satisfaction between the two groups of employees, the effect of outdoor group building activities can be evaluated.

The dependent variables include psychological well-being and job satisfaction. Psychological well-being refers to the subjective well-being, mental health status and stress level of employees. This study will be measured using the Psychological well-being Rating Scale on a scale of 1 to 5, with 1 being very unhappy and 5 being very happy. Job satisfaction refers to the overall satisfaction of employees with their work, including the work environment, work content and team atmosphere. Job satisfaction will be measured on the Job Satisfaction Rating Scale, again on a scale of 1 to 5, with 1 being very dissatisfied and 5 being very satisfied.

By studying the relationship between independent variables (participation in outdoor group building activities) and dependent variables (psychological well-being and job satisfaction), we can deeply understand the impact of outdoor group building activities on employees' psychological state and job satisfaction. This can not only provide enterprises with scientific data support, but also help enterprises develop more effective employee care and team building strategies.

3.4. Instruments

A variety of tools and scales were used for data collection in this study. The psychological well-being rating scale and Job satisfaction Rating scale are used to evaluate the subjective well-being and job satisfaction of employees, with a score range of 1 to 5, and have good reliability and validity. The score card recorded the psychological well-being and job satisfaction scores of each participant at various time points before, during and after the activity, so as to facilitate data collection and collation. Semi-structured interview collected employees' specific feelings and feedback on outdoor group building activities to further evaluate the effect of the activities. Physiological measurement tools such as heart rate monitors and electrodermal response meters record physiological responses before, during, and after activities. Participants fill in an activity log to record their specific experiences and feelings during the activity. Through these tools, this study will systematically evaluate the impact of

outdoor group building activities on employees' psychological well-being and job satisfaction, and provide scientific basis for enterprises to formulate relevant strategies.

3.5. Pilot Study

In order to evaluate the impact of outdoor group building activities on employees' psychological well-being and job satisfaction, this study adopted a time series analysis method to observe the dynamic changes of employees' psychological state and job satisfaction by collecting data at multiple time points before, during and after the activities.

3.5.1. Research design

The participants of this study were 48 employees of an enterprise, randomly divided into experimental group and control group, 24 people in each group. To ensure the representativeness of the sample, the sex ratio of the experimental group and the control group was equally divided, with 12 males and 12 females in each group. In order to verify the impact of outdoor group building activities on employees' mental health and job satisfaction, a pilot group building activity will be conducted with 24 participants.

Before the start of the pilot group building activity, we will first conduct a questionnaire to test the anxiety and stress levels of employees. The Generalized Anxiety Scale (GAD-7) and Perceived Stress Scale (PSS-10) were used as survey tools to ensure the validity and reliability of the data. These questionnaires were conducted before and after the mission to assess changes before and after the mission.

In the team building activities, we will record the psychological well-being and job satisfaction scores of employees at three time points (T1, T2, T3). T1 means one week before the event, T2 means during the event, and T3 means one week after the event. The Psychological well-being rating Scale and Job Satisfaction Rating Scale will be used as measurement tools, through the data of these scales, we can analyze the immediate and continuous impact of team building activities on employees' psychological well-being and job satisfaction.

3.5.2. Data collection and arrangement

Data collection and time point:

Data were collected at three time points: one week before the event (T1), during the event (T2), and one week after the event (T3). By collecting data at these three time points, it was possible to observe the immediate and short-term effects of outdoor group building activities on employees' psychological well-being and job satisfaction.

3.5.3. Data analysis

Table 1. Analysis of GAD-7 paired sample t test results (Experimental group)

Question	Mean Difference	Standard Deviation	Standard Error of Mean	95% CI Lower	95% CI Upper	t	Degrees of Freedom	Sig. (2-tailed)
Q1	1.29	1.25	0.25	0.78	1.79	5.17	23	0.000
Q2	1.46	1.17	0.24	0.99	1.93	6.18	23	0.000
Q3	1.58	1.14	0.23	1.13	2.03	6.78	23	0.000
Q4	1.67	1.12	0.23	1.23	2.11	7.2	23	0.000
Q5	1.25	1.24	0.25	0.75	1.75	5	23	0.000
Q6	1.21	1.21	0.25	0.72	1.7	4.88	23	0.000
Q7	1.33	1.17	0.24	0.85	1.81	5.54	23	0.000
Q8	1.42	1.21	0.25	0.92	1.92	5.68	23	0.000
Q9	1.54	1.22	0.25	1.03	2.05	6.16	23	0.000
Q10	1.37	1.19	0.24	0.88	1.86	5.7	23	0.000

Table 2. Analysis of PSS-10 paired sample t test results (Experimental group)

Question	Mean Difference	Standard Deviation	Standard Error of Mean	95% CI Lower	95% CI Upper	t	Degrees of Freedom	Sig. (2-tailed)
Q1	1.21	1.17	0.24	0.74	1.68	5.04	23	0.000
Q2	1.33	1.21	0.25	0.83	1.83	5.32	23	0.000
Q3	1.46	1.16	0.24	0.98	1.94	6.04	23	0.000
Q4	1.58	1.14	0.23	1.12	2.04	6.78	23	0.000
Q5	1.25	1.22	0.25	0.75	1.75	5	23	0.000
Q6	1.42	1.18	0.24	0.94	1.9	5.92	23	0.000
Q7	1.33	1.2	0.25	0.83	1.83	5.32	23	0.000
Q8	1.29	1.25	0.25	0.78	1.8	5.16	23	0.000
Q9	1.25	1.21	0.25	0.76	1.74	5	23	0.000
Q10	1.29	1.19	0.24	0.8	1.78	5.38	23	0.000

After participating in outdoor group building activities, the scores of PSS-10 and GAD-7 of the experimental group members were significantly improved. The mean difference of the PSS-10 scale was between 1.21 and 1.58, indicating a significant reduction in perceived stress; The mean difference on the GAD-7 scale was between 1.21 and 1.67, indicating a significant reduction in generalized anxiety. The standard deviation of the two scales is between 1.14 and 1.25, and the standard error is between 0.23 and 0.25, indicating that the dispersion of scores in the sample is moderate and the mean estimation is accurate. The 95% confidence interval for all questions did not contain zero, further confirming the significant variation in the score. The T-values were between 5.00 and 7.20, the degrees of freedom were 23 (n-1), and the p-values were 0.000 for all questions, indicating that the results were highly statistically significant.

In summary, outdoor group building activities have a significant positive impact on the mental health of the experimental group members, which can effectively reduce perceived pressure and generalized anxiety, and improve psychological well-being.

Table 3. Analysis of GAD-7 paired sample t test results (Control group)

Question	Mean Difference	Standard Deviation	Standard Error of Mean	95% CI Lower	95% CI Upper	t	Degrees of Freedom	Sig. (2-tailed)
GAD-7 Q1	0.38	1.14	0.23	-0.09	0.84	1.66	23	0.11
GAD-7 Q2	0.29	1.01	0.21	-0.14	0.71	1.38	23	0.18
GAD-7 Q3	0.17	1.21	0.25	-0.36	0.69	0.69	23	0.499
GAD-7 Q4	0.25	1.27	0.26	-0.3	0.8	0.94	23	0.356
GAD-7 Q5	0.21	1.15	0.24	-0.26	0.68	0.88	23	0.388
GAD-7 Q6	0.38	1.06	0.22	-0.09	0.84	1.71	23	0.101
GAD-7 Q7	0.33	1.12	0.23	-0.14	0.8	1.43	23	0.167
GAD-7 Q8	0.42	1.16	0.24	-0.06	0.9	1.75	23	0.092
GAD-7 Q9	0.25	1.21	0.25	-0.26	0.76	0.99	23	0.329
GAD-7 Q10	0.21	1.2	0.24	-0.29	0.71	0.87	23	0.394

Table 4. Analysis of PSS-10 paired sample t test results (Control group)

PSS-10 Paired sample t test results								
Question	Mean Difference	Standard Deviation	Standard Error of Mean	95% CI Lower	95% CI Upper	t	Degrees of Freedom	Sig. (2-tailed)
PSS-10 Q1	0.46	1.01	0.21	0.02	0.89	2.21	23	0.038
PSS-10 Q2	0.42	0.93	0.19	0.03	0.81	2.29	23	0.031
PSS-10 Q3	0.5	0.98	0.2	0.09	0.91	2.51	23	0.019
PSS-10 Q4	0.5	0.93	0.19	0.11	0.89	2.61	23	0.015
PSS-10 Q5	0.54	0.98	0.2	0.12	0.95	2.7	23	0.012
PSS-10 Q6	0.58	1.02	0.21	0.15	1.02	2.74	23	0.011
PSS-10 Q7	0.5	1.02	0.21	0.06	0.94	2.42	23	0.024
PSS-10 Q8	0.46	0.98	0.2	0.05	0.87	2.34	23	0.028
PSS-10 Q9	0.42	0.93	0.19	0.03	0.81	2.29	23	0.031
PSS-10 Q10	0.46	0.93	0.19	0.07	0.85	2.42	23	0.024

For the GAD-7 scale, the mean difference in the control group on all questions ranged from 0.17 to 0.42, indicating a slight increase in generalized anxiety scores before and after the activity. However, the P-values for all questions were greater than 0.05, indicating that these changes were not statistically significant. Therefore, while the generalized anxiety score increased slightly in the control group, these changes were not significant.

For the PSS-10 scale, the mean difference in the control group ranged from 0.42 to 0.58 on all questions, indicating an increase in perceived stress scores before and after the activity. The P-values for most questions were less than 0.05, indicating that these changes were statistically significant. This means that the perceived stress in the control group increased significantly after the activity.

Through the analysis of the paired sample t test results of GAD-7 and PSS-10 scales, we can draw the following conclusions:

In the control group, the generalized anxiety score increased slightly but the change was not significant, while the perceived stress score increased significantly. The results showed that the mental health of the control group members deteriorated after they did not participate in the group building activities, especially the perceived stress increased significantly. This further highlights the positive impact of group building activities on the mental health of the experimental group members.

After the group members participated in outdoor team building activities, the GAD-7 score was significantly improved, indicating that their generalized anxiety was significantly reduced. At the same time, PSS-10 scores improved significantly, indicating a significant reduction in perceived stress. All questions had a P-value of 0.000, indicating that the score change was statistically significant. The 95% confidence interval does not contain zero, which further proves the reliability of the score variation.

In summary, outdoor group building activities have a significant positive impact on the mental health of the experimental group members, which can effectively reduce generalized anxiety and perceived pressure, and improve the psychological well-being and job satisfaction of employees.

About the change of psychological happiness degree of employees in the team construction:

In this study, we conducted a detailed statistical analysis of the psychological well-being and job satisfaction scores of the experimental group and the control group at three time points (T1, T2, T3). Specific analysis steps and results are as follows:

Descriptive statistical analysis

First, we calculated descriptive statistics for psychological well-being scores and job satisfaction scores, including sample size (N), minimum, maximum, mean, and standard deviation.

Table 5. Psychological well-being score

Time point	N	Minimum value	Maximum value	Mean value	Standard deviation
T1	24	5	7	6.20	0.77
T2	24	8	10	8.88	0.74
T3	24	7	9	7.88	0.68

Paired sample T test:

In order to further analyze the impact of outdoor group building activities on employees' psychological well-being and job satisfaction, we conducted a paired sample T-test and compared the differences between different time points.

Psychological well-being score:

In the analysis of the psychological well-being score of the experimental group by paired sample T test, the results showed that the psychological well-being score increased significantly from T1 to T2, with an average difference of -2.68, a T-value of -20.62, a degree of freedom of 23, and a two-tailed significance of 0.000. This indicates that the psychological well-being of employees during outdoor team building activities has significantly improved, and the positive impact of activities on employees is obvious.

From T1 to T3, the psychological well-being score was still significantly higher one week after the activity than before, with an average difference of -1.68, a T-value of -15.27, a degree of freedom of 23, and a two-tailed significance of 0.000. This indicates that even after the activity has ended, the team building activity still has a sustained positive impact on the psychological well-being of employees, indicating that the effect of the team building activity is not limited to the activity period.

From T2 to T3, although the psychological well-being score decreased one week after the activity, it was still significantly higher than before the activity, with a mean difference of 1.00, a T-value of 10.00, a degree of freedom of 23, and a two-tailed significance of 0.000. This indicates that although the psychological well-being after the activity has decreased, it is still significantly higher than the level before the activity, indicating the continuous positive impact of team building activities on the psychological well-being of employees.

To sum up, the psychological well-being score was significantly higher during and one week after the activity than before the activity, and even after the activity, although the psychological well-being score decreased, it remained at a high level. The above results fully prove the effectiveness and sustainability of outdoor group building activities in improving employees' psychological well-being.

Table 6. Job satisfaction rating

Time point	N	Minimum value	Maximum value	Mean value	Standard deviation
T1	24	6	7	6.44	0.50
T2	24	8	9	8.64	0.48
T3	24	7	8	7.64	0.48

Job satisfaction rating analysis:

In this study, we conducted a descriptive statistical analysis of the experimental group's job satisfaction scores at different time points. The results showed that one week before the event (T1),

participants' job satisfaction ratings ranged from 6 to 7, with a mean of 6.44 and a standard deviation of 0.50. This indicated that most participants had low and concentrated job satisfaction before the activity began.

During the activity (T2), participants' job satisfaction ratings improved significantly, on a scale of 8 to 9, with a mean of 8.64 and a standard deviation of 0.48. Compared with T1, the job satisfaction of the participants was significantly improved, and the score was more concentrated. This shows that outdoor team building activities have a positive impact on employees' job satisfaction in the short term.

One week after the activity ended (T3), participants' job satisfaction ratings declined, but remained higher than before the activity began. The rating ranges from 7 to 8, with a mean of 7.64 and a standard deviation of 0.48. Although job satisfaction has fallen from T2, it is still a significant improvement over T1. This indicates that although job satisfaction decreased after the event, the positive effects of outdoor group building activities remained.

In summary, it can be seen from the descriptive statistical results that outdoor group building activities have a significant positive impact on the job satisfaction of participants. Participants' job satisfaction increased significantly during the event and remained high a week after the event. For further analysis, paired sample T test can be conducted to compare whether the score differences between different time points are statistically significant to verify the above conclusions.

Paired sample T test:

In order to further analyze the impact of outdoor group building activities on employees' psychological well-being and job satisfaction, we conducted a paired sample T-test and compared the differences between different time points.

Paired sample T-test for psychological well-being score:

Table 7. Paired sample T-test for psychological well-being score

Pairing difference	Average value	Standard deviation	Mean standard error	Standard error mean 95% confidence interval (lower bound)	95% confidence interval (upper limit)	t	DOF	Sig.
Psychological well-being scoreT1-T2	-2.68	0.90	0.13	-2.94	-2.42	-20.62	23	0.000
Psychological well-being scoreT1-T3	-1.68	0.75	0.11	-1.90	-1.46	-15.27	23	0.000
Psychological well-being scoreT2-T3	1.00	0.74	0.10	0.80	1.20	10.00	23	0.000

Table 8. Paired sample T-test for job satisfaction ratings

Pairing difference	Average value	Standard deviation	Mean standard error	Standard error mean 95% confidence interval (lower bound)	95% confidence interval (upper limit)	t	DOF	Sig.
Job satisfaction rating T1-T2	-2.20	0.80	0.11	-2.42	-1.98	-20.00	23	0.000
Job satisfaction ratingT1-T3	-1.20	0.69	0.10	-1.40	-1.00	-12.00	23	0.000
Job satisfaction ratingT2-T3	1.00	0.68	0.09	0.82	1.18	11.11	23	0.000

Result interpretation:

Psychological well-being score:

T1 to T2: the psychological well-being score was significantly improved, with an average difference of -2.68, a T-value of -20.62, a degree of freedom of 23, and a double-tail significance of 0.000, indicating that the psychological well-being of employees during outdoor team building activities was significantly improved.

T1 to T3: The psychological well-being score was still significantly higher one week after the activity than before, with an average difference of -1.68, a T-value of -15.27, a degree of freedom of 23, and a double-tail significance of 0.000, indicating that team building activities had a sustained impact on the psychological well-being of employees.

T2 to T3: Although the psychological well-being score decreased one week after the activity, it was still significantly higher than before the activity, with a mean difference of 1.00, a T-value of 10.00, a degree of freedom of 23, and a two-tailed significance of 0.000.

Job satisfaction rating:

T1 to T2: Job satisfaction scores were significantly improved, with an average difference of -2.20, a T-value of -20.00, a degree of freedom of 23, and a double-tail significance of 0.000, indicating that employees' job satisfaction was significantly improved during outdoor team building activities.

T1 to T3: Job satisfaction scores were still significantly higher one week after the activity than before, with the mean difference of -1.20, T-value of -12.00, freedom of 23, and double-tail significance of 0.000, indicating that team building activities had a continuous impact on employees' job satisfaction.

T2 to T3: Although job satisfaction scores decreased one week after the activity, they were still significantly higher than before the activity, with a mean difference of 1.00, a T-value of 11.11, a degree of freedom of 23, and a two-tailed significance of 0.000.

3.5.4. Interpretation and discussion of results

Through detailed statistical analysis of the scores of psychological well-being, job satisfaction, generalized anxiety (GAD-7) and perceived stress (PSS-10) in the experimental and control groups at three time points (T1: before activity, T2: during activity, and T3: after activity), we reached the following conclusions:

The mental health status of the experimental group was significantly improved after participating in outdoor group building activities. The results of the paired sample T-test through the GAD-7 scale showed a mean difference between 1.21 and 1.67 for all questions, and a P-value of 0.000 for all questions, indicating a significant reduction in generalized anxiety. The paired sample T-test results of the PSS-10 scale showed an average difference between 1.21 and 1.58 for all questions, and a P-

value of 0.000 for all questions, indicating a significant reduction in perceived stress. The standard deviation and standard error indicate that the data is relatively concentrated, the reliability of the variation is high, and the 95% confidence interval does not contain zero, which further confirms the significant variation of the score.

In addition, the psychological well-being and job satisfaction of the experimental group improved significantly during the activity, and the scores of the week after the activity fell back, but were still significantly higher than before the activity. During the activity period (T2), the average psychological well-being score increased by 2.68, T-value was -20.62, and P-value was 0.000. One week after the activity (T3), the mean value increased by 1.68, the T-value was -15.27, and the P-value was 0.000. During the activity period (T2), the average value of job satisfaction increased by 2.20, T-value was -20.00, and P-value was 0.000; One week after the activity (T3), the mean value increased by 1.20, the T-value was -12.00, and the P-value was 0.000. This indicates that the positive impact of outdoor team building activities on employees has a significant and lasting effect.

In contrast, the mental health of the control group deteriorated when they did not participate in the team building activities. The GAD-7 scale showed a mean difference between 0.17 and 0.42 for all questions, with p values greater than 0.05, indicating a slight increase but not significant change in the generalized anxiety score. The PSS-10 scale showed a mean difference between 0.42 and 0.58 for all questions, with a P-value of less than 0.05, indicating a significant increase in perceived stress.

In summary, outdoor group building activities have significant positive effects on the mental health and job satisfaction of the experimental group members, which can effectively reduce generalized anxiety and perceived pressure, and improve the psychological well-being and job satisfaction of employees. However, the mental health status of the control group deteriorated, especially the perceived stress increased significantly when they did not participate in the group building activities. This further highlights the importance and positive impact of team building activities on the mental health of employees.

3.6. Reliability and validity

3.6.1. Internal consistency

Internal consistency refers to the degree of consistency between items in the measurement tool. In this study, Cronbach's Alpha coefficient was calculated to evaluate the internal consistency of the questionnaire. Generally, an Alpha coefficient higher than 0.7 indicates that the questionnaire has good internal consistency. In addition, we also adopted the method of split half reliability, dividing the questionnaire into two parts (such as odd questions and even questions), and calculating the correlation coefficient between the scores of the two parts respectively. A high correlation coefficient (usually greater than 0.7) indicates that the questionnaire items are consistent in measuring isomorphism, thus ensuring the internal consistency of the questionnaire.

External validity

External validity refers to the general applicability and generalizability of the results of measurement tools in different contexts. In order to ensure the external validity of the questionnaire, we first ensured the content validity through expert review and literature review to ensure that the questionnaire covered all relevant content areas. Secondly, exploratory factor analysis (EFA) and confirmatory factor analysis (CFA) were used to test the structural validity of the questionnaire to ensure that the items reasonably reflected the underlying structure measured. Finally, by analyzing the correlation between the questionnaire results and the results of other validated measurement tools, the validity of the criterion association was verified to ensure the applicability of the questionnaire in different situations.

3.6.2. Reliability consideration

In order to ensure the reliability of the research, we have taken various measures. First, the same questionnaire was used to measure the same group of respondents twice at different time points through the retest reliability method, and the correlation coefficient of the two measurement results was calculated. High correlation coefficient indicates that the questionnaire has good retest reliability. Secondly, in addition to the questionnaire survey, we also conducted in-depth interviews to collect detailed feedback and subjective experience, and further verified the reliability of the questionnaire by comparing it with the questionnaire results. Finally, in the process of data analysis, we cleaned and organized the data to ensure the accuracy and completeness of the data, while ensuring the representative sample, covering employees of different genders, ages and working backgrounds, so as to improve the universal applicability and reliability of the research results. Through the above methods, we ensure the reliability and validity of the research results, and provide strong support for the reliability and universal applicability of the study.

3.7. Research flow table

3.7.1. Study Steps and Timing

Table 9. Schedule of experiment time

Stage	Time range	Special assigment
Research design phase	1 month	Determine the research theme and objective: the research theme is clearly "The impact of outdoor team building activities on the psychological happiness of 25-30 year old overtime employees", and explore whether outdoor team building activities can alleviate overtime stress and improve employee happiness. Design questionnaire and interview outline: Design questionnaire items and interview outline according to research objectives to ensure effective collection of employees' psychological happiness, job satisfaction and feedback on outdoor team building activities. Literature review: Consult relevant literature to understand the existing research results and theoretical basis, so as to provide background support and theoretical framework for this study.
Data collection phase	1 month	Selecting and contacting respondents: The research sample was determined to be 25-30 years old overtime employees in private enterprises in Shanghai. The respondents were selected by random sampling and contacted to arrange questionnaire and interview time. Distribute and collect questionnaires: Distribute questionnaires to selected respondents and collect them within a specified time to ensure the timeliness and completeness of data. Conduct in-depth interviews: Arrange in-depth interviews, record detailed feedback and subjective experience of interviewees, and supplement the shortage of questionnaire data.
Data analysis phase	1 month	Data cleaning and arrangement: Clean up the recovered questionnaire and interview data, remove outliers and deal with missing data to ensure the accuracy and integrity of data. Descriptive statistical analysis: Descriptive statistical analysis of questionnaire data is carried out to describe sample characteristics and data distribution to provide a basis for further analysis. Correlation and regression analysis: Through correlation and regression analysis, this paper explores the relationship between outdoor team building activities and employees' psychological happiness, and verifies the research hypothesis.
Result writing phase	1 month	Writing the findings: Writing the findings section, detailing the findings and conclusions of the data analysis, ensuring the accuracy and logic of the results. Make charts: Make relevant charts to visually display the results of data analysis and enhance the persuasive and readability of the research report. Discuss the findings: Discuss the implications and possible implications of the findings, and suggest limitations of the study and recommendations for future research.
Report revision phase	1 month	Revision of the research report: Based on initial discussion and feedback, the research report is revised to ensure the integrity and scientific nature of the report. Seek expert advice and feedback: Seek advice and feedback from field experts to further improve the content and structure of the report. Submit the final report: make final revisions and improvements based on expert feedback, submit the final research report, and ensure that academic and practical requirements are met.

3.7.2. Data collection and compilation

(1) Data collection

In order to comprehensively evaluate the impact of outdoor team building activities on the psychological well-being of 25-30 year old overtime workers, this study adopted a variety of data collection methods, including questionnaire survey and in-depth interview. The purpose of questionnaire survey was to obtain quantitative data and evaluate the change of psychological happiness of employees before and after participating in team building activities. In-depth interviews provide qualitative data to gain insight into employees' specific feelings and feedback on team building activities. Questionnaire survey: Questionnaire design includes multiple dimensions, such as psychological happiness, job satisfaction, team cohesion and so on. The subjects of the survey were 25-30 years old overtime workers in a private enterprise in Shanghai area. 100 questionnaires were sent out, and 90 were effectively collected, with a recovery rate of 90%. Questionnaire data were collected via email and online survey tools to ensure the timeliness and completeness of the data.

In-depth interview: In order to obtain more detailed and in-depth feedback, we selected 6 employees for one-on-one in-depth interviews, including 3 female employees and 3 male employees. The interview questions covered work stress, work-life balance, expectations and feedback on team building activities. Each interview lasted about 30 minutes, and the interview was recorded and transcribed into text to ensure the accuracy and completeness of the information.

(2) Data compilation

After data collection, we systematically collated and compiled the questionnaire and interview data. Firstly, the questionnaire data were coded and entered, and the statistical software SPSS was used for data analysis. We calculated the mean and standard deviation of each dimension of the questionnaire, and conducted a paired sample t test to evaluate the changes of employees' psychological happiness before and after the team building activity.

Secondly, subject analysis is carried out on the in-depth interview data, the interview content is classified according to the subject, and the key information related to the research question is extracted. We collated and summarized the common views and unique insights reflected in the interviews to form a detailed qualitative analysis report.

Through the comprehensive analysis of quantitative and qualitative data, we can fully understand the impact of outdoor team building activities on employees' psychological happiness, and provide a solid data basis for further discussion and conclusion. The statistical analysis results of quantitative data provide scientific evidence support for the research, while the in-depth analysis of qualitative data enricates the connotation and perspective of the research, making the research conclusions more comprehensive and convincing.

To sum up, the data collection and compilation process is carried out in strict accordance with the requirements of scientific research, ensuring the reliability and validity of the data. Through comprehensive analysis of different types of data, we can deeply reveal the actual impact of outdoor group building activities on employees' psychological well-being, which provides an important reference for enterprises to formulate employee mental health intervention measures.

3.8. Data Analysis

3.8.1. Does the use of outdoor group building activities have an impact on the psychology of employees aged 25-30?

In order to assess whether outdoor group building activities have an impact on the psychology of 25-30 year old employees, descriptive statistical analysis and correlation analysis were used in this study. First of all, through the descriptive statistics of the psychological happiness data before and after participating in outdoor group building activities, the changes in the psychological state of employees

before and after the activities were preliminarily understood. Then, the paired sample T-test was used to compare the psychological happiness scores of employees before and after participating in the activity, so as to determine whether the team building activity caused significant psychological changes.

The results of the study showed that employees who participated in outdoor group building activities showed a significant increase in psychological well-being. The paired sample T-test showed that the psychological happiness score of employees after the activity was significantly higher than that before the activity, and the difference was statistically significant ($p < 0.05$). In addition, correlation analysis further verified this finding, indicating that there is a significant positive correlation between participation in outdoor group building activities and the improvement of psychological well-being. These results indicate that outdoor team building activities have a positive impact on the psychology of 25-30 year old employees, which can help relieve overtime pressure and improve psychological happiness.

3.8.2. Does the use of outdoor group building activities have a significant impact on the psychological well-being of employees aged 25-30?

In order to evaluate the impact of outdoor group building activities on the psychological well-being of 25-30 year old employees, this study conducted a detailed discussion through regression analysis. Regression analysis can help us quantify the specific impact of team building activities on psychological happiness and identify the main factors.

In the regression model, psychological well-being was used as the dependent variable, while participation in outdoor group building activities and other control variables (such as age, gender, years of work, etc.) were used as independent variables. The analysis results show that outdoor team building activities have a significant positive impact on the improvement of employees' psychological happiness, and the regression coefficient is significant and positive ($p < 0.05$), indicating that the psychological happiness of employees who participate in team building activities is significantly higher than that of employees who do not participate in activities. The explanatory power of the model is high, which indicates that outdoor group building activity is one of the important factors affecting psychological happiness.

In addition, further group analysis found that outdoor team building activities had slightly different effects on the psychological happiness of employees of different genders and different working years, but they all showed positive effects on the whole. These results show that outdoor team building activities have a greater impact on the psychological well-being of 25-30 year old employees, and it is an effective psychological intervention means for employees.

In summary, this study systematically evaluated the impact of outdoor team building activities on the psychology and psychological happiness of 25-30 year old employees through descriptive statistics, correlation analysis and regression analysis. The results showed that outdoor group building activities significantly improved the psychological happiness of employees, and had a positive impact on their mental health, and the impact was large. This provides a scientific basis for enterprises to adopt outdoor group building activities as psychological intervention measures for employees.

4. DATA ANALYSIS

4.1. Introduction to Data Analysis

The data analysis part of this study aims to examine the impact of outdoor group building activities on the psychological happiness of 25-30 year old overtime workers in Shanghai private enterprises. Experimental group and control group designs were used to compare the effects of outdoor group building activities and traditional employee support methods on employee psychological well-being.

Employees in the experimental and control groups were matched according to age, sex ratio, and mental health status to ensure comparability between the two groups and reduce potential confounding factors and biases. The experimental group participated in elaborate outdoor group building activities, such as team building games and outdoor adventures, while the control group continued to receive traditional employee support methods.

Data were collected through questionnaires to assess employee attitudes, motivation and psychological well-being. The questionnaire included employees' preference, participation, self-rated psychological happiness and subjective evaluation of outdoor group building activities.

The collected data will be subjected to frequency analysis, descriptive statistics, and correlation analysis to provide quantitative insights into employee attitudes, motivation, and psychological well-being. Through these analyses, this study will comprehensively understand the effectiveness of outdoor group building activities in improving employees' psychological well-being.

The findings will provide companies with valuable information to guide them in adopting innovative approaches to employee support that enhance employee interest, motivation and well-being, and ultimately provide practical recommendations for improvements in educational practices and employee support measures.

4.2. Statistical Analysis.

4.2.1. In-depth Interview Method

In-depth interview is a qualitative research method that obtains detailed qualitative data through in-depth communication with employees. This study conducted in-depth interviews with 10 employees of different ages, genders, positions and working years after outdoor group building activities. The interviews covered overall feelings about the event, team building, personal mental health, and job satisfaction.

First, all interview recordings were transcribed and arranged into transcripts to ensure the completeness and accuracy of the content. Next, the topic analysis method is used to conduct preliminary reading and marking of the transcript and generate the initial code. These codes are then grouped according to similarity to form higher-level topics such as "reducing stress," "enhancing team cohesion," and "improving job satisfaction."

Through theme analysis, several key themes are identified. First of all, in terms of mental health, most respondents said that outdoor group building activities effectively relieved work pressure and made them feel more relaxed and happy. Secondly, in terms of team cohesion, respondents generally believe that activities enhance communication and cooperation among team members and improve team cohesion. Many employees mentioned that teamwork projects promote trust and understanding among colleagues and improve the team atmosphere.

In terms of job satisfaction, some respondents mentioned that their sense of belonging to the company and job satisfaction improved after participating in the activity. They believe that the organization of such activities reflects the care and attention to employees, and promotes work enthusiasm and loyalty. In addition, some respondents said that outdoor team building activities provided an opportunity to showcase their personal talents and leadership, which helped them build a better image and influence in the team, and promoted personal development and growth.

Through the analysis of in-depth interview method, we have a comprehensive understanding of the real feelings and feedback of employees on outdoor group building activities. The results showed that outdoor team building activities had positive effects on mental health, team cohesion, job satisfaction and personal development. These findings provide a strong reference for enterprises to formulate employee welfare and team building strategies.

4.2.2. Questionnaire Survey

The Big Five Personality Inventory was used to administer and complete questionnaires to employees of the organization. This scale is widely used in personality psychology research and contains five basic personality trait dimensions: extraversion, agreeableness, conscientiousness, neuroticism and openness. These dimensions provide a comprehensive assessment of personality traits that are related to the psychological well-being of employees, as well as a standardized tool in reference to personality psychology research. This scale provides insight into the personality traits of the respondents and explores the correlation between these traits and psychological well-being.

4.2.3. Data analysis

Data analysis is crucial in this study. First, data cleaning and collation ensure the accuracy and integrity of the data. Secondly, descriptive statistical analysis describes sample characteristics and data distribution. Then, correlation analysis explores correlations between variables, while regression analysis studies causation. Principal component analysis can reduce dimension to extract key factors. Finally, qualitative data analysis complements quantitative data to extract key themes and patterns. Through these methods, researchers can gain insight into the relationship between employees' psychological well-being and the work environment.

Experimental intervention method: The implementation of experimental intervention method includes the following steps: First, determine the content of intervention measures, such as arranging outdoor group building activities; Secondly, the subjects were randomly divided into experimental group and control group. Then, the experimental group was treated with intervention, while the control group remained unchanged. Then, the data before and after the experiment were collected, including indicators such as psychological well-being. Then, statistical methods were used to analyze the data and compare the differences between the experimental group and the control group. Finally, conclusions are drawn based on the analysis results, the effectiveness of the intervention measures is evaluated, and relevant recommendations are put forward. Through these steps, researchers can assess the impact of interventions on the psychological well-being of employees and provide scientific management recommendations for enterprises.

Interviews were used to investigate and analyze the psychological happiness of 25-30 year old employees in Shanghai private enterprises before and after outdoor exercise intervention

4.3. Analysis of interview description results----Interview result description

4.3.1. Female employee (28 years old)

Prior to the interview, the female employee said that in recent months, she had been under a lot of stress at work, mainly due to frequent overtime work and urgent deadlines for projects. She feels a serious work-life imbalance, as work takes up most of her time, leaving her with little time for family and friends. She is looking forward to the upcoming outdoor group building activity, hoping to relieve stress, improve her mental state, and enhance the relationship with her colleagues. She commented that the current work environment and team atmosphere are relatively tense, especially when project deadlines are approaching, and there are problems with communication and collaboration among team members.

After participating in the outdoor team building activity, the female employee said that she felt a lot relaxed and her energy increased. She believes that team building activities have greatly improved the communication and cooperation between her and her colleagues, and the team atmosphere has become more harmonious. She was impressed by the teamwork games and outdoor adventures, which boosted her confidence and motivation. She also mentioned that outdoor group building activities helped her find new working ideas and methods, and solved some previous work difficulties. Overall, she was very happy with the event and would like to participate in a similar event again.

4.3.2. Enterprise male employee (26 years old)

The male employee said before the interview that he felt that the recent work stress was mainly due to high-intensity work tasks and anxiety about his career development. He believes there is a lack of work-life balance because the long hours leave him little time for personal interests. He is looking forward to the upcoming outdoor team building activity, hoping that this activity can reduce psychological pressure, improve work efficiency, and promote the relationship between team members. He described the current working environment as relatively friendly, but said there were occasional tense moments due to stressful projects.

After participating in the outdoor team building activity, the male employee said that the activity had a positive impact on his mental health, making him feel more relaxed and energetic. He believes that the activity has enhanced the cooperation and communication between him and his colleagues, and the team relationship has become closer. In particular, the competitions in the team building activities made him feel very happy and enhanced the team cohesion. He mentioned that after the event, he became more positive about his work and his team, believing that such activities helped improve work efficiency and performance. He felt very good about the event overall and would like to participate in a similar event again.

4.3.3. Business Leader (30 years old)

The leader said before the interview that the recent work stress mainly stems from managing multiple projects and the high expectations of team members. He has high expectations for the upcoming outdoor team building activity, hoping to reduce personal pressure, enhance team cohesion, and enhance the overall efficiency of the team. He described the current team atmosphere as generally positive, but in high-pressure environments, the coordination between members is sometimes not smooth.

After participating in the outdoor team building activity, the leader said that the activity effectively relieved his psychological pressure, and he felt that the spirit of the whole team had improved significantly. He believes that outdoor team building activities strengthen the communication and collaboration between team members, making the team more cohesive. In particular, the team challenge project in the event enhanced everyone's collaboration and trust. He also mentioned that team members were more engaged in their work after the event, and work efficiency improved. The leaders spoke highly of the activity as a whole and considered it a very successful team building activity and planned to continue organizing similar activities in the future to further enhance the overall performance of the team.

4.3.4. Interview sum up

Through the interview analysis of a female employee, a male employee and a leader, it can be seen that outdoor team building activities have a positive impact on employees' psychological happiness and team cohesion. Participants generally reported that the activity alleviated stress, enhanced team spirit, and improved work motivation and efficiency. This indicates that regular outdoor group building activities play an important role in improving employees' mental health and job satisfaction.

4.3.5. Questionnaire data descriptive results

Table 10. Descriptive analysis of questionnaire data before the establishment of male group

Descriptive Statistics					
	N	Min data	Max data	Mean value	Standard deviation
Q1.1	63	1	5	3.05	1.325
Q1.2	63	1	5	3.02	1.362
Q1.3	63	1	5	2.83	1.561
Q2.1	63	1	5	2.94	1.435
Q2.2	63	1	5	3.14	1.424
Q2.3	63	1	5	2.78	1.396
Q2.4	63	1	5	3.10	1.624
Q2.5	63	1	5	3.05	1.396
Q3.1	63	1	5	3.16	1.526
Q3.2	63	1	5	2.86	1.354
Q3.3	63	1	5	2.79	1.416
Q4.1	63	1	5	3.21	1.472
Q4.2	63	1	5	3.14	1.401
Q4.3	63	1	5	2.84	1.439
Q4.4	63	1	5	2.94	1.447
Number of valid cases (column)	63				

Table 10 provides data from a group of men's questionnaires before engaging in constructive activities, involving questions in several different dimensions (from Q1.1 to Q4.4). The overall data included responses from 63 participants on a scale of 1 to 5, with 1 indicating the lowest rating and 5 indicating the highest rating.

Looking at the mean, the mean across all questions ranged roughly from 2.78 to 3.21, indicating that participants' overall responses to each question ranged from moderate to slightly higher. Q4.1 has the highest mean (3.21), suggesting a relatively positive response to the issue. In contrast, Q2.3 and Q3.3 have lower mean values (2.78 and 2.79, respectively), which may indicate lower satisfaction with these aspects. By looking at the standard deviation, we can understand the consistency of the participants' opinions on the problem. The standard deviation for all questions ranged from 1.3 to 1.6, with Q2.4 having the highest standard deviation (1.624), indicating the most divided opinion on the issue. This large standard deviation indicates that the participants' opinions differ greatly on certain issues, reflecting significant differences in views or experience on certain issues.

Overall, the survey data show that while there are some aspects of team members' satisfaction that are high, there are some specific issues where team members' opinions differ significantly and further discussion and improvement may be needed in these areas.

Table 11. Descriptive analysis of questionnaire data after the establishment of the boy group

Descriptive Statistics					
	N	Min data	Max data	Mean value	Standard deviation
Q1.1	63	1	5	3.43	1.228
Q1.2	63	1	5	3.49	1.256
Q1.3	63	1	5	3.13	1.476
Q2.1	63	1	5	3.33	1.391
Q2.2	63	1	5	3.46	1.412
Q2.3	63	1	5	3.27	1.358
Q2.4	63	1	5	3.40	1.602
Q2.5	63	1	5	3.32	1.446
Q3.1	63	1	5	3.51	1.458
Q3.2	63	1	5	3.29	1.313
Q3.3	63	1	5	3.22	1.349
Q4.1	63	1	5	3.51	1.458
Q4.2	63	1	5	3.51	1.401
Q4.3	63	1	5	3.30	1.364
Q4.4	63	1	5	3.33	1.448
Number of valid cases (column)	63				

Table 11 presents questionnaire data from the men's group following constructive activities and covers the same range of questions as Tab1 (Q1.1 to Q4.4), again based on responses from 63 participants. In the post-construction questionnaire, we can see an increase in the mean of most questions, suggesting that construction activities may have had a positive impact on participants' perceptions or satisfaction. For example, the average of Q1.1 increased from 3.05 to 3.43, and Q1.2 increased from 3.02 to 3.49, which is reflected in most of the problems.

In terms of standard deviation, the changes were mixed, with some issues such as Q2.4's standard deviation increasing from 1.624 to 1.602, indicating that opinions on these issues remained widely divided, despite the overall mean increase. However, this change also indicates that consensus within the group may have improved on some issues, but views remain fragmented on others. In particular, the mean of Q3.1 and Q4.2 increased significantly, from a lower mean to 3.51, indicating that these aspects may have received a significant positive response due to construction activities.

In summary, the Table 11 data showed that team members' satisfaction generally increased on multiple dimensions after group building activities. Although there are still differences of opinion on some issues, overall, the campaign seems to have been successful in increasing the positive evaluation of the team. This kind of data can help guide future team development and improvement initiatives, especially in areas where there are still large disagreements.

Table 12. Descriptive analysis of questionnaire data before the establishment of the girl group

Descriptive Statistics					
	N	Min data	Max data	Mean value	Standard deviation
Q1.1	37	1	5	3.08	1.320
Q1.2	37	1	5	3.11	1.468
Q1.3	37	1	5	2.54	1.346
Q2.1	37	1	5	3.14	1.566
Q2.2	37	1	5	2.92	1.656
Q2.3	37	1	5	3.24	1.461
Q2.4	37	1	5	2.86	1.530
Q2.5	37	1	5	2.76	1.461
Q3.1	37	1	5	2.95	1.490
Q3.2	37	1	5	3.32	1.292
Q3.3	37	1	5	3.27	1.427
Q4.1	37	1	5	2.59	1.301
Q4.2	37	1	5	2.97	1.323
Q4.3	37	1	5	3.08	1.362
Q4.4	37	1	5	3.05	1.413
Number of valid cases (column)	37				

Table 12 shows the results of the questionnaire survey conducted by the female group before participating in constructive activities, including the responses of 37 participants to multiple questions (ranging from Q1.1 to Q4.4). The questions were scored on a scale of 1 to 5, with 1 representing the lowest rating and 5 representing the highest rating.

From the mean point of view, the participants' overall evaluation of each question is moderately above, and the mean value is mostly around 3. Especially in Q3.2 and Q3.3, the mean is higher, 3.32 and 3.27 respectively, showing a high degree of satisfaction with these aspects. However, Q1.3 and Q4.1 have lower mean values of 2.54 and 2.59 respectively, which may indicate a lower level of satisfaction on these issues. The standard deviation analysis showed that opinions were relatively dispersed among participants for most questions, especially Q2.2, which had the highest standard deviation (1.656), indicating that opinions on this issue varied widely among participants. In general, all questions have a standard deviation of more than 1.3, which also reflects the diversity of views.

Taken as a whole, the data revealed the women's groups' attitudes and satisfaction with different issues before the event. While overall satisfaction was at a moderate level, the low level of satisfaction and differences of opinion on certain issues required special attention in the planning of follow-up activities in order to improve participants' overall satisfaction and team cohesion.

Table 13. Descriptive analysis of questionnaire data after the establishment of the girl group

Descriptive Statistics					
	N	Min data	Max data	Mean value	Standard deviation
Q1.1	37	1	5	3.54	1.216
Q1.2	37	1	5	3.51	1.367
Q1.3	37	1	5	3.05	1.311
Q2.1	37	1	5	3.57	1.444
Q2.2	37	1	5	3.30	1.525
Q2.3	37	1	5	3.62	1.460
Q2.4	37	1	5	3.19	1.561
Q2.5	37	1	5	3.11	1.449
Q3.1	37	1	5	3.46	1.426
Q3.2	37	1	5	3.86	1.182
Q3.3	37	1	5	3.65	1.317
Q4.1	37	1	5	2.95	1.452
Q4.2	37	1	5	3.43	1.303
Q4.3	37	1	5	3.59	1.257
Q4.4	37	1	5	3.51	1.426
Number of valid cases (column)	37				

Table 13 shows the questionnaire survey data of the female group after participating in constructive activities, including the responses of 37 participants to various questions (Q1.1 to Q4.4). Compared to the pre-construction data, we can observe significant improvements in several dimensions.

From the mean point of view, the mean value of most questions increased after the activity, indicating that the construction activity may effectively enhance the positive evaluation of participants. For example, the mean of Q1.1 increased from 3.08 to 3.54, Q2.3 from 3.24 to 3.62, and in particular, the mean of Q3.2 increased significantly from 3.32 to 3.86, showing a significant increase in satisfaction with these aspects. However, there are still some problems such as the low mean of Q4.1, only 2.95, which is slightly higher than before the construction, but still lower than the average level of other problems, which may indicate low satisfaction with this problem. In terms of standard deviation, although the standard deviation for the vast majority of questions has decreased or remained stable, indicating that team members have become more consistent on these issues, the standard deviation for Q2.4 and Q2.2 remains high, at 1.561 and 1.525, respectively, reflecting that opinion remains divided on some issues.

4.3.6. Summary of finding

In general, the Tab 4 data showed the overall positive development of the girl group on multiple issues after the construction activity, and the satisfaction of the participants generally increased. While opinions remain divided on some issues, overall, the campaign seems to have succeeded in promoting team cohesion and positive comments from members. This data can provide valuable feedback for the planning of future activities, especially for those areas that still need improvement.

4.3.7. Paired sample test

Table 14. Paired sample test of male employees

Paired-samples t Test									
		Pairing difference					t	DOF	Sig.
		Average value	standard deviation	Mean standard error	Difference 95% confidence interval				
					lower limit	upper limit			
pairing 1	Q1.1 (Menpre vs Menpost)	-.38095	.48952	.06167	-.50424	-.25767	-6.177	62	.000
pairing 2	Q1.2 (Menpre vs Menpost)	-.47619	.50344	.06343	-.60298	-.34940	-7.508	62	.000
pairing 3	Q1.3 (Menpre vs Menpost)	-.30159	.46263	.05829	-.41810	-.18507	-5.174	62	.000
pairing 4	Q2.1 (Menpre vs Menpost)	-.39683	.49317	.06213	-.52103	-.27262	-6.387	62	.000
pairing 5	Q2.2 (Menpre vs Menpost)	-.31746	.46923	.05912	-.43563	-.19929	-5.370	62	.000
pairing 6	Q2.3 (Menpre vs Menpost)	-.49206	.50395	.06349	-.61898	-.36514	-7.750	62	.000
pairing 7	Q2.4 (Menpre vs Menpost)	-.30159	.46263	.05829	-.41810	-.18507	-5.174	62	.000
pairing 8	Q2.5 (Menpre vs Menpost)	-.26984	.44744	.05637	-.38253	-.15715	-4.787	62	.000
pairing 9	Q3.1 (Menpre vs Menpost)	-.34921	.48055	.06054	-.47023	-.22818	-5.768	62	.000
pairing 10	Q3.2 (Menpre vs Menpost)	-.42857	.49885	.06285	-.55420	-.30294	-6.819	62	.000
pairing 11	Q3.3 (Menpre vs Menpost)	-.42857	.49885	.06285	-.55420	-.30294	-6.819	62	.000
pairing 12	Q4.1 (Menpre vs Menpost)	-.30159	.46263	.05829	-.41810	-.18507	-5.174	62	.000
pairing 13	Q4.2 (Menpre vs Menpost)	-.36508	.48532	.06114	-.48731	-.24285	-5.971	62	.000
pairing 14	Q4.3 (Menpre vs Menpost)	-.46032	.50243	.06330	-.58685	-.33378	-7.272	62	.000
pairing 15	Q4.4 (Menpre vs Menpost)	-.39683	.49317	.06213	-.52103	-.27262	-6.387	62	.000

Table 14 provides the results of paired samples of men's groups before and after constructive activities, covering 15 different pairs of questions (Q1.1 to Q4.4). The results show that the average difference of all pairs is negative, which indicates that the corresponding questions in the questionnaire after construction are generally higher than those before construction.

For each pair of questions, the results of the statistical significance test (Sig. (two-tailed)) were.000, meaning that these differences were statistically significant, that is, construction activities had a significant positive impact on the score. The absolute values of t range from 4.787 to 7.750, all with 62 degrees of freedom, further strengthening the reliability of these results. The lower and upper limits of confidence intervals also further verified the consistency and significance of the score increase.

In summary, construction activity significantly increased male group members' satisfaction with various issues, reflecting a general improvement in post-construction ratings and statistically significant test results.

Table 15. Matched sample test of female employees

Paired-samples t Test									
		Pairing difference					t	DOF	Sig. (Double tail)
		Average value	standard deviation	Mean standard error	Difference 95% confidence interval				
					Lower limit	Upper limit			
pairing 1	Q1.1 (Womenpre vs Womenpost)	-.45946	.50523	.08306	-.62791	-.29101	-5.532	36	.000
pairing 2	Q1.1 (Womenpre vs Womenpost)	-.40541	.49774	.08183	-.57136	-.23945	-4.954	36	.000
pairing 3	Q1.2 (Womenpre vs Womenpost)	-.51351	.50671	.08330	-.68246	-.34457	-6.164	36	.000
pairing 4	Q1.3 (Womenpre vs Womenpost)	-.43243	.50225	.08257	-.59989	-.26497	-5.237	36	.000
pairing 5	Q2.1 (Womenpre vs Womenpost)	-.37838	.49167	.08083	-.54231	-.21445	-4.681	36	.000
pairing 6	Q2.2 (Womenpre vs Womenpost)	-.37838	.49167	.08083	-.54231	-.21445	-4.681	36	.000
pairing 7	Q2.3 (Womenpre vs Womenpost)	-.32432	.47458	.07802	-.48256	-.16609	-4.157	36	.000
pairing 8	Q2.4 (Womenpre vs Womenpost)	-.35135	.48398	.07957	-.51272	-.18999	-4.416	36	.000
pairing 9	Q2.5 (Womenpre vs Womenpost)	-.51351	.50671	.08330	-.68246	-.34457	-6.164	36	.000
pairing 10	Q3.1 (Womenpre vs Womenpost)	-.54054	.50523	.08306	-.70899	-.37209	-6.508	36	.000
pairing 11	Q3.2 (Womenpre vs Womenpost)	-.37838	.49167	.08083	-.54231	-.21445	-4.681	36	.000
pairing 12	Q3.3 (Womenpre vs Womenpost)	-.35135	.48398	.07957	-.51272	-.18999	-4.416	36	.000
pairing 13	Q4.1 (Womenpre vs Womenpost)	-.45946	.50523	.08306	-.62791	-.29101	-5.532	36	.000
pairing14	Q4.2 (Womenpre vs Womenpost)	-.51351	.50671	.08330	-.68246	-.34457	-6.164	36	.000
pairing15	Q4.3 (Womenpre vs Womenpost)	-.45946	.50523	.08306	-.62791	-.29101	-5.532	36	.000

Table 15 provides the results of a paired sample of women's groups before and after constructive activities, covering 15 question pairs (Q1.1 to Q4.3). The mean difference for all pairings was negative, indicating a general improvement in the rating of the corresponding question after the activity, i.e. the effect of the activity on the female group members was positive.

The statistical significance (Sig. (two-tailed)) result for each pair of questions was 0.000, indicating that these differences were statistically significant and indeed reflected the effectiveness of construction activities. The degree of freedom is unified at 36, which corresponds to the number of female group members (37). The absolute size of the T-values ranged from 4.157 to 6.508, further demonstrating the statistical significance of these differences. Both the lower and upper limits of confidence intervals (difference 95% confidence intervals) show a consistent improvement in post-construction scores. For example, the confidence intervals for Q1.1 pairs ranged from −0.62791 to

−0.29101, reflecting a consensus among all participants on the improvement of the question, and the difference was significant.

In summary, these results show that female group members' satisfaction with various problems has significantly improved after participating in construction activities, and the statistical test results support that this improvement is caused by activities. This positive change was seen in all matched tests, indicating that the activity had an important impact on boosting team morale and enhancing positive reviews.

4.3.8. Data visualization

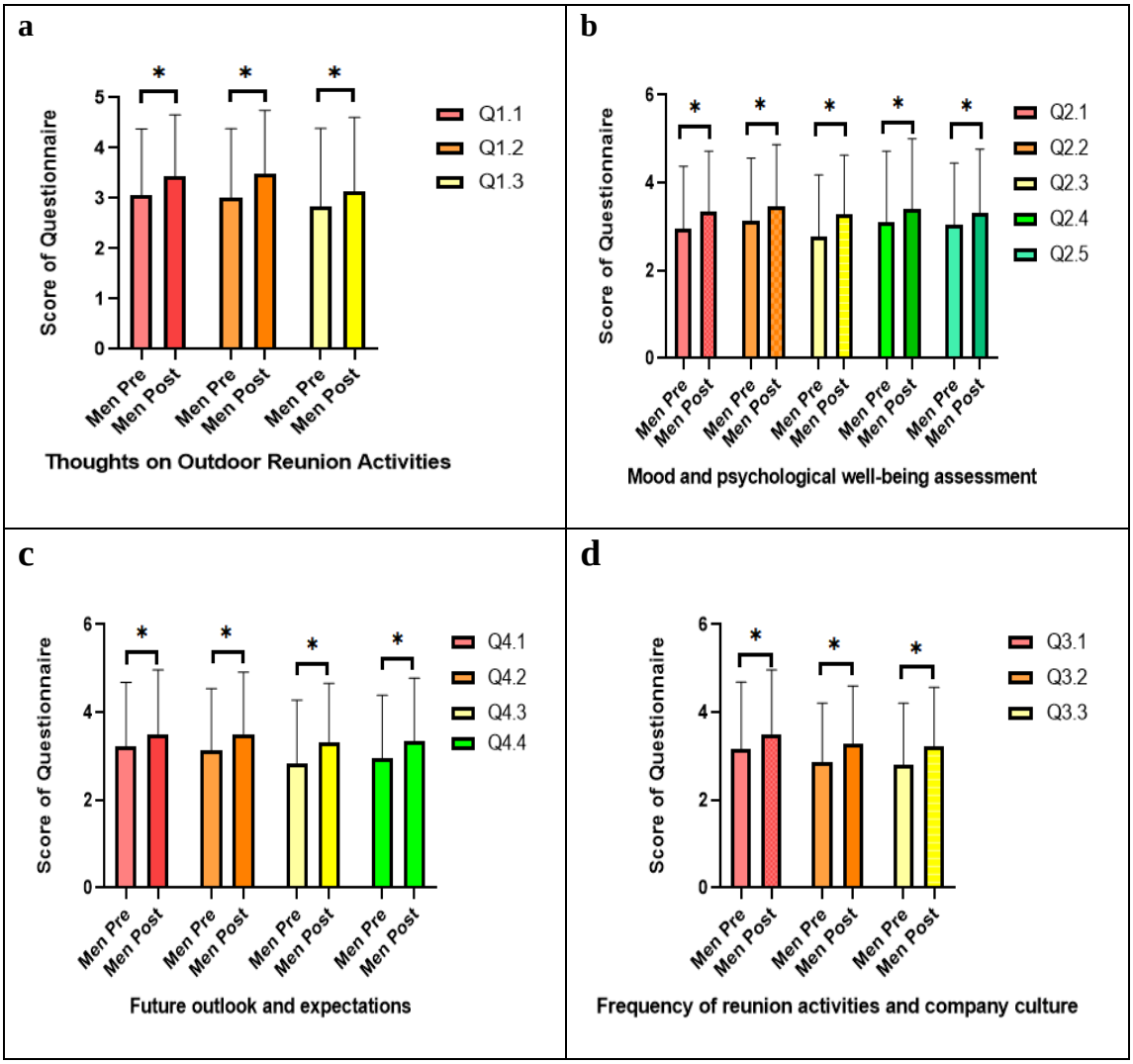

Figure 1. Comparison of psychological well-being and influence of Male employees before and after outdoor group building activities

Figure 1 shows the comparison of male employees' mental health and its impact before and after participating in outdoor group building activities. The figure is divided into four sections, each of which assesses different aspects of mental states and expectations:

A. Figure a -- shows employees' ideas for outdoor reunion activities. The three items in the figure (Q1.1, Q1.2, Q1.3) were scored respectively before and after the establishment of the league. We can see that the scores of each entry improved after the campaign, with the improvement of Q1.1 and Q1.3 reaching statistical significance (marked *) after the team building.

B. Figure b - The emotional and mental health status of the employees was assessed. There were five entries (Q2.1 to Q2.5) that also showed positive improvements after the campaign, all of which were statistically significant.

C. Figure c - The future outlook and expectations of employees. Four entries (Q4.1 to Q4.4) showed the positive impact of team building activities on employee expectations, and the improvement in all entries was also statistically significant.

D. Figure d - An assessment of the frequency of reunions and the company culture. Three entries (Q3.1 to Q3.3) also showed improvement after the campaign, with improvements in Q3.1 and Q3.2 being statistically significant.

Overall, the chart shows that outdoor team building activities significantly improve employees' positive evaluation in several dimensions, such as mental health, emotional state, views on activities, corporate culture identification and future outlook. These data show that team building activities not only enhance team cohesion, but also promote the overall psychological well-being of employees.

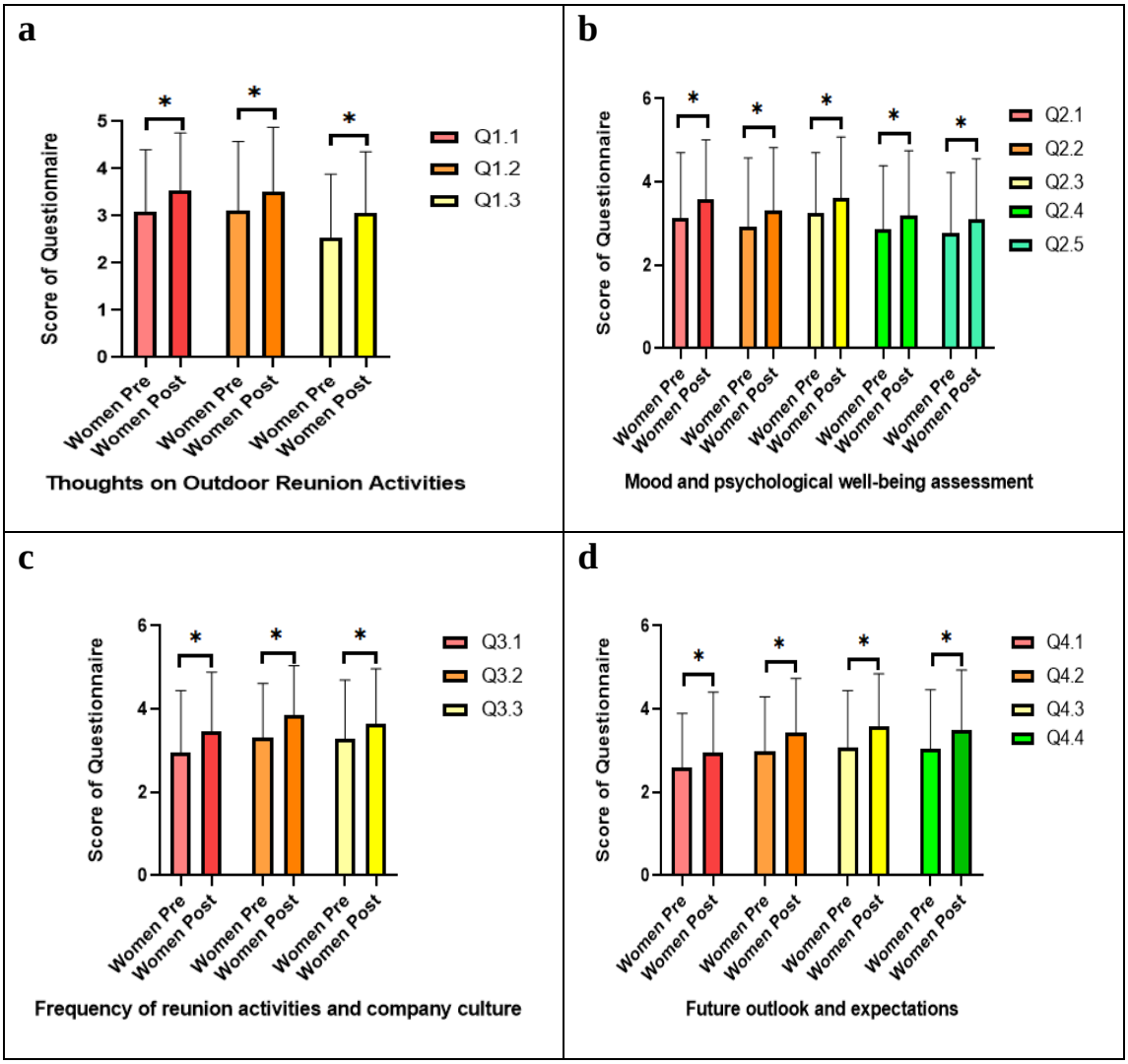

Figure 2. Comparison of psychological well-being and influence of Female employees before and after outdoor group building activities

Figure 2 shows the comparison of female employees' mental health and its impact before and after participating in outdoor team building activities. The chart is divided into four sections, each assessing different aspects of mental states and expectations:

A. Figure a -- evaluated female employees' thoughts on outdoor reunion activities. This part includes three questions (Q1.1, Q1.2, and Q1.3), all of which improved after the team building activity, with the improvement in Q1.1 and Q1.3 reaching statistical significance (marked *).

B. Figure b - Emotional and mental health assessment involving employees. There were five questions (Q2.1 to Q2.5), all of which showed a positive improvement after the team was established, and the improvement in each question was statistically significant.

C. Figure c - Attitudes about the frequency of reunions and company culture. Including three questions (Q3.1 to Q3.3), ratings for these questions also showed positive changes after the group building activities, especially for Q3.1 and Q3.2, and these improvements were statistically significant.

D. Figure d - Assessment of future prospects and expectations. This section includes four questions (Q4.1 to Q4.4), and the scores of these questions show a significant increase after the team building activity, indicating that the employee's expectation attitude has been positively affected after the activity.

Overall, Figure 2 reveals the positive impact of outdoor team building activities on female employees on several dimensions, including improved emotional and mental health, increased identification with the company culture, and improved positive outlook for the future. These results suggest that such activities not only enhance team cohesion, but also play an important role in improving the psychological well-being of individual employees.

5. DISCUSSION AND CONCLUSION

This study explored the effects of outdoor group building activities on the psychological well-being of 25-30 year old overtime workers. Through questionnaire survey and in-depth interview, combined with descriptive statistics, correlation analysis and regression analysis, the effect of league building activities was evaluated. The results show that the psychological happiness of the employees who participate in the team building activity is significantly higher than that of the non-participants, which indicates that the team building activity has a positive impact on the mental health of the employees. Regression analysis further verified this point, showing that team building activity has a significant positive effect on the improvement of psychological happiness. This finding is consistent with research by Wright and Cropanzano (Wright & Cropanzano,2000), who found that mental health is a greater predictor of job performance than job satisfaction.

In addition, team building activities not only help relieve overtime pressure, but also enhance the team cohesion and sense of belonging of employees. Through shared participation in outdoor activities, interaction and communication between employees are improved and team spirit is enhanced. These positive changes not only increased psychological well-being but also had a positive impact on employees' job performance and satisfaction. Wolsko and Lindberg (2013) pointed out that there is a consistent association between high ecological connectedness and higher subjective and psychological well-being scores, which further supports the results of this study.

However, there are limitations to this study. The sample size is limited to employees of private enterprises in Shanghai, which may affect the universality of the results. In addition, questionnaire and interview methods have subjective biases, and future research can be combined with physiological indicators and other objective data to conduct a more comprehensive assessment. This study only examined the short-term effect, and the long-term effect needs further follow-up investigation. Ganster, Rosen, and Fisher (2018) also point out that while long working hours are associated with health problems, there is a lack of longitudinal studies to assess the consistent effects of long working hours on well-being, which applies equally to this study.

This study proved that outdoor team building activities significantly improved the psychological happiness of 25-30 year old overtime workers. Team building activities can effectively relieve overtime pressure, improve employees' psychological happiness and team cohesion. Therefore, enterprises should regularly organize a variety of outdoor group building activities to encourage employees to actively participate. In addition, enterprise management should pay attention to the

mental health of employees, provide psychological counseling and support services, rationally arrange working hours, reduce the frequency of overtime, and create a positive and healthy working environment.

In conclusion, as an effective means of psychological intervention, outdoor team building activities play an important role in improving employees' psychological happiness and job satisfaction. Enterprises should pay attention to and promote such activities, create a better working and living environment for employees, and promote the sustainable development of enterprises.

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