

EFFECTS OF STAIR-CLIMB MARATHON ON PARTICIPANTS: A CASE STUDY OF STEP-UP EVENT

Muhammad Zulhelmi A. Suhaimi, Umairah M. Tohid, Audrey Fiona Kinson, Nasuha Johari, Fatin Zakiah A. Rahman, and *Mazlina Mahdzar

Faculty of Hotel and Tourism Management, UiTM Puncak Alam, 42300, Bandar Puncak Alam, Selangor, Malaysia

*Email: nina@salam.uitm.edu.my

Abstract

This study examines effects of Stair-climb marathon on participants using a quantitative survey. It was found that participations have a positive effect on the marathon impact towards their health and wellness. Thus, the result indicates the higher the number of satisfaction on stair-climb marathon impact towards their body, the lower are the negative impact of marathon. These results will provide benefits for stair climb marathon on participations and enable them to formulate appropriate strategies for next marathon event. This study also seeks to contribute the positive impact of marathon toward human body health.

Keywords: *Stair Climb Marathon, Marathon impact, Benefits of marathon.*

Article history:- Received: 29 June 2017; Accepted: 05 October 2017; Published: 15 December 2017

1. Introduction

The marathon is a long-distance running race with an official distance of specific kilometres which is about 42 kilometres (26.2 miles), usually run as a road race. The event was instituted in commemoration of the fabled run of the Greek soldier Pheidippides, a messenger from the Battle of Marathon to Athens, who reported the victory. Marathoners are considered elite athletes. The physical and mental tenacity it takes to complete 26.2 miles in a matter of a few hours is impressive and training and racing leads to fit bodies for the runners. Besides that, in this era of globalization marathon is not only held on the track but also on stairs. According to Moore (2014), stairs force you to work against gravity, and this helps build two essential needs for runners' strength and power. Next, stairs are much steeper than most hills indoor stairs have a roughly 65 percent grade, while Boston's Heartbreak Hill is just 4.5 percent. That's why climbing them accelerates your heart rate so rapidly and makes you breathe faster to take in more oxygen. This, in turn, improves your VO₂ max the maximum amount of oxygen you can utilize during intense exercise. In addition, this teaches your body to use that oxygen and convert it to energy quicker (Moore, 2014). A greater VO₂ max means you can run harder and for longer durations. In particular, this study is premised on the marathon impact towards participant.

2. Literature Review

2.1 Marathon

Marathon is a long distance running event that spans a distance of 42.195 kilometres or 26 miles and 385 yards. Marathon introduced in the first modern Olympics in 1896

(Readanddigest.com, 2013). However, the distance became a standard only in 1921. Today, there are a lot of marathon events that have been improvised. For the record, almost 500 marathons are held every year all over the world (Readanddigest.com, 2013).

The oldest marathon is the Boston Marathon that is being held since 1897. In the midst of the unusual marathons that are held internationally, The Great Wall Marathon, The Big Five Marathon in South Africa, The Great Tibetan Marathon in Tibet at an altitude of 3500 meters, The Polar circle Marathon in Greenland at -15 degrees Celsius are the noteworthy ones. Marathon running is very stressful but at the end of the day, the runner feels awfully satisfied if he is able to reach the target (Readanddigest.com, 2013). Running a marathon is an incredible challenge that requires dedication and discipline. Knowing what challenges you may face along the way can help you to be alert, and to be successful in finishing your run (Readanddigest.com, 2013).

2.2 Stair-climb

As previously mentioned by Smith (2017), stair climbing is one of the tougher endurance sports. It is also basically a fast and furious climb of the stairs in some of the nation's tallest buildings. It is a burst of aerobic endurance from the moment you enter the stairwell. Also known for its continuous vertical climb to the top (Smith, 2017). Stair climbing can also be done as a marathon which the aforementioned 'The Great Wall Marathon' can be considered as one of them. Furthermore, stair climbing allows you to get the chance to increase the amount of activity you do by conquering the stairs and taking part in this fun team challenge. If you are looking forward to be more active, this is an excellent way to build additional activity in to your day (Smith, 2017).

The reason why there is a growing interest in stair climbing race is because it is a huge accomplishment (Smith, 2017). Another reason being is that people are realizing if they are capable of walking a 5 kilometre distance, or better yet run one, they can definitely climb the stairs of a building (Smith, 2017). It is extremely worthwhile to get to the top of the building and look down at the street, but equally as enrapturing to complete the race and look up at the building from street level afterward and say "I climbed that building" (Smith, 2017). Additionally, fire fighters have used building stairwells to train for years. Even boxers, football players, runners and other types of athletes use stairs to cross train. To most of the stair climbers, it is the one of the most rewarding, exciting and challenging races ever attempted. What makes this exercise even more interesting is that it is accessible to all people, be it athletes, non-athletes, and even people with lung disease are included (Toohey, 2015).

There are some useful facts about stair climbing that may attract more people to participate in any activity involving a stair climb. Firstly, it burns more calories in half the time than most leading aerobic sports. Secondly, it rewards and honors all age groups. Thirdly, there is no need for special gear and lastly, training can be as simple as climbing the stairs in a building. According to Moore (2014), climbing the stairs force people to work against gravity, and this helps build two vital needs for runners

including strength and power. Moore also adds that stair-climbing “forces you to utilize muscle stabilizers, like the gluteus medius, that get neglected during regular runs,” because you are balancing on and activating one leg, as the other moves to the next step. If you strengthen these areas you will be able to lessen the risk of injury. Most importantly, stair climbing accelerates your heart rate rapidly and allows you to breathe faster to take in more oxygen. This, in turn, improves your VO₂ max which is the maximum amount of oxygen you can use during intense exercise (Moore, 2014).

In regard to the statements above, many people choose stair climbing routines for regular exercise because of the benefits that come with it (Lam, 2012). The most important ones are the vertical movement, readily available, faster gains of benefits, less impact as well as the level of intensity (Lam, 2012). When walking and running, your body moves in a horizontal pattern. Nevertheless, stair climbing allows your muscles to be forced thus resist gravity and move in a vertical pattern. The reason being is that, when you move your body vertically, you place high demands on the lower body (Lam, 2012). What it means by readily available is that stairs can be found almost anywhere such as apartments, office buildings, on streets and in public areas. As a matter of fact, all buildings that have elevators will definitely have stairs for emergency purposes or alternative choice like for those who prefer to stair climb for exercise may opt to take the stairs instead of the elevator (Lam, 2012).

2.3 Impacts of stair-climb marathon

2.3.1 Feel mentally in control of the body

Running tests your mental strength just as much as it does your physical capabilities (Olson, 2014). Your body will always want to give up, which is why you have to make the mind run the body. Hence, practicing stair climbing exercise regularly, can help you control your mind together with your body. Undoubtedly, you have to train your body and muscles to respond and deliver the results your mind requests under performance pressure, but the rest is all mental. Olson (2014) also claimed that running is a constant battle between two voices in your head which one part is telling you it's OK to slow down or even stop, while the other one diligently tells you to do otherwise. It all comes down to the voice within that wins. Despite the body exhaustion from the run, the pure adrenaline and ecstasy pumping through your body is enough to make you feel invincible as you cross the finish line of a marathon. Your mind and body become familiar with the pain consequently delivers pleasure to the runner (Olson, 2014). Improving your performance by exercising your mind is not about being smart, it is actually about developing smarts such as tricks (Palmer, 2014). These tricks come in handy during the run when you fully engage your brain at the same time you engage your body. First thing is to map out the run inside your mind by visualizing success. You can create a mental map of a course that has always beaten you. Picture every uphill, downhill, shady stretch, and turn then run it, step by step, mile by mile, in your mind. By creating a mental picture of a difficult run, you will create a space for it in your brain in some kind of awareness before you do the actual run. By having this picture in place, your mind will have better control over your emotions as you run consequently having better control over your performance (Palmer, 2014). Stretch your mind as well as your body. The more you relax yourself,

the more open your mind can be which leads you to be more focused on your goal, in this case to get in a run despite your body's reluctance. Proper breathing is the key to mental and physical relaxation. This will help you calm your body, relax your mind and enhance your performance by filling your blood with oxygen and energizing your brain and body (Palmer, 2014). Replacing the pain is another trick that works well. This is simply by understanding that hoping for the pain or fatigue you experience while running will not just go away. However, if you have a strategy ready to replace the pain, you can possibly mask it enough so you will not end up dwelling on it (Palmer, 2014). Other than that, runners can try to remove all mental traps. It means that every time you run a familiar route, you mark your progress with landmarks. Environmental cues can be limiting, explains Ungerleider (2014). These cues trigger muscle memory and mental memory, evoking how you felt the last time you ran a certain course. But if you remove the cues, you can get involved in the new scenery, completely lose track of the time and extend your run. Then, you reframe the run. You can't block out adversity, then again you can distract yourself mentally as well as physically.

Always look inward. As Palmer (2014) describes it, separated awareness defines a state of utter inner calm. When you have achieved it, you are completely relaxed about the circumstances around you and make you positively focused on your ability to perform any physical challenges like stair climb marathon. Most important trick is to live in the moment (Palmer, 2014). Portraying a positive attitude is encouraging. Though, few people realize that a positive attitude can help you focus on the task at hand, not indulging in worries about whether you will beat another runner or memories of flubbed runs from the past (Palmer, 2014). Remember that the mind works with the body, so thinking too much can ruin your performance. Palmer (2014) further stated that many runners have boosted their mental toughness using visualization and mantras. You simply need to alter your thinking and you will improve your results.

Apart from that, in order for mental training to be effective, it must be individual, so my next task was to set personal process goals and determine a focus tool. Process goals are the specific physical and mental steps that lead to a performance goal, like setting a PR or finishing a race without walking (Hamilton, 2013). In sports psychology, physical training is also a mental training in sports psychology. What you do in training, you will do on race day. So sticking to your mileage and paces became a process goal. In sport, fatigue is vastly subjective. The brain processes physical cues which is chemical and electrical signals from the muscles as well as environmental information on how we expect to feel and concludes (Hamilton, 2013). But years of research shows that the mind can override the body. Normally, fatigue is a product of perception rather than true physiological exhaustion. Kamphoff (2013) says, fatigue is simply a sign that you must put your mind on something positive.

2.3.2 Prevent illnesses

Stair climbing is a cardiovascular exercise, meaning it works your heart, lungs and circulatory system (Dale, 2014). Cardiovascular fitness is highly related to cardiovascular health, so frequent stair climbing workouts may reduce your chances

of suffering coronary heart disease, strokes, heart attacks and high blood pressure (Dale, 2014). Physical exercise has been said to be healthy for the heart even in patients with various forms of cardiac disease (Dale, 2014). A recent study published online in the European Heart Journal suggested being fit during the transition from the teenage years into adulthood may protect against heart disease decades later. Generally, the study found that most of these runners are very healthy people. Marathon runners are generally healthier and take less sick time than the rest of the population.

Running is really good for our health. It consists of numerous benefits including weight loss, youthful appearance, muscle and bone loss prevention, growth hormone enhancement, prevention of stroke, diabetes, and hypertension. Not to forget, it also lowers high cholesterol level, improves blood clotting, boosts the immune system, reduces stress, and enhances mood (OrganicFacts.net, 2017). Children and teens are advised by doctors to follow a wide-ranging routine of exercises, including a jog or run. This is because running plays an important role in enhancing the level of growth hormones, thus helping in the growth of an individual. Regular running or stair climbing exercise helps increase your height and weight and also your natural energy levels (OrganicFacts.net, 2017). Technically, running sustains the health and cleanliness of blood vessels, which carry blood to and from the brain, thereby fighting against strokes and other related diseases. A marathon like stair climb run helps in maintaining a balanced amount of carbohydrates and sugar in the blood. It simply means that running can prevent terrible diseases like diabetes from developing. A good run burns the surplus amounts of sugar present in the blood, keeping the blood clean and better able to help you lead a healthy life (OrganicFacts.net, 2017). Hypertension or high blood pressure can be reduced to a lower level by following a routine of running. It helps to maintain a number of factors that are responsible for high blood pressure and keeps away the risk of various heart diseases, including atherosclerosis. Cholesterol level in human body can be controlled through frequent running exercise. Thus, it controls a number of cardiac disorders and maintain the normal functioning of the human heart (OrganicFacts.net, 2017). Running provides protection against a number of injuries by improving the process of blood clotting. The process of quickly healing wounds is fuelled by an effective way of running. In addition, running is also good for strengthening the immune system, therefore making the body capable of fighting against a number of serious diseases and infections. Regular runners more often than not possess stronger immune systems compared to the less active ones (OrganicFacts.net, 2017).

As to the stair climbing run, this exercise works on our bones and muscles, improving strength, bone density and muscle tone. This is particularly important for women in sedentary office jobs as they have a considerably higher osteoporosis risk than men (Stepjockey.com, 2017). This type of Incidental physical activity is also highly associated with improved mental health, causing our bodies to release endorphins, the so-called feel good hormones. It also provides the key factors in managing everyday stress and tensions such as time to think and reflect (Stepjockey.com, 2017).

2.3.3 Stay physically attractive

Like all the other benefits of stair climbing, it continues to provide the whole lower body with an effective training which works all of your major lower-body muscles including glutes, hamstrings, quadriceps and calves. From what it is worth, having a curvy physique is now a very famous trend. Women are considered beautiful the curvier or more toned their physique is. Luckily, stair climbing strengthened gluteal muscles that acts as an added benefit of making the butt look toned and firm. (Dale, 2014). Climbing stairs can also help you control your weight by burning more calories. For a 120-lb person, stair climbing burns around 146 calories per 20-minute session. For those who want to lose weight faster, this is one of the best exercise to practice as a routine. A previous study by scientists at the University of Roehampton in England found that climbing five flights of stairs is fairly equal to ascending of around 16.4 yards or 15 meters for five times a week burned an average of 302 calories. They recommend taking one step at a time rather than two because doing so uses more energy as it takes longer to climb each flight. (Dale, 2014).

In line with the statement above, people suffering from an accumulation of surplus fat on their body are among the most prominent lovers of running. A slim trim physique is easily gained with the help of running (Dale, 2014).

Above all, running is helpful in delaying the effects of aging on the human body. It is well known for reducing the pace of aging, which keeps a person physically young, while also keeping them mentally adept and alert as well. Running is also applicable of nourishing the skin and adding a healthy glow subsequently making a person look naturally beautiful (Dale, 2014). Nonetheless, running contributes in reducing the loss of muscles and bones, which is a common problem that happens for a number of reasons. However, regardless of these reasons, running is considered one of the most significant exercises to maintain the consistency of these body parts and is helpful in keeping your body in good shape for years to come (Organicfacts.com, 2017).

2.3.4 To stay in good physical condition

Precisely, stair climbing is a great training for running. In addition to strengthening the muscles around the knees, stair running builds stamina and overall lower-body strength, works the gluteal muscles and quadriceps more than road running and is a highly efficient workout in terms of the amount of time spent at very high intensity (Schwartz, 2017). In addition to being a great cardio workout, running stairs doubles as strength training, targeting some of running's most vital muscles such as core, hips and glutes. You will have a stronger physical ability and look good as well. In fact, the act of pushing off of each stair is similar to power training exercise, meaning that not only do you reap the injury-prevention benefits of additional strength, but you also increase your legs' efficiency so you can cover more ground faster (Schwartz, 2017).

As mentioned before, stair climbing is the best way to reduce body fat and burn calories. In just under half an hour, it provides a free, convenient, time efficient and intensive workout with enormous benefits for anyone up to the challenge (Schwartz, 2017). The best part is that, running on stairs often can increase your stamina and

energy level. This exercise exposes the legs, ankles and knees to less pressure from impact than running on concrete. Running puts a considerable amount of pressure on the feet. As mentioned earlier, running stairs strengthens all the muscles in your legs since most of us spend the majority of our days sitting, our butt muscles, are not as strong as they should be, so at times like this is when stairs in your work building come in handy. Stair climbing offers the benefit of less impact to the body while reaping more aerobic and muscle-building benefits. (Schwartz, 2017). According to Men's health magazine, a short, high-intensity exercise is just as effective at improving your aerobic fitness as doing cardio at a long, low-intensity. Running stairs boosts your aerobic capacity, while improving your overall strength. It is a great addition although it is not a substitute for long runs.

2.3.5 Having something in common with other people

Nowadays, marathon is a very trendy sport held worldwide because people are more aware of living a healthy lifestyle. More and more people are jumping on the marathon bandwagon in order for them to feel the relatedness with those who are active in this marathon sport. Some of them run with friends to make the run even more enjoyable (HolidayInn.com, 2017). You can never underestimate the social side of running. It is considered as one of the most common reasons people start and carry on doing it. Finding a local running club or gathering some friends or colleagues to run with you can make every session both easier and fun (HolidayInn.com, 2017).

Looking to the other runners for inspiration is also a good way to start. You can find inspiration from athletes you most look up to. Many big-name runners have written books about their amazing achievements and how they pushed themselves to achieve greatness. Read about someone who has inspired you to see what you can take from their lives into your own training (HolidayInn.com, 2017). Marathon also allows extreme people to connect with similar others (Geher, 2015). It is an essentially extreme effort. There are costs and benefits to this fact. For instance, running a marathon is a highly social enterprise and when you are out on that course, you naturally befriend pretty much anyone who is running at your pace and connects with them even if only for a subset of the race (Geher, 2015). Marathon activity is categorized by extraordinary friendship and as we marathoners are, as described above, sometimes a "little bit special". An organized marathon provides a great opportunity for those among us who have "marathoning tendencies" to connect with similar others. And connecting with similar others is a basic part of human social behaviour (Tversky, 1997). There may be numerous reasons for which athletes take part in sport, such as to seek new sensations, conquer new challenges, or to gain recognition. In this respect, athletes are seeking certain goals. As we are the non-athletes, we venture into this marathon or run because we want to take part in this new sensations and become healthier. According to self-determination theory (Deci & Ryan, 1985, 1991), through this sport involvement comes a set of goals and these goals are fueled by psychological needs. Three psychological needs are especially crucial in the development of human action are the needs for autonomy, competence, and relatedness (cited in Vallerand & Losier, 1999). Richer and Vallerand (1993) stated that the need for relatedness pertains to the desire to feel connected with significant others. These are people who around work, school, fun, social media, and

all the other hobbies that they are interested in, have adopted this running activity. They prefer the culture of health and living an active lifestyle and the benefits that come from running (Quinlan, 2010).

3. Methods

3.1 Research Design

The descriptive cross sectional design was used to investigate the “Step Up” marathon impact towards the runners whom participated in the running event in UiTM Puncak Alam. The respondents were individuals from different background who participated in the “Step Up” marathon on the 20th May 2017.

3.2 Sample & Sampling Method

A self-administrated survey was conducted for data collection. A total of 91 respondents participated in the survey comprised of 49 women and 42 men. A convenience sampling technique was used to select respondents by using online survey questionnaire. As suggested by Roscoe (1975), a sample of more than 30 and less than 500 is sufficient for most research. All the characteristic of each unit samples resembled the proportion of respondents’ nationality with 94.5% Malaysian and 5.5% others, meanwhile, the age range from the highest percentage is 21-30 years old (76.9%) and the lowest percentage is 40 years old and above (3.3%).

3.3 Construct of Questionnaire

Ordinal and interval scale were used to collect data from the respondents. Demographic variables were measure using ordinal scale and marathon impact were using interval scale. The questionnaire consists of 2 sections and designed to determine the impact of “Step Up” marathon. Section A was composed of demographic items, while items in Section B explored the impact of marathon to participants. All items in Section B was rated using a five-point Likert Scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). Reliability test using the Cronbach’s alpha coefficient are conducted to determine the consistency of the questions. In this study, the reliability is 0.86 (>0.60). Thus, the consistency of the questions in this study is reliable.

3.4 Data Analysis

The purpose of this study is to find out on the “Step Up” marathon impact towards the participants. Data collected through the medium of questionnaire and will be analyzed through Statistical Packages for the Social Sciences (SPSS). SPSS is a very general, chiefly linear, chiefly cross-sectional statistical modelling technique. SPSS analysis used to ensure completeness and consistency.

4. Findings

4.1 Descriptive statistic

In this study, frequency analysis had been used to analyze the demographic characteristic of the respondents through gender, age, nationality, education level and marital status. The table 1 shows that 53.8% of the respondent is from the female students while 46.2% is from male students. The majority of the respondent is between ages 21-30 years old. Most of the respondent is from the bachelor level students. 94.5% of the respondent are Malaysian while 5.5% is from other countries. The majority of the respondents for the step-up marathon race are single participants. Table 1 demonstrate the demographic profile of the respondents.

Table 1. Demographic profile of respondents

<i>Demographic Characteristics</i>	<i>N=91</i>	<i>Frequency</i>	<i>Percent(%)</i>
gender	Male	42	46.15
	Female	49	53.85
Age	<20	9	9.89
	21-30	70	76.92
	31-40	9	9.89
Nationality	>41	3	3.30
Education level	Malaysian	86	94.51
	Others	5	5.49
	SPM	10	10.99
Marital status	Diploma	6	6.69
	Foundation	2	2.20
	Bachelor	56	61.54
	Masters	1	17.58
	PhD	1	1.10
	Single	74	81.32
Married	17	18.68	

4.3.2 Results and Discussions

4.3.2.1 Feel mentally control of body

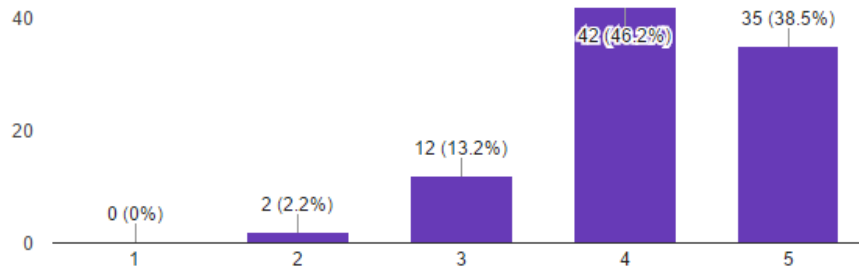


Figure 1: Impact in terms of feel mentally control of body

The figure 1 shows that the majority of the respondents agree that Step Up event give them impact in term of make them feel mentally control of their body.

4.3.2.2 Prevent illness

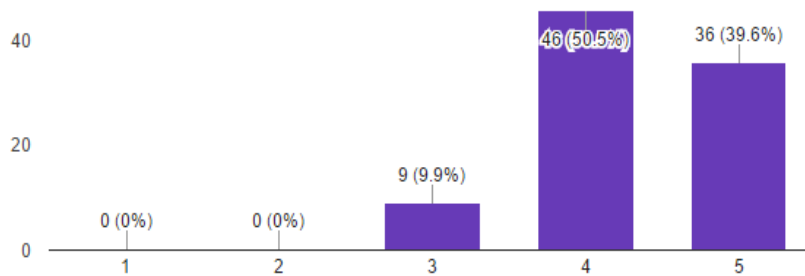


Figure 2: Impact in term of prevent illness

Meanwhile, figure 2 shows that majority of the respondents stated their agreement that participating Step up event could help them in preventing illness.

4.3.2.3 Stay physically attractive

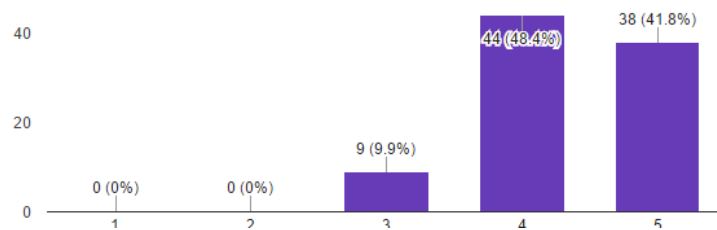


Figure 3: Impact in term of staying physically attractive

Figure 3 depicts the Step up event can help them to stay physically attractive. From the figure, majority of the respondents agreed that participating Step up event can help them to stay physically attractive.

4.3.2.4 To stay in good physical condition

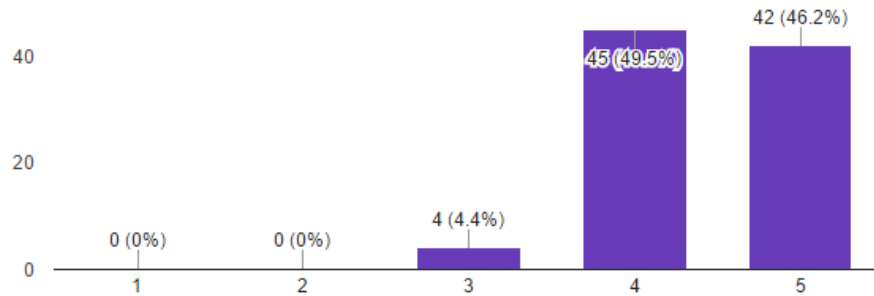


Figure 4: Impact in term of stay in good physical condition

Figure 4 shows that 46.2% of the respondents strongly agrees that participating the Step up event can help them to stay in good physical condition. The figure also shows that the majority of the respondents also agrees that participating Step up event can help them to stay in good physical condition.

4.3.2.5 Have something in common with others

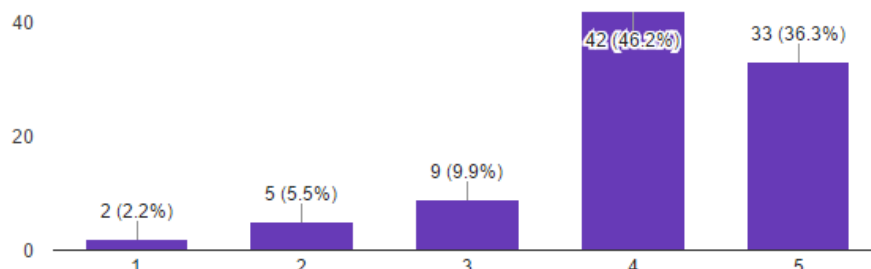


Figure 5: Impact in term of have something in common with others

It was also found that the majority of the respondents (46.2%) agrees that participating Step up event can give them have something in common with others.

4.2 Recommendations

Based on the analysis, the major impact of Step up event that we can see from the survey analysis that we distributed to the participant, most of them believes that the greater impact of this event is it can help them to prevent illness. For future event, it should focus on applying healthy lifestyle. This is due to the most concern effect of participants toward event marathon which is prevent illness. In order to recover the study limitation, the researcher recommend that qualitative methods could be explored in the future.

5. Conclusion

This research used the descriptive cross sectional design are focused on identifying and evaluating the “Step Up” effects towards the runners whom participated in the running event held at UiTM Puncak Alam. The result of quantitative survey shown that those participants have a positive effect on the marathon impact towards their health and wellness. This outcome also provided advantages for stair climb’s participants and empower them to have an ideas about appropriate strategies for next marathon event. A self-administrated survey was conducted to 91 respondents participated in the survey are designed to explore the impact of marathon to participants. The study successfully come out with the result of data that most of the participants believe that the greater impact of this event is that it can help them to prevent illness. The “Step Up” event has positively create awareness to the community about the importance of keeping a healthy lifestyle. This kind of event is encouraged and highly recommended to be done in the future.

References

- Dale, P. (2014). What does stair climbing do for your body? Retrieved from <http://www.livestrong.com/article/464931-what-does-stair-climbing-do-for-your-body/>
- Freeburg, N. (2014). Why you should start running stairs today? Retrieved from <https://minneapolisrunning.com/why-you-should-start-running-stairs-today/>
- Gormen, M. O. (2007). Mind and body work together. Retrieved from <http://www.runnersworld.com/running-tips/mind-and-body-work-together>
- Grace, S. H. C. (2015). Perceived impact of hosting a sport event in a destination: A case study of the Hong Kong Rugby Sevens. *Journal of Management and Sustainability*, 5(3).
- Hamilton, M. (2013). Train your brain to run your best. Retrieved from <http://www.runnersworld.com/psychology/train-your-brain-to-run-your-best>
- Jin, W. K. (2010). The worth of sport event sponsorship: An event study. *Journal of Management and Marketing Research*.
- Jonathan, N., & Swart, K. (2008). Sport tourism event impacts on the host community: A case study of Red Bull Big Wave Africa. *South African Journal for Research in Sport, Physical Education and Recreation*, 30(2).
- Jonathan. (2014). The benefits of stair climbing. Retrieved from <http://hudsonvalleyrunning.com/the-benefits-of-stair-climbing/>
- Lam, C. (2012). Stair climbing vs running. Retrieved from <https://www.runsociety.com/training/stair-climbing-vs-running/>
- Neth, H. J. (2014). Long distance running: Running for a long life. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3931849/>
- Olson, S. (2014). What a half-marathon did to me mentally and physically: A food and fitness guide. Retrieved from <http://www.medicaldaily.com/what-half-marathon-did-me-mentally-and-physically-food-and-fitness-guide-306930>

- Read and Digest. (2013). What is marathon? Retrieved from <http://readanddigest.com/what-is-marathon/>
- Smith, K. (2017). Intro to stair climbing. Retrieved from <http://www.active.com/fitness/articles/intro-to-stair-climbing>
- Solan, M. (2014). Why stair climbing is good for runners. Retrieved from <http://www.runnersworld.com/running-tips/why-stair-climbing-is-good-for-runners>
- Step Jockey. (2017). Health benefits of stair climbing. Retrieved from <https://www.stepjockey.com/health-benefits-of-stair-climbing>
- Taks, M. (2015). Impacts and strategic outcomes from non-mega sport events for local communities. *Journal European Sport Management*, 15. Retrieved from <http://dx.doi.org/10.1080/16184742.2014.995116>