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Original Article

Evaluation of Psychological Perceptions and Effectiveness of Health-Related Technologies in University Students

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ABSTRACT

Young people are using wearable technology and mobile health applications in astronomically greater numbers to keep track of their adaption to healthy lifestyles. **Objectives:** To evaluate psychological perceptions, motivation levels, satisfaction levels and effectiveness of health-related technologies in university students. **Methods:** This was a cross-sectional study done at the University of Lahore's Lahore Campus, for the duration of 4 months. Convenient sampling technique was used to calculate sample size. A self-governing questionnaire was used to calculate data from 100 university students. Several statistical techniques, including cross tabulation and descriptive statistics, were used to examine the data using SPSS software. **Results:** Regarding psychological perceptions, 61% were conscious about their body image but 39% were not and 54% felt anxious after eating but 46% did not feel so. Regarding Motivation for physical activity, 37% were somewhat motivated, 30% a little bit motivated, 27% not at all and 6% were very well motivated. Regarding satisfaction levels, 52% were satisfied, 12% were highly satisfied and 18% were highly dissatisfied. Regarding effectiveness levels, 27% found these apps somewhat effective, 26% a little effective, 10% very effective and 37% not at all effective. **Conclusion:** A positive impact of these tools and technologies is hence found upon healthy lifestyle adaptation among university students.

INTRODUCTION

The use of advanced tools and technologies, such as mobile health apps and fitness watches, has become increasingly prevalent in our society. These tools have the potential to greatly impact the nutritional wellness and lifestyle behaviors of individuals, particularly university students. The purpose of this research article is to examine the role of these tools and technologies in affecting the nutritional wellness and lifestyle behaviors of university students [1]. This article aims to provide a comprehensive understanding of the effects of these tools and technologies on the nutritional wellness and lifestyle behaviors of university students, as well as potential implications for future research and practice [2]. In recent years, the use of mobile health (m-health) apps and fitness watches has become increasingly popular among university students. M-health apps and fitness watches are designed to help individuals monitor and improve their health and fitness, by providing information and resources such as nutritional information, exercise tracking, and goal setting [3, 4]. These tools have the potential to be particularly beneficial for university students, who may be facing the added stress and demands of academic and social responsibilities, as well as the challenges of maintaining a healthy lifestyle in a university setting [5]. However, it is important to consider the psychological perceptions and effectiveness of these tools in order to fully understand their impact on the nutritional wellness and lifestyle behaviors of university students. For example, it is important to consider how the use of these tools may impact an individual's motivation and self-efficacy, as well as the extent to which they are able to incorporate the information and resources provided by these tools into

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their daily lives [6, 7]. Additionally, it is important to consider how these tools may impact the social interactions and support networks of university students, as well as the extent to which they are able to maintain healthy behaviors over time [8]. The literature on m-health apps and fitness watches is still in the early stages, but the studies that have been conducted show some promising results. These studies suggest that m-health apps and fitness watches may be effective in promoting healthy behaviors among university students, but more research is needed to fully understand the impact of these tools on the nutritional wellness and lifestyle behaviors of university students [9-11]. In conclusion, the role of advanced tools and technologies, such as mobile health apps and fitness watches, in affecting the nutritional wellness and lifestyle behaviors of university students is an important and emerging area of research. The use of these tools has the potential to greatly impact the nutritional wellness and lifestyle behaviors of university students, but it is important to consider the psychological perceptions and effectiveness of these tools in order to fully understand their impact [14, 15]. Further research is needed to fully understand the impact of these tools on the nutritional wellness and lifestyle behaviors of university students, and to identify potential implications for future research and practice. This research will help to inform the development and implementation of m-health apps and fitness watches for university students, in order to promote healthy behaviors and improve the overall well-being of this population [16].

METHODS

This cross-sectional research was carried out at the Defense Road Campus of the University of Lahore. The trial lasted for four months. A n=100 sample was used. It was done via non-probability convenient sampling. Only university students studying allied health sciences between the ages of 18 and 26 were eligible to participate in the poll, regardless of their ethnicity or gender. Students who are above 26 years old and under the age of 18 are excluded. The study was not open to students studying subjects other than allied health sciences. Students at universities besides the University of Lahore were excluded. Students that were not cooperative were not included in the sample. All data for this research were gathered randomly via a survey utilizing a thorough self-governed questionnaire that was approved by professionals. All of the questions were based on many aspects, such as demographic data, anthropometric measures, use of fitness apps, the effects of utilizing exercise equipment on one's health, physical activity, and lifestyle changes. The head of the department at the University Institute of Diet and Nutritional Sciences and the ethical committee both signed the ethical permission. Before collecting any data, the participants' permission was obtained. Participants were given questionnaires to complete, and they were instructed to do so. While conducting the study, the ethical guidelines established by the university of Lahore's ethics council were adhered to, and the participants' rights were respected. The following variables from the questionnaire were used to gather data: Participants were prompted to provide anthropometric measures and demographic information. Participants immediately posed questions to the group. The data were tabulated and analyzed using SPSS version 21.0. The qualitative data, including gender, the kind of exercise equipment used, etc., were presented as percentages and frequencies. Using chi-square, the relationship between the variables was discovered.

RESULTS

Table 1 shows characteristics of participants according to different categories. 67% participants were of normal weight while 14% and 18% were underweight and overweight respectively and only 1% was obese. 64% were females and 36% were male. 40% were at intermediate level while 33% graduated, 21% in matriculation, 4% in masters and 2% were at PHD level. 78% participants were aware of nutritional education while 22% were not. On the other hand, 60% had no genetic history and 40% participants had family history of obesity/overweight. 67% belonged to upper middle class and 7% belonged to low class while 15% were lower middle class and 11% belonged to high socioeconomic class. 62% had optimal health status, 8% had very poor health. 14% had poor and 16% were very healthy. However, 38% participants were liked eating out with friends, 34% liked eating alone and 29% with family. On the other hand, 35% participants did 30 minutes physical activity,30% for 60 minutes, 28% for more than one hour and 7% not at all.

Variables	Frequency (%)
BMI Categories	
Underweight	14 (14%)
Normal Weight	67 (67%)
Overweight	18 (18%)
Obese	1 (1%)
Gender Categories	
Male	36 (36%)
Female	64 (64%)
Qualification Level	
Matric	21 (21%)
Intermediate	40 (40%)
Graduation	33 (33%)
Masters	4 (4%)
PhD or Higher	2 (2%)

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Nutritional Education	
Yes	78 (78%)
No	22 (22%)
Family History of Obesity/ Overweight	
Yes	40 (40%)
No	60 (60%)
Socioeconomic Status	
Lower class	7 (7%)
Lower middle class	15 (15%)
Upper middle class	67 (67%)
High/ elite class	11 (11%)
Nutritional Status	
Very poor	8 (8%)
Poor	14 (14%)
Optimal	62 (62%)
Very Healthy.	16 (16%)
Food preferences	
Eating alone	34 (34%)
Eating with friends outside	38 (38%)
Eating on table with family	29 (29%)
Duration of physical activity per day	
30 minutes	35 (35%)
60 minutes	30 (30%)
More than one hour	28 (28%)
Never	7 (7%)
Brands Used	
Total	100(100%)

Table 1: Distribution of participants according to different categories

Out of 100 participants, 35% were not interested in using trackers or health apps while 18% used wearables, 22% used mobile health apps and 25% chose other options they had (Figure 1).

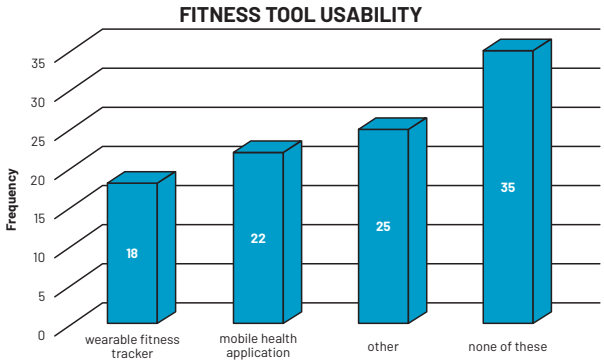

Figure 1: Distribution of frequent fitness tools usability by participants

Out of 100 participants, 25% used other brands that are not mentioned, 23% used apple, 13% fitbit, 15% Samsung, 20% never used and 4% used garmin (Table 2).

Brand names	Frequency (%)
Fitbit	13 (13%)
Garmin	4 (4%)
Samsung	15 (15%)
Apple	23 (23%)
Others	25 (25%)
Don't use	20 (20%)
Total	100 (100%)

Table 2: Distribution of brands used for health and fitness wearable technology

Out of 100 participants,43% used trackers for less than a month, 21% for up to three months, 18% for up to 5 months and 14% for a year (Figure 2).

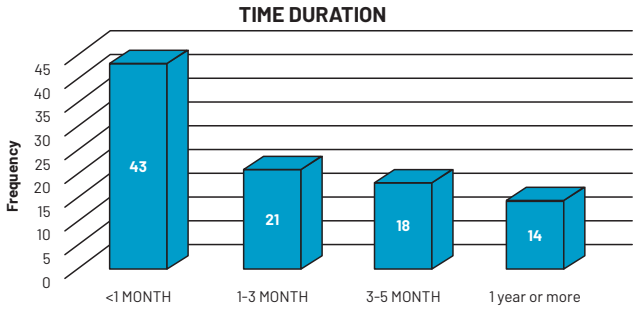

Figure 2: Distribution of time duration of using wearable fitness trackers

Out of 100 participants, 29% use fitness buddy, 10% map my run, 9% 10k runner, 7% runkeeper and my fitness pal while 4% used runtastic and others for work out sessions (Figure 3).

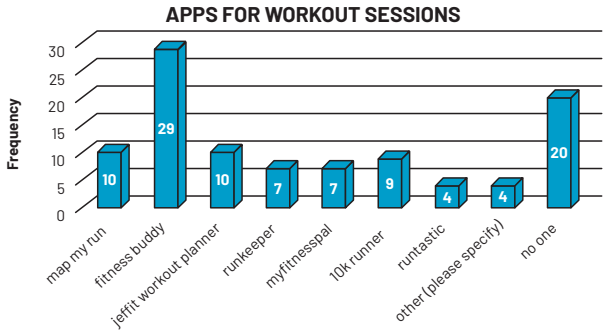

Figure 3: Distribution of health and fitness apps used for workout sessions

Out of 100 participants, 24% tracked their diet for a few days per year, 17% never, 20% for few months, 10% a few days per week and 4% for certain meals (Figure 4).

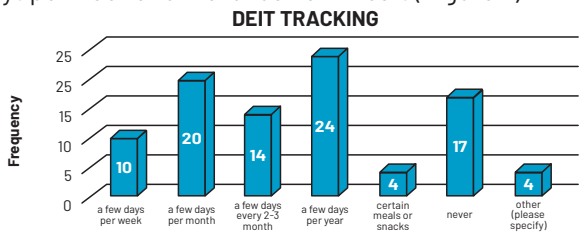

Figure 4: Distribution of frequency of diet tracking through health and fitness wearable technology

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Out of 100 participants, 61% were conscious about their body image but 39% were not and 54% felt anxious after eating but 46% did not feel so (Table 3).

Psychological perceptions	Frequency (%)		
	Yes	No	Total
Body-image consciousness	61	39	100.0
Anxiety after meals	54	46	100.0

Table 3: Distribution of participants according to psychological perceptions of using wearable fitness technology

Regarding Motivation for physical activity, 37% were somewhat motivated, 30% a little bit motivated, 27% not at all and 6% were very well motivated. Regarding satisfaction levels, 52% were satisfied, 12% were highly satisfied and 18% were highly dissatisfied. Regarding effectiveness levels, 27% found these apps somewhat effective, 26% a little effective, 10% very effective and 37% not at all effective (Table 4).

Variables	Frequency (%)
Motivation level categories	
A little bit motivated	30 (30%)
Somewhat motivated	37 (37%)
Very well motivated	6 (6.0%)
Not at all	27 (27%)
Satisfaction level categories	
Highly satisfied	12 (12%)
Satisfactory	52 (52%)
Highly dissatisfied	18 (18%)
Dissatisfactory	18 (18%)
Effectiveness level categories	
Very effective	10 (10%)
Somewhat effective	27 (27%)
A little effective	26 (26%)
Not at all	37 (37%)
Total	100 (100%)

Table 4: Distribution of Motivation, Satisfaction and effectiveness level of using health and fitness apps

DISCUSSION

This was a cross-sectional study done at the University of Lahore's Lahore Campus, for the duration of 4 months. Convenient sampling technique was used to calculate sample size. A self-governing questionnaire was used to calculate data from 100 university students. Several statistical techniques, including cross tabulation and descriptive statistics, were used to examine the data using SPSS software. Regarding satisfaction levels, 52% were satisfied, 12% were highly satisfied and 18% were highly dissatisfied. Regarding effectiveness levels, 27% found these apps somewhat effective, 26% a little effective, 10% very effective and 37% not at all effective. Present study shows that 22 out of 100 university students who participated in research used mHealth apps while 18 out of them used wearable fitness trackers in order to improve diet and exercise habits. Similar results deduced by Kettunen et al., in 2018 that teenagers are pleased about digital coaching. They prefer instruction and counselling, particularly in the areas of physical activity and diet [17]. In our study, regarding motivation for physical activity, 37% were somewhat motivated, 30% a little bit motivated, 27% not at all and 6% were very well motivated. A study conducted in 2018 showed that the use of m-health apps and fitness watches improved the physical activity levels of university students [18]. In present study, 24% tracked their diet for a few days per year, 17% never, 20% for few months, 10% a few days per week and 4% for certain meals to improve their diet. A study conducted by the Leung and Chen showed that the use of m-health apps and fitness watches improved the dietary habits of university students [19]. Considering psychological perceptions of health-related technology, 61% were conscious about their body image but 39% were not and 54% felt anxious after eating but 46% did not feel so. A study by Lin et al., observed that perceived psychological empowerment and improved hedonic wellbeing may be a more potent strategy to promote the efficacy of mobile health apps [20]. Another study by Ventola, in 2014 showed that these devices had a great impact on patient's life and clinical management [21].

CONCLUSIONS

According to the study's findings, the majority of participants utilize fitness watches and apps. Most people use these tools to monitor their weight and to get healthier. Although step counting, step recording, and calculating calories burned during activity are the main uses of fitness trackers. These tools and technology have a favorable effect on university students' adoption of healthy lifestyles.

Conflicts of Interest

The authors declare no conflict of interest.

Conflicts of Interest

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