



## Impact of Healthy Lifestyle Education on Health Management

### Outcomes in Physical Examination Personnel

#### Influence of the Application of Healthy Lifestyle Education in Health Management of Physical Examination Center on Physical Examination Personnel

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#### ABSTRACT:

One cross-sectional study assessed the effects of health promotion education on the health care of the examinees in a physical check-up center. A total of 100 examinees, selected from 20,000 individuals between January and December 2022, were divided into two groups: a standard health management control group (n=50); and an observation group of healthy lifestyle education (n=50). Measures of behavior compliant, overall satisfaction, complaint-rate, knowledge test scores, health management quality and self reported negative emotions were obtained at the end of the intervention. Outcomes elucidated here revealed that the personnel in the observation group excelled the participants in the control group in all the parameters that were evaluated with significant ( $P<0.05$ ) differences. Observation group had greater behavioral compliance and management satisfaction percentages. Finally, the observation group reported lower complaint rates concerning examination, information communication and privacy as well. Knowledge scores (health knowledge, self-concept, self-care responsibility, and self-care skills) were significantly higher in observation group emphasizing on positive change of health knowledge and health responsibility. Other evidence suggesting a general upward shift in



health management quality indexes of care, service, technology, environment, and guidance were also observed in the observation group. Important negative affects, including depressive- and anxiety-like behaviors, were also significantly diminished in the observed group relative to the control group. Slowing down their compliance, reducing complaints, alleviating negative emotions and improving the quality of health management in clinic are considered as the findings of healthy lifestyle education. To sum, the adaption of healthy lifestyle education in to health management protocols in examination physical centers enhances the voluntary adherence and information acquisition among examinees as well as satisfaction and complaint level and minimizes negative emotions. This approach also realize the enhancement of the quality of health management and inclined to recognize that it can be an important approach in delivering healthcare services.

**Keywords:** Healthy lifestyle education; Physical examination center; Health management; Physical examiners; Self-examination behavioral compliance

## INTRODUCTION

These are extremely important components in modern healthcare delivery system, staffed to provide health surveillance as well as preventive services to individuals and organizations. Their main role is to assess the health states with the help of such services as biochemical measurements, images, electro cardiology, lung tests, and psychological ones. In addition to diagnostic services, those centers also develop the model health management, including the proper nutrition, physical activity, and mental health [2]. Of course, the overall goal is to equip people with the information on how this or that disease prevention works and how to improve the quality of life. What has attracted much attention are health management programs provided by institutions that conduct physical examinations, on the grounds of disease prevention and control, lower healthcare costs, and alleviation of social issues [3]. This is linked to the fact that being centers of health care these organizations provide a pro active approach to health care where every risk factor is detected and prevented before occurrence. In addition, the developed personal health plans can address specific needs and requirements in effect ensuring a healthier community, and encouraging clients and patients to embrace healthier lifestyles. However, the effectiveness of such programs rests squarely on the ability of examinees to follow and implement prescribed self-monitoring and health-promoting behaviors [2].



A physical examination center is an organization that offers health examination and health related services. Its main operation is to offer clients either individual or corporate an all-sided health check and medical care service, and to guide the client to do health self-check [1-2]. The services usually provided by the physical examination center include [3-4]: physical check up, blood check up, x ray, ECG, lung function tests, eye tests, oral cavity tests, audio-metry, psychological tests and many more examination tests. The physical examination center can also carry out the formulation of health management schemes according to the requirements of customers' physical examination results, and also its suggestions and recommendations on diet, exercise, psychology, nutrient intake, etc. [5-6].

The goal of health management in physical examination center is to let an individual or a corporate client understand their own current overall health condition, and make appropriate health management decisions in order to promote individual health care, improve the health level of the whole people, and enhance the quality of life [7-8]. From the customers' health point of view, it makes it possible for the health management to dynamically supervise customer's health situation, change the health management program in a timely and effective manner to control occurrence and development of disease, thus, decrease medical cost and social costs [9-10]. In the meantime, health management can also enhance customers' health consciousness and health knowledge, advance the construction of a healthy diet and health concept, prevent diseases, and enhance customers' quality of life [11-12]. The compliance of self- inspection of medical examine deals with Self- inspection and health care attitude as suggested by the doctor/physician after through examination. Based on the above background, this paper mainly analyzed the impact of the health lifestyle education in the health management of the physical examination center on the self-checking behavior compliance of the physical examination staff, so as to provide more theoretical guidance for the physical examination technicians of the health management in the physical examination center.

## METHODOLOGY

### 1. Data and methods

#### 1.1 Data

A cross-sectional study of 100 physical examinee from 20000 examine in the physical examination center of Kingdom Saudia Arab from January to December, 2022. Very randomly divided into control group (n=50) and observation group (n=50). Among them, ranging from 25 to 70 years old in the control group, and the average measurement data is (40.61 ±10.51)



years old; 30 males, 20 females. 30 of them reported academic qualification of junior high school and above, and 19 reported below junior high school standard. The age of the observation group of physical examiners ranges from 25 to 71 years old with a central value of  $(40.62 \pm 10.52)$  years. I counted that and there were 32 males and 18 females. From the above table, there are 33 cases of the respondents who acquired their education with academic qualification to junior high school and above, while 17 respondents acquired their education below junior high school academic level. No difference was recorded between the two groups in the above data ( $P > 0.05$ ).

Inclusion criteria for these physical examiners: There should be perfect information flow as follows: The personnel should have All information. The findings include: (2) Participants declared personal or family medical history; (3) The collected information was almost full. Exclusion criteria: The physical examiners with conditions as follows: (1) severe allergic constitution; (2) those in coma; (3) with strange mental abnormality.

## 1.2 Methods

The control group received normal health supervision.1. The physical examiners were subjected to health consultations with aims of obtaining the customer's medical history, family history, living habits, and any other relevant information; 2. A thorough physical assessment was done on the physical examiners which included their height weight, Blood pressure and its pulse as well as respiration rate. 3. Based on the findings of the inspection report, some of the conceivable health complications were pointed out to the physical examiners and they were instructed to follow up regularly.

The observation group received the healthy lifestyle education method for health management. 1. Examiners of the physical type were lectured by professional physicians or health experts to explain to them the significant aspects, rationale, and techniques of healthy living intending to enable the physical examiners appreciate healthy living. (2) In addition, health education materials such as brochures, posters and handbooks were developed in a bid to impart various skills and knowledge of healthy lifestyles to the physical examiners so that they were free to consult and learn at any time; (3) Health consultation services were available to the physical examiners such that the physical examiners had the opportunity to at all times consult health problems and have the chance to get information and skills that promote healthy living; (4) Health activities in the forms of fitness activities, healthy eating activities, health tourism, etc. were organized so as to allow the physical examiners to understand and practice healthy living



style during the activities; (5) Specific requirements of the physical examiners in terms of health and nutrition were also considered, and such programs included diet, exercise, psychological and nutritional advice to assist the physical examiners in setting up strategies and objectives towards healthy living. (6) It can recommend more individualized and high quality services for the medical examination VIP package group, and for the overnight medical examination VIP package service and others related VIP package group services. Of them, the overnight medical examination would let them has a comfortable accommodation environment and various services such as private rooms, healthy meals, gymnasium, etc. Subsequent to the physical examination, the Detailed Explanation Report would be issued to introduce the health status and possible health risks to the physical examiners; Health Maintenance and Promotion Information and Guide would be provided to the customers to teach them how to maintain a healthy life, including eating habits, exercise, psychology, nutrition, etc. The service for VIP package crowd would give the customers all round health, checkup and medical facility, including imaging checkup, psychological checkup and many more checkup.

### 1.3 Evaluation criteria

Using the different health management for the two groups, the following assessments were made regarding the self-examination behaviour compliance, total satisfaction rate of the management, total complaint rate, which included the physical examination process, information communication, and privacy protection. By the end of the physical examination process, the research subjects' physical examination knowledge questionnaire, self-concept, self-care responsibility and self-care skills, together with the health management quality of care and love, service and

Self-examination behavioral compliance (full compliance rate + partial compliance rate): It was sub divided into total compliance, partial compliance and noncompliance, and was mainly assessed based on a self developed self check compliance behavior checklist.

Total satisfaction rate of management (satisfaction rate + relatively satisfactory rate): They range from the satisfied, the relatively satisfied and the dissatisfied Strategic management satisfaction was mainly determined using a self-developed management satisfaction questionnaire.

Physical examination knowledge scores(health knowledge level, self-concept, self-care responsibility, self-care skills): The outcomes of physical examination were evaluated



according to the physical examination knowledge level measurement scale. Each node of full dimensions was 100 points, the higher the scores, the better the knowledge of the physical examination of the physical examiners.

Health management quality scores (care and love, service and technology, environment and guidance): The scores were assessed using the health management quality measurement scale. With all the dimensions having a full mark of 100 points, the higher the grade, the better the health management quality level of the physical examination center.

Negative emotion scores (depression, anxiety scores): The subjects were assessed using the Hamilton Depression Scale and the Hamilton Anxiety Scale in this study. The point was earned in different categories, with the lowest possible score given to the values of emotions E, which equal 100 points. Much of the data collected was initially entered into SPSS23.0. For count data that were presented in a percentage form and measurement data that were presented as mean  $\pm$  s,  $\chi^2$  test and t-test were used separately to test the data, and at a test level of 0.05. level measurement scale. The full score of each dimension was 100 points, and the higher the scores, the better the physical examination knowledge of the physical examiners.

Health management quality scores (care and love, service and technology, environment and guidance): The scores were measured by the health management quality measurement scale, and the full score of each dimension was 100 points. The physical examination center's health management quality level improves with higher grades.

Negative emotion scores (depression, anxiety scores): The scores were evaluated by the Hamilton Depression Scale and the Hamilton Anxiety Scale. The total score was 100 points, and the lower scores, the better the emotions.

## 1.4 Statistical methods

All indicator data were included in SPSS23.0.  $\chi^2$  and t-value were separately used to verify the counting and measurement data that were expressed in the form of % and  $\pm$  s, respectively, and  $P < 0.05$  was the test standard.

## 2. Results



## 2.1 Comparison of the self-examination behavioral compliance of the two groups

The self-examination behavioral compliance data comparison of the two groups of physical examiners after the health management showed that the data in the observation group were higher than those of the control group, and the difference achieved statistical significance at  $P < 0.05$ . See Table 1 and Figure 1.

Table 1 Comparison of behavioral conformity arising from self- inspection between the two teams

Team	Number of cases	Full compliance	Partial compliance	Non-compliance	Self-examination behavioral compliance (%)
Observation team	50	29	20	1	98.00
Control team	50	22	20	8	84.00
$\chi^2$	-	-	-	-	5.983
$P$	-	-	-	-	0.014

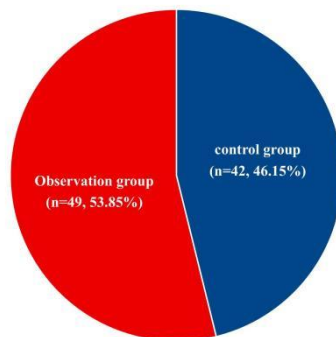


Figure 1 Comparison of the self-examination behavioral compliance between the two groups

## 2.2 Comparison of the total satisfaction rate of the management between the two groups

The data in the observational team were greater than those in the controlling team in the data contrast of the total contentment rate of management between the two teams of physical



examiners after the health management, and the disparity was meaningful, with  $P < 0.05$ . See Table 2 and Figure 2.

Table 2 Contrast of the overall contentment rate of the management between the two teams

Group	Number of cases	Satisfied	Relatively satisfied	Dissatisfied	Overall satisfaction rate of management (%)
Observation group	50	28	20	2	96.00
Control group	50	20	20	10	80.00
$\chi^2$	-	-	-	-	6.061
$P$	-	-	-	-	0.014

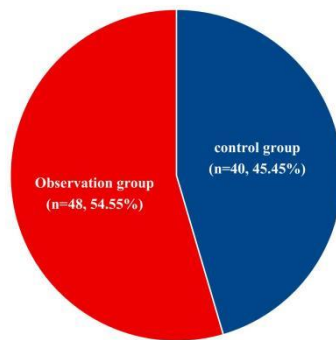


Figure 2 Contrast of the overall contentment rate of the management between the two teams

### 2.3 Comparison of the total complaint rate between the two groups of physical examiners after the health management

In the data comparison of the total complaint rate (physical examination process, information communication, privacy protection) between the two groups of physical examiners after the health management, the data of the observation group were lower than those of the control group, and the difference was significant, with  $P < 0.05$ . See Table 3 and Figure 3.



Table 3 Comparison of the total complaint rate between the two groups of physical examiners after the health management

Group	Number of cases	Physical examination process	Information communication	Privacy protection	Total complaint rate (%)
Observation group	50	1	0	0	2.00
Control group	50	2	4	4	20.00
$\chi^2$	-	-	-	-	8.274
$P$	-	-	-	-	0.004

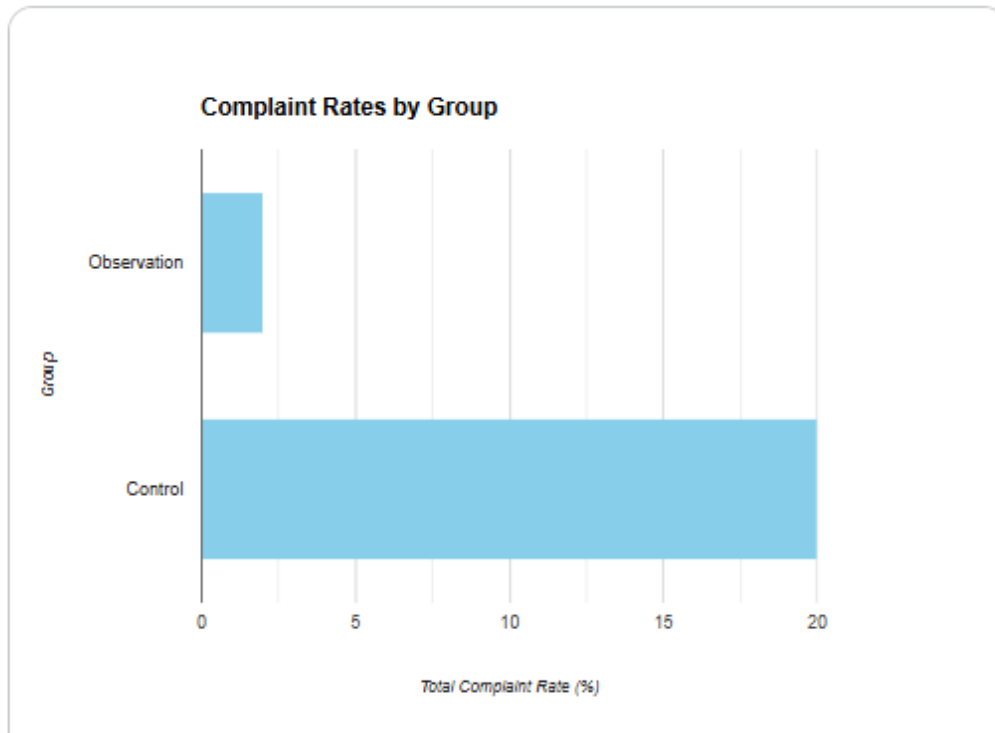


Figure 3 following the health management, a contrast of the two teams of physical examiners' overall complaint rates



## 2.4 The scores of health knowledge level, self-concept, self care responsibility and self-care skills for the two groups of physical examiners

The result of the health knowledge level, self-concept, self-care responsibility and self-care skill of physical examination knowledge scores in the observation group were all higher than those in the control group after the Health Management; the difference was statistically significant,  $P < 0.05$ . See Table 4 and Figure 4.

Table 4 Comparison of physical examination knowledge scores (health knowledge level, self-concept, self-care responsibility, self-care skills) between the two groups

Group	Number of cases	Health knowledge level	Self-concept	Self-care responsibility	Self-care skills
Observation group	50	86.56±2.32	82.88±2.44	84.44±2.11	84.33±2.22
Control group	50	72.93±2.21	74.15±2.35	74.66±2.54	74.67±2.23
t value	-	30.079	18.222	20.943	21.708
P value	-	0.000	0.000	0.000	0.000



Figure 4 Comparison of the physical examination knowledge scores (health knowledge level, self-concept, self-care responsibility, self-care skills) between the two groups of physical examiners



## 2.5 Comparison of the health management quality scores (care and love, service and technology, environment and guidance) between the two groups

In the data comparison of the health management quality scores (care and love, service and technology, environment and guidance) between the two groups after health management, the data in the observation group were higher than those in the control group, and the difference was significant, with  $P < 0.05$ . See Table 5 and Figure 5.

Table 5 Comparison of health management quality scores (care and love, service and technology, environment and guidance) between the two groups

Group	Number of cases	Care and love	Service and technology	Environment and guidance
Observation group	50	82.55±2.66	80.44±2.55	89.77±1.44
Control group	50	72.57±1.67	70.77±2.55	79.67±2.43
t value	-	22.469	18.961	25.284
P value	-	0.000	0.000	0.000

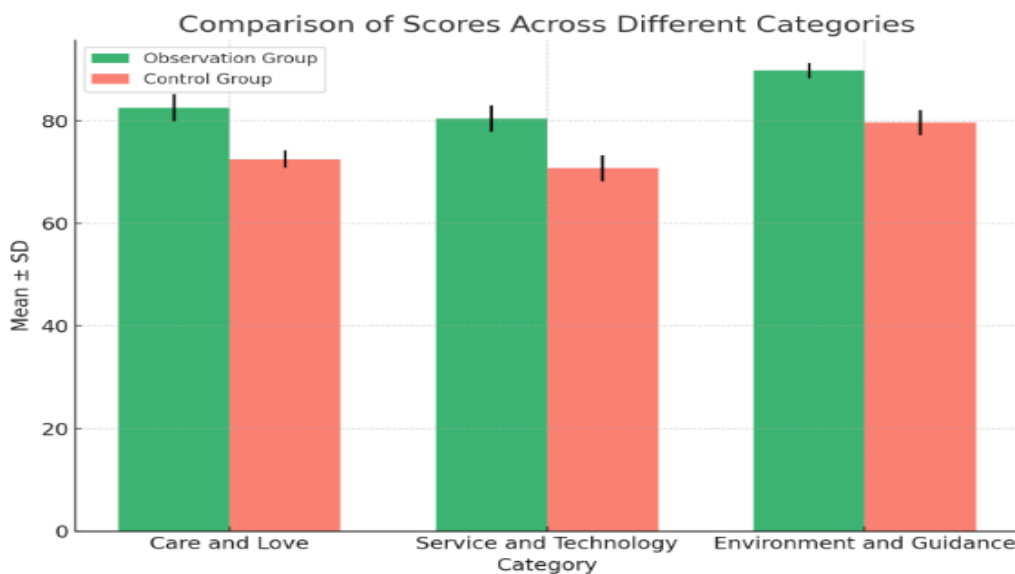


Figure 5 Comparison of health management quality scores (care and love, service and technology, environment and guidance) between the two groups



## 2.6 Comparison of the negative emotion scores (depression, anxiety scores) between the two groups of physical examiners after health management

After health management, the negative emotion data of depression and anxiety scores in the observation group had lower scores than in the control group and the differences were statistically significant,  $P < 0.05$ . See table 6 and figure 6.

Table 6 Comparison of the negative emotion scores (depression and anxiety scores) between the two groups after health management

Group	Number of cases	Depression	Anxiety
Observation group	50	$26.85 \pm 2.46$	$23.69 \pm 1.14$
Control group	50	$36.89 \pm 2.47$	$38.73 \pm 1.65$
t value	-	20.365	53.028
P value	-	0.000	0.000

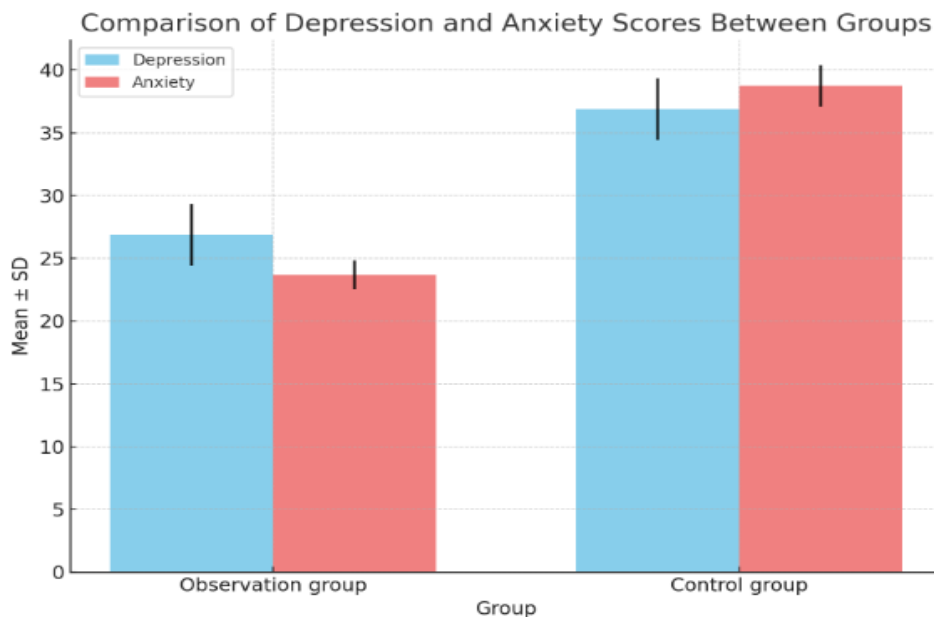


Figure 6 Comparison of negative emotion scores (depression, anxiety scores) between the two groups of physical examiners after health management



### **3. Discussion:**

As the quality of life improved, there is a increasing concern about personal health issues [13-14]. As this, the primary business of physical examination centre which is an institution providing health examination and medical service, is to provide customers either individual or corporate customer with comprehensive health examination, and/or relevant medical service, so as to help the clients to understand the current health condition, identify any possible health risk factors, and develop certain preventive and corrective measures to enhance his/its health status and quality of life [15-16].

This paper shows that health management through the physical examination center involves the means of healthy lifestyle education. By various methods of publicity and education and guidance, it can enable people to realize the significance of a good health life and acquaint themselves with the technique and approach of good health life and thereby contributing to the people's health and happiness. In practicing health management of physical examination center, the education of healthy life has a significant effect on the self-examining behavior compliance of the physical examiners[19-20]. The self-examination behavioral compliance of the physical examiners means whether the physical examiners are able to follow the doctor's or a health specialist's advice and counselling to practice a healthy lifestyle including diets, exercise, psychology, nutrition, etc., if they are receiving health checkups and medical facilities[21-22]. Healthy lifestyle education can enhance the health related knowledge and health literacy level of the physical examiners; enhance the healthy lifestyle construction; therefore enhance the self-checking behavioral compliance degree of the physical examiners [23-24].

Specifically, healthy lifestyle education can have impacts on the self-examination behavioral compliance of physical examiners in the following aspects: Firstly, it can enhance the physical health knowledge of physical examiners[25-26]: The knowledge of healthy diet can pass the information and knowledge of healthy diet, so that the physical examiners understand how to eat healthy. In this way, physical examiners themselves can achieve healthy lifestyle learning, enhancing an overall health self-awareness and health knowledge level, and thus comprehend and pay more attention to solving their own physical condition and health issues [27-28]. Secondly, it can enhance the health beliefs and self-efficacy of the physical examiners: They include educating those on a healthy lifestyle; this should give the physical



examiners methods and skills in adopting the lifestyle that should correspond to their healthy lifestyle. By accepting the self-contained healthy lifestyle education, the physical examiners could upgrade their health beliefs and self-efficacy, and they hope they could, too, have a corresponding healthy lifestyle in order to upgrade their health levels [29-30]. Thirdly, it can promote the change of health behaviors of physical examiners: Healthy lifestyle education can offer professional health care management measures for physical examiners and guide them to make suggestions and proposals on diet, physical exercise, psychology, nutrition, etc. In the process of healthy lifestyle teaching, physical examiners could know their own health condition and the aspects in need of exercising health behaviour and then choose suitable healthy life styles to enhance their health quality. In sum, effective health education of a healthy diet should occupy an important place in the health care of medical examination centers.

The results of this data also showed that: in the data comparison of self-inspection behavioral compliance, the total satisfaction rate of management, the physical examination knowledge scores (health knowledge level, self-concept, self-care responsibility, self-care skills), health management quality scores (care and love, service and technology, environment and guidance) between the two groups of physical examiners after health management, the data in the observation group were higher than those in the control group, with  $P < 0.05$ . In the data comparison of the total complaint rate (physical examination process, information communication, privacy protection) and negative emotion scores (depression, anxiety scores) after the health management between the two groups of physical examiners, the data in the observation group were lower than those in the control group, with  $P < 0.05$ . The data suggest that the application of healthy lifestyle education can provide more personalized and high-end services for physical examiners, help them better understand their own health status, improve their health levels and quality of life, and help them be able to understand the importance of a healthy lifestyle and master the methods and skills of healthy lifestyle, which has very high application security and feasibility.

It can be seen that the application of healthy lifestyle education in the health management of the physical examination center can improve the self-examination behavioral compliance and satisfaction rate of management of the physical examiners, greatly reduce the incidence of complaints in various aspects, and help strengthen the physical examination awareness of the physical examiners and improve their negative emotions, and boost the health management quality level of the medical examination center. It is worth noting that due to the small scope of the study, the small number of selected cases, and the lack of follow-up, the research data may be biased to a certain extent. Therefore, the follow-up study needs to further expand the research selection scope, increase the number of selected cases and increase the follow-up, so



as to improve the reliability of the research conclusions.

## Conclusion

This study focuses on discovering the number of positive changes in outcomes of physical examiners' occasioned by health management interventions. The results show that the performance of self-examination behavioral compliance and the satisfaction with the health management process were significantly higher in the participants who received the HMSG than in the control group, and substantially fewer complaints were reported. In addition, participants in the observation groups positively changed health knowledge, self-attitude, self-care management, self-care competence, while negative emotional states decreased, including depression and anxiety. Such outcomes speak about the necessity of combining health education and life guidance into the habitual health control activity. Besides increasing the efficiency of physical examinations, those interventions contribute to better physical, mental and emotional functioning due to the stimulation of improved health knowledge and compliance with healthy behaviour. Hence, there is a need to incorporate extensive health management extents in other centers such as the physical examination centers to ensure enhancement in the delivery of health services and improved people's health in the long-run.

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