



Use of Health and Fitness Mobile Apps and Physical Activity Index among Physical Education Teachers

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Abstract:

The purpose of this study was to assess the present physical activity condition of PE teachers, to examine the stage of behavior change model. For this study PA behavior was defined as PE teachers are in which stage of Transtheoretical model/ stages of change model.

After participation in this study researcher want to check PE teacher's awareness towards physical activity and technology especially mobile apps for physical activity and to investigate the mostly used health related apps being used by the PE teachers. The developed questionnaire of Physical activity index, Physical activity behavior stage of change and use of health and fitness apps was given to PE teachers.

For this research survey method is used. Population of this study was 86 Physical Education teachers. The result of this study showed that 15% of PE teachers were in contemplation and 12.5% PE teachers were in preparation phase. 30% of PE teacher's physical activity level was sedentary.

42% PE teachers use health and fitness apps in their smart phone and 33% PE teachers are not having knowledge about fitness apps. 58% PE teachers are not using health and fitness apps in their smart phone but 95% PE teachers intend to use technology in future. 41% of PE teachers are using health and fitness apps more oftenly and 33% of PE teachers are using health and fitness apps in their smart phone from last 3 months. 42% of PE teachers are using health and fitness apps for awareness of healthy habits.

Mostly used health related apps being used by the PE teachers were Runtastic, Runkeeper, Adidas miCoach, Strava, Endomondo, Accupedo, Pedometers etc.

Keywords: PA level, Mobile technology, PA Behavior, PE teachers

Introduction:

Technology has been used to promote physical activity and change exercise behavior. According to Marcus B. H., Forsyth L. H., Stone E. J., Dubbert P. M., McKenzie T. L., Dunn A. L., and Blair S. N. determined the utility of mobile phone to increase Physical activity. Many researchers have determined the usability of mobile apps and phone in Physical activity. Many researchers have worked on taking up facility mobile phone to track their exercise behavior and to monitor exercise behavior. Some of the researchers worked on motivation level and how

long motivation stays and adheres to physical activity, in this way lot of research has done on change of behavior and behavior modification. (Marcus B. H., Forsyth L. H., Stone E. J., Dubbert P. M., McKenzie T. L., Dunn A. L., and Blair S. N.) McKenzie reported that technology can use for change in behavior or modification in behavior.

According to Middleware and Mollee apps are used for promoting physical activity applied on average of 5 out of 23 possible behavior change techniques. Smart phones can both unobtrusively sense human behavior and be

an ideal platform for delivering feedback and behavioral therapy.

Statement of the Problem:

It was imperative to find out whether people are aware of using mobile technology for physical activity, Physical activity behavior and physical activity index of PE teachers.

Significance of the Problem:

According to Zhu W. Technology has great potential to help promote physical activity. Pedometers are used mainly for measuring and monitoring steps in Physical activity promotion and as a motivation tool. Because walking is the most popular Physical activity mode, walking, along with pedometers, has become one of the most popular means of Physical activity promotion (Williams et. At., 2008). Pedometer-based walking has been demonstrated to be associated with significant increases in physical activity and decreases in body mass index and blood pressure (Bravata et al., 2008), and has resulted in a modest amount of weight loss. (Richardson, 2008). Technology usage increases awareness towards physically active life style. It motivates human being it monitors and keep records. According to Webb T. L., Joseph J., Yardley L., Michie S. (2010) The Internet is increasingly used as a medium for the delivery of interventions designed to promote health behavior change.

Purpose of the Research:

1. To assess the present physical activity level of PE teachers.
2. To examine the current physical activity behavior stage of Physical Education teachers according to behavior change model.
3. To check their awareness towards physical activity and technology especially mobile apps for physical activity.

4. To investigate the mostly used health related apps.

Assumptions of the Study:

The following assumptions are made for this study:

For this study it was assumed that the individuals will give true data and they will give required information in the questionnaire. Questions coded in the questionnaire helped for getting required information from the population.

Delimitations of the Study:

The following delimitations are stated:

1. The area of this study is delimited to school physical education teachers of Pune city.
2. The area of this study is delimited to Physical education teachers.

Limitation of the study:

The study was limited by the following:

1. Reporting of physical education teachers about awareness towards technology for PA was done using a questionnaire which cannot be verified hence it was a limitation of this study.
2. This study is limited to physical activity index of the physical education teachers, their stage of behavior changes, and awareness and status towards use of technology for physical education teachers.
3. Questionnaire was also be the limitations of this study.
4. The trustworthiness of respondents to answer questions accurately and honestly was also the limitation of this study.

Research Method:

For this research Survey method was used.

Population and Sample:

1. School physical education teachers of Pune city was comprising the population of this study.

2. Size of the sample for survey was 86 age between 25 to 40.
3. For the survey Non-probability method is used in which **incidental sampling technique** is used.

Data Collection Tools:

Qualitative study- Survey

- Physical activity level- Physical Activity Index Questionnaire
- PA stage of change Questionnaire
- Use of health and fitness apps Questionnaire
Perceived usability, awareness about mobile technology and apps

Procedure of the Study:

Survey on physical education teachers- In the survey analysis, according to some research questions, physical activity assessed by using

questionnaire, physical activity stage of behavior change was also checked through questionnaire and use of health and fitness apps was also assessed by questionnaire. Perceived usability, awareness about mobile technology and apps was also accessed by using questionnaire

Data Analysis:

In the descriptive treatment of the data, a qualitative analysis of the information obtained from the open-ended questions was carried out by using transcription analysis using inductive thematic analysis.

Physical Activity Behavior

Present physical activity behavior of PE teachers was

Table 1: Physical Activity Behavior

Physical Activity Behavior	Precontemplation	Contemplation	Preparation	Action	Maintenance	Total
Frequency	1	12	10	12	45	80
Percentage	1.25	15	12.5	15	56.25	100

Physical Activity Index

Present physical activity condition of PE teachers was

Table 2: Physical Activity Index

Physical Activity Index	Sedentary	Poor	Fair	Very Good	High	Total
Frequency	21	13	13	18	4	69
Percentage	30.43	18.84	18.84	26.08	5.79	100

Awareness towards Physical Activity and technology/ mobile apps

Table 3: Usage of health and fitness apps in smart phone

	Yes	No	Total
Frequency	36	50	86
Percentage	41.86	58.13	100

Table 4: If health and fitness apps are not using then its reasons

	No time	Unsure how to start	Don't want to know about it	No knowledge about it	Total
Frequency	17	7	2	13	39
Percentage	43.58	17.94	5.12	33.33	100

Table 5: If health and fitness apps are not using then are they intend to use technology/ app in future

	Yes	No	Total
Frequency	40	2	42
Percentage	95.23	4.76	100

Table 6: How often do they use fitness apps?

	Several times daily	Daily	Very often	Three or four times a week	Other	Total
Frequency	5	5	13	8	1	32
Percentage	15.62	15.62	40.62	25	3.12	100

Other- According to the requirement some PE teachers specified that they used health and fitness apps sometimes and once in a week.

Table 7: When did they start using these health and fitness apps?

	From last one year or before	From last 9 months	From last 6 months	From last 3 months	From this month	Total
Frequency	10	0	8	11	3	32
Percentage	31.25	0	25	34.37	9.37	100

Table 8: Reasons of using health and fitness apps

	Goal tracking	Awareness of healthy habits	Motivation	Identifying unhealthy issues	Competition motivation	Other	Total
Frequency	9	14	3	2	4	1	33
Percentage	27.27	42.42	9.09	6.06	12.12	3.03	100

Other- Some PE teachers use health and fitness apps to maintain fitness, for enlightening knowledge and to find out innovations or research work done on apps.

Table 9: Using a smart phone to track health and fitness is more important than using it for other purposes

	Facebook and other Social media	Shopping or play games	Google to search	Read the news	Listen to music	Send and receive music	Make receives phone calls	other	Total
Frequency	17	3	9	0	0	1	3	0	33
Percentage	51.51	9.09	27.27	0	0	3.03	9.09	0	100

Other- Some PE teachers use health and fitness apps for all physical activities and building good quality muscles.

Table 10: PE teachers are using health and fitness apps for

	Tracking my calorie intake and expenditure	Tracking my BMI	Workouts of strength and abs	Workouts of Yoga and meditation	Running (Cardio) related apps	Other	Total
Frequency	9	4	10	2	3	2	30
Percentage	30	13.33	33.33	6.66	10	6.66	100

Other- Some PE teachers use health and fitness apps for all physical activities and building good quality muscles.

Analysis of the Subjective Questions:**Advantages of using health and fitness apps:**

According to this study advantages of health and fitness apps are motivation and consistency in exercise. For fitness related things it is useful for calories counting, BMI calculation, measuring heart rate, it shows frequency and intensity, fitness tracking, because of it we will get exercise for all muscles, weight gain, for staying fit and for stamina and strength improvement.

It is useful for getting information of new exercises, it shows variety of exercises, it is useful for updated exercises. It is useful for improvement of CV endurance, it is useful for measuring heart rate, it helps us to track route and distance in kilometers and it is helpful for running distance analysis.

Health and fitness apps are useful for goal setting, goal achievement, goal tracking and it reminds us about our goal. It aware us about unhealthy issues, diet and healthy habits.

Health and fitness apps programs are easily available; it shows how to do exercises in proper way and in proper posture. These apps are easily accessible, it saves money, it analyzes and gives output easily. It saves our time, it monitors and maintains physical activity, it gives us proper guidance, it gives us updated knowledge about PA, fitness and health. It provides us easy to do task, it is useful for identifying progress, it provides readymade and easy to do workout programs. It provides us healthy environment to individuals.

Mostly used health and fitness related apps for Running:

PE teachers are using health and fitness apps like running plus, runtastic, runkeeper, Adidas miCoach, strava, bleep test, endomondo, metronome beats, cardio, track master, cardio training, personal coach, pedometer etc.

Mostly used health and fitness related apps for Workouts:

For workouts PE teachers are using apps like total body workouts, upper body and back exercises, metronome, lower body exercise, abs exercises, cardio, strength training workouts, abs workouts for 30 minutes, muscle gaining, gym coach, weight training workouts, daily PE activities, body building and fitness workouts, endomondo, squats, library exercises, Aididas MiCoach, total fitness, total training, personal coach, Instagram, strong your muscles and 7 min workouts.

Mostly used health and fitness Related apps for Pedometer:

PE teachers are using these apps for counting steps like accupedo, pedometers, runkeeper, weight loss coach

Mostly used health and Fitness related apps for other purposes:

PE teachers are using health and fitness apps for other purposes specific game, fitness purpose, BMI calculator, beep test, students test purpose, motivation, meditation, yoga, weight loss and weight gain workouts, to reduce body fat, for zumba videos, for calories burn, record checking, checking current posture during jumps and running, endomondo for root/ path marking and to teach kids.

Analysis of the Research Questions:

Present study has four research questions

1. Is PE teacher aware of technology help for physical activity?

41.86% of PE teachers were using health and fitness apps in their mobile phones and 58 % of PE teachers are not using health and fitness apps in their mobile but 95% of them intend to use technology in future.

2. What is the awareness and technology usage status of the PE teachers?

40.62% of PE teachers were using health and fitness apps very oftenly and 34.37% of PE

teachers were using health and fitness apps from last 3 months.

3. Do they feel that mobile technology can enhance physical activity?

42.42% of PE teachers are using health and fitness apps for awareness of healthy habits and 27.27% PE teachers are using health and fitness apps for goal tracking.

4. What is the perceived usefulness of technology and use of apps?

Perceived usefulness of technology and apps was for workouts for strength and abs, tracking calorie intake and expenditure, tracking BMI, cardio related apps, yoga and meditation.

Discussion:

1. Use of a pedometer may help motivate people to increase walking in the short-term and if continued over a long period of time, walking may help reduce some health risks. (Barilotti L. C., 2001)
2. Based on the available descriptions and functions of the observed techniques in contemporary health behavior theories, people may need multiple apps to initiate and maintain behavior change
3. Mobile applications (apps) have potential for helping people increase their physical activity. (David E. Conroy, Yang C. H., Maher J. C., 2014).
4. Tracking calories via smart phones could encourage users to make healthy choices and thus reducing the overall prevalence and incidence of obesity and related health conditions (hypertension, diabetes type 2, and cardiovascular diseases) within their communities. (Hijazi, Robert R., 2011)
5. Mobile electronic devices have the potential to facilitate weight loss in overweight and obese populations. (Khokhar B., Jones J., Ronksley P. E., Armstrong M. J., Caird J. and Rabi D., 2014)

6. Apps promoting physical activity applied an average of 5 out of 23 possible behavior change techniques. This number was not different for paid and free apps or between app stores. The most frequently used behavior change techniques in apps were similar to those most frequently used in other types of physical activity promotion interventions. (Middelweerd A., Mollee J. S., Wal C. N., Brug J. and Velde S. J., 2014).

Conclusion:

- The result of this study showed that 15% of PE teachers were in contemplation and 12.5% PE teachers were in preparation phase. 30% of PE teacher's physical activity level was sedentary.
- 42% PE teachers use health and fitness apps in their smart phone and 33% PE teachers are not having knowledge about fitness apps. 58% PE teachers are not using health and fitness apps in their smart phone but 95% PE teachers intend to use technology in future.
- 41% of PE teachers are using health and fitness apps more oftenly and 33% of PE teachers are using health and fitness apps in their smart phone from last 3 months.
- 42% of PE teachers are using health and fitness apps for awareness of healthy habits.

Recommendations:

- Conduct intervention trial on population who are in 1st, 2nd and 3rd stage of behavior change model.
- Conduct the same research on large sample for generalization purpose.
- Conduct intervention program to find out physical activity through fitness apps.
- Find mobile apps impact on physical activity level.

- Research can be conducted to understand the impact of apps for adoption, monitor and maintenance of physical activity.
- Research can be conducted to study the physical activity level and adherence to physical activity behavior.
- Find out if Motivation effect of mobile apps sustains for 6 weeks after the invention trial.

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