

The Influence of Physical Exercise on the Psychological Stress of Women in the Human Resources Management Profession

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Abstract

The purpose of this study is to explore the impact of physical exercise on the psychological stress of professional women in the field of human resource management. In order to achieve this goal, a questionnaire survey was used to understand the current physical exercise status of professional women and the level of psychological stress. Through the use of statistical analysis, this paper further analyzes the impact of physical exercise on psychological stress and determines which exercise factors have the greatest impact on psychological stress. The survey results show that the main purpose of most professional women's physical exercise is to entertain and relieve physical and mental pressure, and relatively few people participate in regular exercise. Worryingly, in the survey sample, 44% of professional women are in a state of health risk stress, that is, they bear excessive psychological stress. The study found that the frequency and purpose of physical exercise are two significant factors that affect psychological stress. In particular, taking part in regular physical exercises for 1-2 times/week in a relaxed and happy way can significantly relieve professional women's psychological stress and improve their mental health. This indicates that moderate and regular exercise has a positive effect on reducing the psychological burden on professional women. The results of this study suggest that strengthening regular physical exercise to achieve the effect of physical and mental pleasure is of great significance to reduce the psychological stress of professional women and improve their mental health. Organizations and managers in the field of human resource management can provide better mental health support for professional women by encouraging employees to participate in moderate sports activities. At the same time, these findings also provide a reference for the development of psychological stress intervention measures for professional women, helping them to maintain a positive attitude and efficient working state in their work.

Keywords: Physical Exercise, Psychological Pressure; Mitigation, Professional Women.

Introduction

As one of the creators and inheritors of human civilization, women's health status and participation in physical exercise have a huge impact on national development and social progress, and directly reflect the implementation quality of the national fitness plan. At the same time, this is also one of the important indicators for measuring social equality. Professional women are one of the important components of women, which can be understood from the following two aspects: On the one hand, in terms of time, the career stages represented by the professional women group run through women's youth, middle age, and early stages of old age, which are very important and have the longest time span in women's lives; On the other hand, in terms of quantity, the professional women group is also the largest component of the female population (Reed et al., 2021).

With the development of the times and the continuous improvement of women's status, women have begun to break free from the constraints of traditional concepts and gradually enter the workplace from their families, at this

stage, women do not have the intervention of school physical education as female student groups, nor do they have the leisure time of elderly women, the dual identity of family and workplace makes professional women need to bear dual pressure, this has a significant impact on the participation of professional women in physical exercise. Looking at previous surveys on the participation of professional women in physical exercise, it can be found that "busy work" and "exhausted household chores" are often the two most important factors affecting the physical exercise of professional women, there are other factors besides this. However, overall, their enthusiasm for participating in physical exercise is often not well mobilized, their level of participation is not high, and their participation is not strong (Suzuki et al., 2023).

In modern society, professional women play an increasingly important role in various fields, including human resource management. The human resource management profession requires a high level of responsibility, decision-making ability, coordination ability, and the ability to handle complex problems. However, due to the dual role of professional women between work and family, they often

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face greater psychological stress. Psychological stress refers to the psychological reaction of individuals when facing pressure factors from internal and external environments. Among professional women, this psychological stress may come from many aspects, such as challenges at work, difficulties in time management, obstacles to career promotion, family responsibilities, etc. Long term exposure to high psychological stress may lead to negative effects such as emotional problems, anxiety, depression, physical and mental fatigue, and even have a serious impact on health. Physical exercise has been widely recognized in improving mental health. Moderate physical exercise can help people release stress, improve mood, and enhance physical and mental health. For professional women, by participating in physical exercise, they can have the opportunity to relax, reduce work and family pressure, thereby improving their ability to cope with complex challenges and better balancing work and life. However, although the positive impact of physical exercise on mental health has been widely studied, for professional women working in the field of human resource management, there has not been enough in-depth research on the impact of physical exercise on their psychological stress. Therefore, the purpose of this study is to fill in this research gap, understand the current situation of physical exercise and psychological stress level of professional women by using the questionnaire survey method, and use statistical analysis methods to explore the actual effect of physical exercise on psychological stress. This will provide useful information for organizations and managers in the field of human resource management, help them better support professional female employees, promote their mental health and work efficiency, and also provide scientific basis for developing psychological stress intervention measures. Through this study, we hope to improve the overall happiness and job satisfaction of professional women in the field of human resource management, thereby promoting the stable development of organizations and the sustained growth of employees.

Literature Section

The development of the times is like a double-edged sword. Economic development and technological progress have continuously improved people's living standards; however, the modern fast-paced urbanization lifestyle has led to an increasing pressure on people's lives, leading to a continuous decline in their physical and mental health levels. Data shows that the physical health level of adults is gradually declining. The decline in the physical health level of adult residents has also led to a younger trend of common epidemic diseases, and the incidence rate of

hypertension, cardiovascular and cerebrovascular diseases and other diseases among young and middle-aged people is on the rise. The reason for this is, this is largely due to insufficient exercise. The continuous increase in work and life pressure often leads people to sacrifice their exercise time. Therefore, the State Council has successively issued and implemented a series of documents to promote national fitness, including the Outline of the National Fitness Plan, the Regulations on National Fitness, the National Fitness Plan (2016-2020), and the Several Opinions on Accelerating the Development of the Sports Industry to Promote Sports Consumption, gradually elevate national fitness as a national strategy. It can be said that how to promote the participation of the whole population in physical exercise, enhance the national physique and health level, has always been a hot topic. [Aliabadi et al. \(2021\)](#) are investigating the impact of mindfulness-based decompression training on the specific quality of life during menopause # This Randomized controlled trial was conducted on 66 postmenopausal women aged 47-62 years in Iran. Participants were randomly assigned to the MBSR or control group. Before intervention, immediately after intervention, and three months after intervention, the MenQOL questionnaire was used to evaluate the specific quality of life during menopause in two groups of patients. The research results showed that compared with the control group, the male quality of life ($P < 0.001$), physical ($P = 0.001$) There are significant improvements in both psychosocial ($P = 0.001$) and sexual ($P < 0.001$) aspects. The MBSR program can be safely applied to improve the quality of life of menopausal women ([Aliabadi et al., 2021](#)).

Research Methods

Survey Subjects

Human resources departments in five major categories of professions in a certain city, including teachers, medical staff, civil servants, employees of enterprises and companies, and other categories (excluding the first four categories listed as other categories), according to the principle of random selection, a total of 1000 professional women were selected for the survey, and 827 valid questionnaires were collected, with an effective response rate of 82.7% ([Agarwal & Anantatmula, 2021](#)).

Methods

The main research methods are questionnaire survey, literature research, mathematical statistics, etc. The survey questionnaire includes a self-designed personal basic

information and participation in physical exercise, the Perceived Psychological Stress Scale (CPSS), and the Chinese Health Questionnaire (CHQ-12), the biggest advantages of CPSS and CHQ-12 used solve the problem of identifying health risk stress and psychological disorders. The optimal cutoff value for CPSS is 25/26, and it is determined that a score greater than 25 is excessive stress, known as health risk stress. The optimal cutoff value for CHQ-12 is 3/4, and those with a score greater than 3 are identified as psychological disorders. The reliability of the entire questionnaire was tested using the retest reliability method, with a retest reliability of 0.81 ($P < 0.01$), which meets statistical requirements. The validity test adopts the expert content validity test method, and its content validity meets sociological requirements (Cahill et al., 2021).

Statistical Analysis

The data was analyzed using SPSS 11.0 software and methods such as variance and chi square tests, multiple regression analysis, and path analysis.

Results

Current Situation of Professional Women's Physical Exercise

Through a survey on the frequency, time, method, content, purpose, and obstacles of professional women participating in physical exercise, it can be seen that 12.0% of them participate in exercise 3 times/week or more, 11.9% participate in exercise 2 times/week, 11.5% participate in exercise 1 time/week, and 52.7% occasionally exercise, 12.1% of people never participate in exercise. 12.1% of people who exercise for less than 0.5 hours each time, 47.0% maintained between 0.5 and 1 hour, and 40.9% maintained above 1 hour. 79.1% of professional women enjoy exercising with their family or others, with 40.1%

choosing to exercise with others and 39.0% choosing to exercise with their families, demonstrating a distinct "family style" physical exercise style (Shrestha, 2021).

21.2% of women choose walking as their exercise content, which is much higher than other sports, they also choose badminton and mountain climbing more, accounting for 15.8% and 12.8% respectively, the proportion of women choosing fitness exercises, swimming, jogging, table tennis, and sports dance ranges from 5.0% to 8.5%, few professional women participate in other projects.

The exercise goals of professional women are diverse and can be divided into three levels based on the proportion of choices, the proportion of fitness, physical fitness, entertainment, and stress relief is relatively high, while the proportion of weight loss, medical care, and accompanying family members is in the middle level, and the proportion of exercising for work needs, social interaction, and other purposes is very small. Lack of time, work fatigue, and heavy household chores are the first major reasons that hinder professional women from exercising (54.8%), while lack of exercise venues and irrationality are the second major reasons that hinder them from exercising (22.7%).

Current Situation of Psychological Stress and Mental Health of Professional Women

According to the survey (see Table 1), the average score of psychological stress among professional women is 24.85 ± 6.18 , which is close to the ideal threshold of 25 points. 44% of professional women are in a state of health risk stress, and 11.6% are in the category of psychological disorders. At the same time as measuring stress with the scale, participants were also asked to respond directly through self-perception. 66.6% of professional women felt stressed, of which 20.0% felt very stressed, 59.5% felt moderate stress, and 20.5% felt less stressed; The majority of stressors come from work (64.5%), followed by family (21.8%), and their social and physical health conditions also cause psychological stress (Kolias & Pliafa, 2022).

Table 1

Psychological Stress and Mental Health Status of occupational women (n=827 persons)

	Normal pressure	Health hazard stress	Psychological stress was divided $X \pm S$	Healthy psychology	Psychological block	Mental health mean $X \pm S$
Value	≤ 25	> 25	24.85	≤ 3	> 3	1.39
Percentage	56	44	± 6.18	88.4	11.6	± 1.82

The Impact of Physical Exercise on Psychological Stress

Table 2 shows that the average score of psychological stress in the exercise group is significantly lower than that in the non-exercise group ($F=5.781$, $P < 0.05$), and the detection rate of health risk stress is 7.9% lower than that in the non-exercise

group, with no statistically significant difference ($\chi^2=2.253$, $P > 0.05$). There were significant differences in the average scores of psychological stresses and the detection rate of health risk stress among different exercise frequency groups ($F=4.294$, $P < 0.01$, and $\chi^2=10.285$, $P < 0.05$, as shown in Table 3), with one session per week being the lowest, followed by

two sessions per week. The results of pairwise multiple comparisons (LSD method) showed that the average scores of psychological stresses in the once/week and twice/week groups were statistically significantly lower than those in the non-exercise group ($P < 0.01$), and the once/week group was

also significantly lower than the occasional exercise group ($P < 0.01$). There was no significant difference in other groups ($P > 0.05$). It can be seen that regular physical exercise once a week has the best effect on relieving stress, followed by 2 times a week (Alyan et al., 2021).

Table 2

Comparison of Psychological Stress Among Occupational Women in The Exercise and No-Exercise Groups

	Psychological stress was divided $X \pm S$	Health hazard stress N	relevance ratio (%)
Exercise group (727 persons)	24.64±5.98	313	43.1
Non-exercise group (100 persons)	26.37±7.27	51	51.0
F OR X2	F=5.781		$X^2=2.253$

Table 3

Comparison of Psychological Stress Among Occupational Women in Each Exercise Frequency Group Frequentness

Frequentness N=827 people	3 times / week or more 99 People	Two times / week 98 People	1 Time / week 95 People	Occasionally exercise 435 People	No exercise 100 People	F OR X2
Psychological stress was divided $X \pm S$	24.83±5.14	23.82±5.42	23.14±5.17	25.11±6.38	26.37±7.27	F=4.294
Health hazard pressure detection rate of (%)	48.5	36.7	32.6	45.5	51.0	$X^2=10.285$

Multivariate Regression Analysis of Psychological Stress Affecting Professional Women

From the previous results, it can be seen that participating in physical exercise can indeed alleviate psychological stress, and the frequency of exercise has a significant impact on psychological stress. So, in addition to exercise frequency, exercise items, methods, time, and objectives are important components of physical exercise. Do these factors have an impact on psychological stress? How will the impact be? In order to comprehensively analyze the impact of important factors of physical exercise on psychological stress, a stepwise regression analysis (STEP-WISE method) was conducted on 37 predictive variables, including exercise frequency (5 types), items (16 types), methods (3 types), time (3 types), and purpose (9 types). In order to ensure the reliability of the results, regression analysis was conducted while controlling for social statistical variables such as age, education, occupation, marriage, presence or absence of children, and monthly income (Serhan & Tsangari, 2022). The comprehensive regression equation model analysis, analysis of variance, and regression coefficient analysis table data are summarized in Figure 1:

From the analysis of the regression equation indicators above, it can be seen that all six variables entering the regression equation can effectively predict the psychological stress of professional women, the order of magnitude that affects the degree of psychological stress is entertainment physical and mental health, once per week, social interaction, undergraduate (including college) education, medical care, and stress relief.

Among them, the prediction of psychological stress is negative for entertainment, physical and mental health, once a week, socializing, and undergraduate (including college) students, that is, participating in physical exercise with entertainment, physical and social purposes can alleviate psychological stress, and participating in physical exercise once a week can alleviate psychological stress; The prediction of medical care and stress relief on psychological stress is positive, that is, intentionally participating in physical exercise with the purpose of medical care and stress relief cannot alleviate psychological stress (Deru et al., 2021). Among the six significant variables entered into the regression equation, entertainment, physical and mental health, social interaction, medical care, and stress relief all belong to the purpose of exercise, with 1 time/week being the frequency

of exercise, and education being the statistical variable. That is to say, when controlling for statistical variables, the

purpose of physical exercise and exercise frequency have the most significant impact on psychological stress.

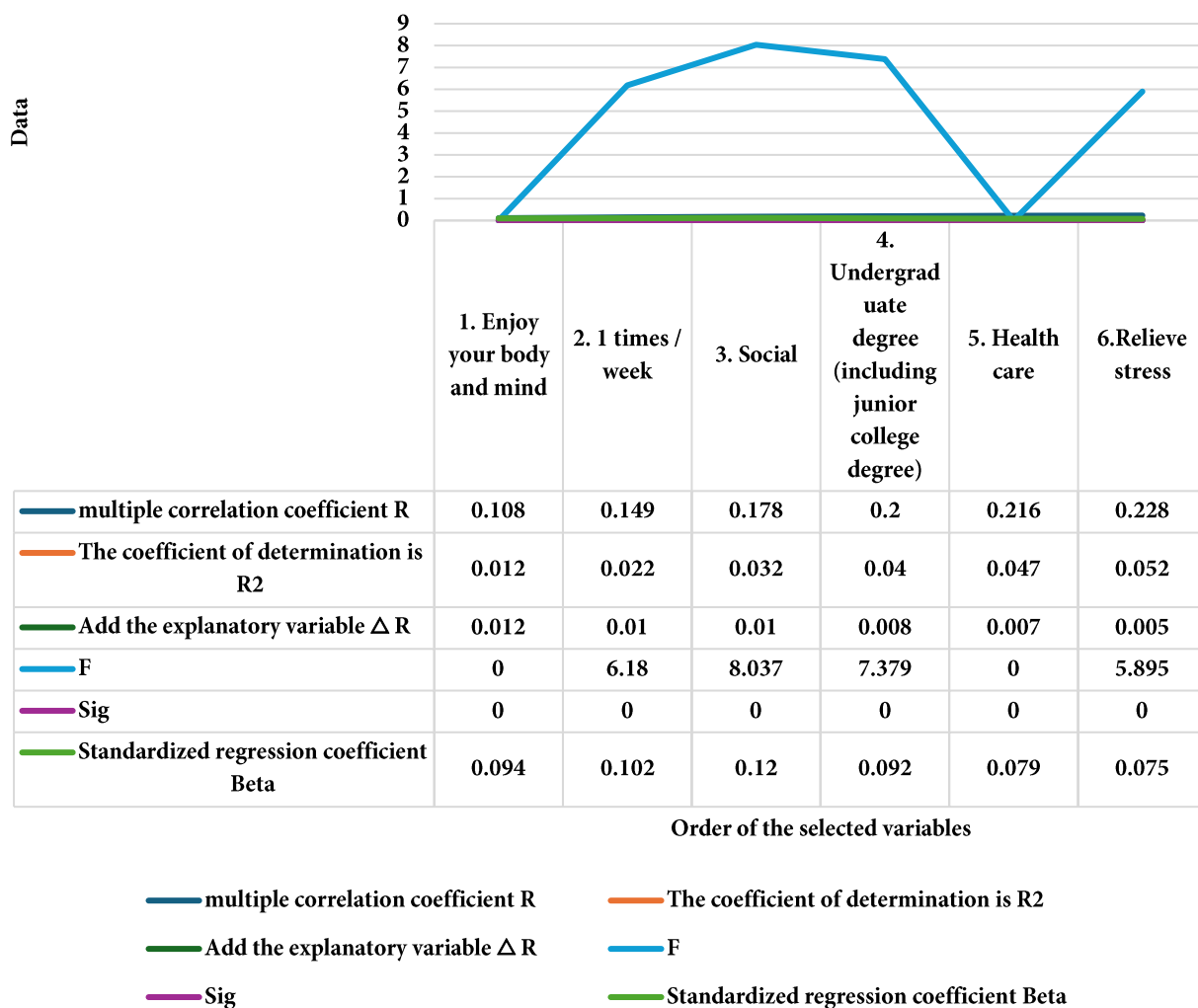


Figure 1: Physical Activity as Well as The Effects of Psychological Stress on Mental Health.

Research on the Effects of Physical Exercise and Psychological Stress on Mental Health

The ultimate goal of studying psychological stress is to understand its impact on mental health. From the above analysis, it is known that participating in physical exercise has an impact on psychological stress, especially the frequency and purpose of exercise have a particularly significant impact on psychological stress. So, what kind of mental health state will physical exercise lead to after intervening in psychological stress? This is our ultimate concern. The author studies this issue through path analysis method. According to the path analysis results, the impact of physical exercise frequency and psychological stress on mental health is shown in Figure 2.

Among the pathways that affect mental health, there are 7 significant pathways, among which 5 pathways, namely psychological stress and four types of physical exercise

frequency, directly and significantly affect mental health. The impact pathway is "direct", and psychological stress has the greatest impact on mental health. The four types of physical exercise frequency can directly improve mental health; At the same time, the frequency of exercise once a week and twice a week can significantly alleviate psychological stress, and there is a very significant negative correlation between psychological stress and mental health level (because the total score of psychological stress is positively correlated with psychological stress, and the average score of mental health is negatively correlated with mental health level), therefore, the frequency of exercising once a week and twice a week can alleviate the psychological pressure of professional women, thereby enhancing their mental health, and the impact path is both "direct" and "indirect". Psychological pressure plays a mesomeric effect in the impact of physical exercise on mental health (Cui, Wang, & Wang, 2021).

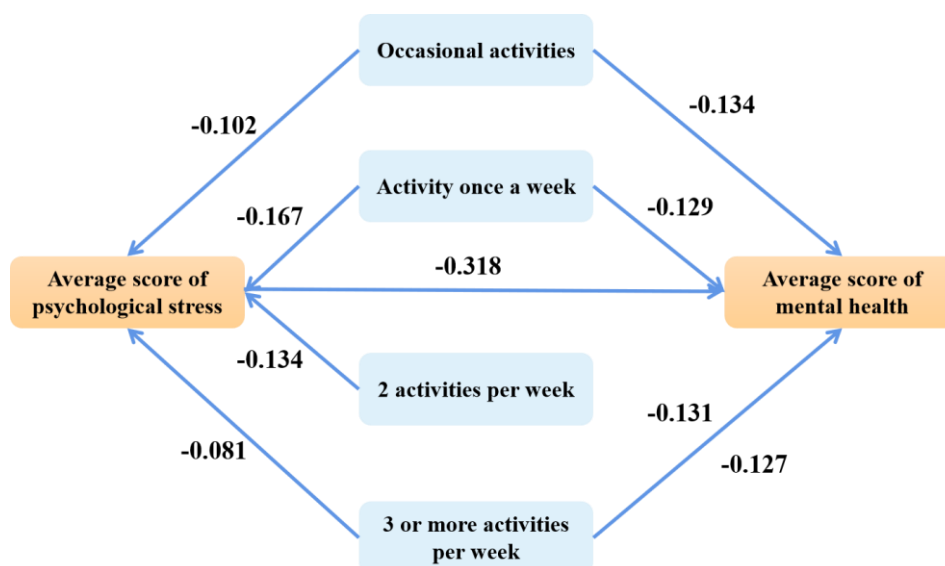


Figure 2: Route Model of The Effects of Physical Activity Frequency and Psychological Stress on Mental Health.

Discussion

Both the stress values obtained through measuring scales and the perceived stress level indicate that professional women are currently under significant psychological pressure, with 44% being in a state of health risk stress, which poses a threat to their physical and mental health and urgently needs to be alleviated. This study shows that participating in physical exercise can effectively alleviate psychological stress, which is consistent with other reports (Zureigat & Fattah, 2021). Physical exercise can not only directly promote mental health, but also improve mental health by alleviating psychological pressure. Psychological pressure plays a mesomeric effect in the impact of physical exercise on mental health, which is an important intermediary variable. Resources are the basic materials for coping with psychological stress, satisfactory health and sufficient physical strength to meet requirements are the most important material resources. Physical fitness, energy level, weight, and a good state of avoiding high-risk behaviors are essential coping resources; Self-esteem, humility, confidence, sense of control, and self-efficacy are the most important individual resources in coping with psychological stress (Lee & Ha, 2021). Appropriate physical exercise can improve physical fitness, enhance physical fitness, enhance health, bring about good changes in physical beauty and posture, and create a sense of satisfaction and achievement, enhance self-confidence, improve physical appearance and self-esteem, enhance self-esteem, ensure good resources for coping with stress, enhance resistance to stressors, enhance the ability of organisms to resist stress and tension, and "function normally" under stress and tension, improve individual

management of stress, reduce adverse reactions to stress, and reduce the harm of stress to the body. Release and transfer, relaxation and dispersion are behavioral strategies in modern stress management strategies. Taking part in appropriate physical exercise, that is, adopting the "diversion" coping style, can divert individuals' attention to stressors and relieve anxiety, depression and other negative emotions.

In this study, we explored the impact of physical exercise on psychological stress of women in the human resources management profession and discussed the results. The following are the main contents of the outcome discussion: 1. Physical exercise status of professional women: The survey results show that the main purpose of most professional women's physical exercise is to entertain and relieve physical and mental pressure, and relatively few people participate in regular exercise. This indicates that professional women are generally aware of the positive impact of physical exercise on mental health, but there is still room for improvement in practical actions.

2. Psychological stress level of professional women: The survey found that 44% of professional women were in a state of health risk pressure, that is, they suffered from excessive psychological stress. This indicates that women working in the field of human resources management generally face greater psychological stress, which may be related to the requirements of career, family responsibilities and work life balance.

3. The impact of physical exercise on psychological stress: The research results show that the frequency and purpose of physical exercise are two significant factors that affect psychological stress. In particular, taking part in regular physical exercises for 1-2 times/week in a relaxed and happy way can significantly relieve professional women's

psychological stress and improve their mental health. This result indicates that moderate and regular exercise has a positive effect on reducing the psychological burden on professional women.

4. The Mesomeric effect of psychological stress in the impact of physical exercise on mental health: The study also found that psychological stress played a Mesomeric effect in the impact of physical exercise on the mental health of professional women. This means that physical exercise affects the mental health of professional women by influencing psychological stress. Therefore, physical exercise can not only directly improve mental health, but also indirectly promote mental health by reducing psychological stress.

Based on the above results, this study provides us with an in-depth understanding of the relationship between physical exercise and psychological stress of professional women in human resource management. Appropriate regular physical exercise plays an important role in reducing the psychological stress of professional women and improving their mental health. Therefore, organizations and managers in the field of human resource management can support the mental health of professional women by encouraging their employees to participate in sports activities, thereby improving their work efficiency and quality of life (Mashhadi, Saadati, & Dadkhah, 2021).

Conclusion

Professional women's physical exercise shows a distinct "family style" exercise style; Having advantages such as diverse motivation, prominent mental health goals, and reasonable activity time; There are problems such as a

small number of regular participants in activities, primitive and simple content, lack of venues for activities, and insufficient attention to social interaction functions. Professional women currently face significant psychological pressure, with 44% being in a state of health risk stress (i.e. excessive stress) and 11.6% having psychological disorders and poor mental health. Participating in appropriate physical exercise can effectively alleviate the psychological pressure of professional women, with 1-2 workouts per week having the best stress relieving effect; The frequency and purpose of exercise have the greatest impact on the psychological stress of professional women, while the impact of exercise items (the items involved in this survey), methods, and time on psychological stress is not significant. There is a significant negative correlation between psychological stress and mental health level; Participating in regular physical exercise once a week and twice a week can not only directly improve mental health, but also promote mental health by alleviating psychological pressure. Psychological pressure plays a mesomeric effect in the impact of physical exercise on mental health, which is an important mediating variable. However, this study also has some limitations. Firstly, although the questionnaire survey method can obtain a large amount of data, the results may be influenced by the respondents' subjective consciousness and memory bias. Secondly, the sample selection may not be comprehensive and representative enough and may not fully reflect the situation of all women in the human resource management profession. Future research can combine more research methods and larger samples for in-depth research to enhance understanding of this field and provide more targeted interventions.

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