



ISSN: 2456-0057

IJPNPE 2022; 7(1): 412-419

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www.journalofsports.com

Received: 23-10-2021

Accepted: 04-12-2021

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Assessing the diet, exercise and wellbeing of the Sikkim armed police

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DOI: <https://doi.org/10.22271/journalofsport.2022.v7.i1g.2504>

Abstract

The study was conducted for 200 recruits of the Sikkim Armed Police (SAP)-it highlights that the proper integration of a good diet and exercise together shows much better results as compared to their individual action. As the saying rightly goes “All work and no play makes Jack a dull boy”, similarly for our body too, merely doing physical exercises regularly without monitoring the food intake will not show desired results on our health. It will eventually not give a proper result/outcome. Thus, it has to be a decent amalgamation of both diet and exercise. The recruits who were exercising regularly and was taking a good diet overshadowed the ones who were not doing so in various ways-

- The fitness level of the recruits was much better.
- Recruit's ability to take up various challenging tasks during the training were higher.
- Their stamina level and performance were comparatively better when subjected to various activities.
- Their stress level was absolutely lesser or it was not there at all.
- Their mental health was much better.
- Their ability to counter various diseases like metabolic syndrome was way better.

Keywords: Diet, exercise, wellbeing, mediterranea diet, aerobic exercise, metabolic syndrome, recruits

1. Introduction

Changes in diet are important in treating metabolic syndrome. According to the AHA, treating insulin resistance is the key to changing other risk factors. In general, the best way to treat insulin resistance is by losing weight and getting more physical activity ^[1].

Exercise helps people who are overweight or obese by helping to keep and add lean body mass, or muscle tissue while losing fat. It also helps you lose weight faster than just following a healthy diet because muscle tissue burns calories faster ^[1]. Exercise can also treat metabolic syndrome. In fact, it can help correct each of the five abnormalities.

1. Abdominal obesity (waist circumference 40 inches or more)*
2. Fasting triglyceride levels of 150 mg/dL or higher
3. HDL cholesterol levels below 40 mg/dL**
4. Blood pressure of 130/85 mm Hg or higher
5. Fasting blood sugar of 110 mg/dL or higher

*35-inch waist for women**HDL below 50 for women

People who have as few as three of the five abnormalities qualify for the diagnosis; the presence of four or five makes the outlook even worse ^[2].

Various research has shown that inculcating a Mediterranean diet and Aerobic exercise in particular in our daily life would be good counter measures for combating the metabolic syndrome, and also to maintain overall fitness.

Both the recommended Mediterranean diet and Aerobic exercises are shown in the images below-

2. Methods

The data that was obtained was collected through survey questionnaires, which were handed over to the SAP recruits over the course of the research study.

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This research study has used a mixed-method approach that is a combination of both qualitative and quantitative methods. There are some sections where the qualitative method is used and there are other sections where the quantitative method has been used.

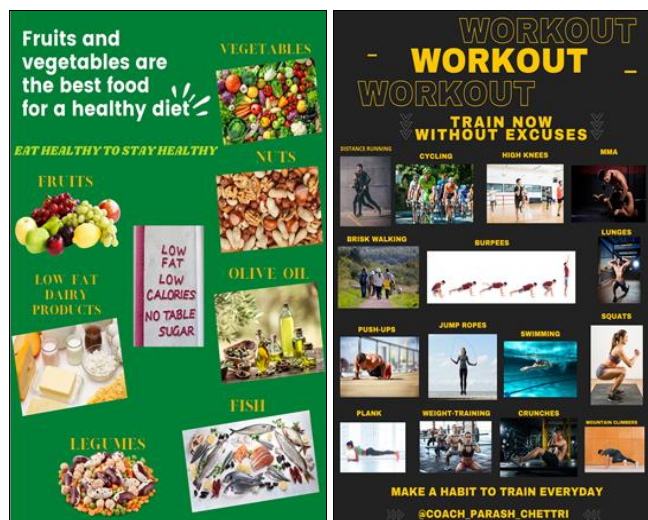


Fig 1: The recommended diet and exercise for metabolic syndrome and overall fitness (designed by Parash Chettri-MMA trainer of the Indian Army and Police forces, Nutrition Advisor and Research Scholar).

2.1 Participants

The participants were the recruits of the elite state force of Sikkim, India- the SAP (Sikkim Armed Police). The study was conducted at the SAP (Sikkim Armed Police) camp in Pangthang, East Sikkim.

2.2 Diet

For researcher Keys, the eagerness about diet as a general medical condition started in the mid-1950s in Naples, where we noticed exceptionally low rates of coronary illness related to what we later came to call the "great Mediterranean diet." The core of this diet is for the most part vegan and contrasts from American and northern European weight control plans in that it is a lot lower in meat and dairy items and utilizations natural products like the fruit for dessert. These findings encouraged the researchers to extend the research in the Seven Countries Study, in which they exhibited that saturated fat is the significant dietary devil [3].

This assemblage of proof firmly recommends that consuming more foods grown from the ground could contribute both to clinical nourishment treatments, as a feature of a bundle of therapies for conditions like type 2 diabetes, coronary diseases, malignant growth, and obesity, and to the anticipation of these sicknesses [4].

As of late, the Mediterranean diet has been widely related to good well-being results and a better quality of life [5]. Higher adherence to a Mediterranean-eating regimen is related to an altogether lower chances proportion of having MetS (metabolic syndrome) in a populace with a high danger of cardiovascular disease [6].

The Mediterranean dietary regimen can be handily embraced by all populace Gatherings and different societies and cost-effectively serve for essential and optional avoidance of MetS and its individual parts [7].

2.3 Exercise

The latest examinations in patients with established coronary illness recommend that a high relative, yet aerobic, the intensity of the exercise training further develop the intrinsic pump limit of the myocardium, an impact not recently accepted to happen with exercise training [8].

The results from the study conducted indicate that aerobic exercise has various beneficial short-term and long-term effects on psychological outcomes [9].

The outcomes from one research study recommend that adding aerobic exercise to a dietary weight-loss program have been shown to improve the MetS in obese ladies, contrasted with the implementation of the diet alone program [10].

Findings from a scientific study also propose that in sedentary people with MetS and low starting CRF (cardiorespiratory fitness) level any type of aerobic exercise of 16 weeks with a recurrence of three times each week is an adequate stimulus to raise CRF [11]. A regular dose of aerobic exercise is found to increases HDL-C (High- density lipoprotein-cholesterol) level. Also, it was noted that aerobic exercise was much more effective in people with initially high total cholesterol levels or low body mass index [12]. After sound physical exercise, the glucose level of diabetic patients would in general stabilize, and the glycosylated haemoglobin level diminished.

The glucose levels of patients who didn't partake in physical activities were not steady, and their glycosylated haemoglobin levels did not show any improvement [13].

Aerobic exercise can incredibly help with lessening the guaranteed impacts of metabolic syndrome (MetS). Also, vigorous exercise is related to thoughtful actuation and versatile reactions to support muscle commitment, changes in the arrival of Orexin A, which is a pleiotropic neuropeptide [14].

3. Results and Discussion

As mentioned earlier 200 recruits had participated in the study, the results show the following-

a) Do you smoke?

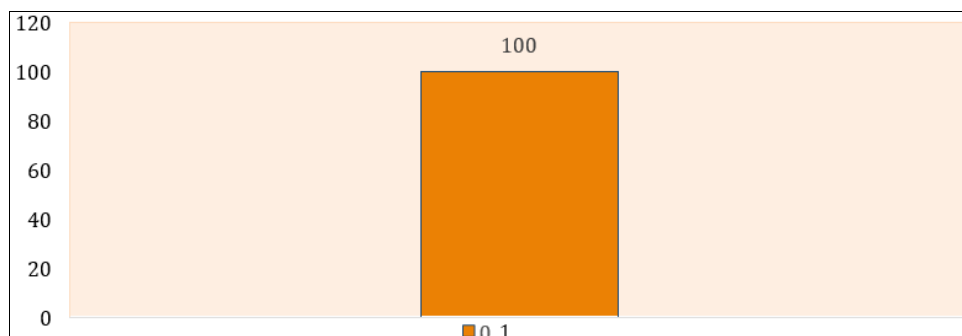


Fig 2: Smoking Habits

When checked about smoking habits, the SAP recruits have replied unanimously. All of them abstain from smoking. So out of the 100% of recruits, none of them has the habit of smoking (as shown in the diagram).

Such an impressive result this was, by looking at the data I was so motivated and inspired by the recruits. Though the training area was mostly cold, it couldn't act as a trigger for them to get inclined towards the habit of smoking. It also reflected that the training that was provided to them by the police officials was not only training their body, but it was also training their mind very well with strong thoughts, good culture and heroism.

b) Do you drink alcohol at all?

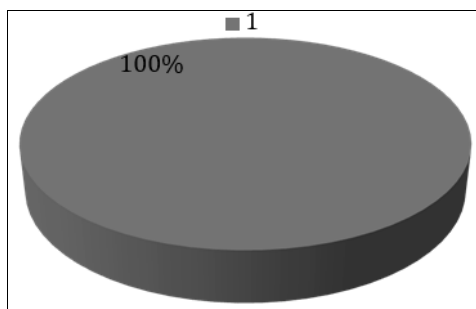


Fig 3: Alcohol consumption

When inquired about alcohol consumption, the recruits had a common answer that is shown in the pie chart below. Once again 100% of recruits abstained from consuming alcohol. Similar to the result for smoking, the result for drinking alcohol was also very impressive.

As mentioned before the place of the training was really cold, however, it couldn't drag our Brave-hearts to get inclined towards the habit of drinking alcohol.

It again shows that the training that was provided to them by the police officials was not only training their body, but it was also training their mind very well with strong thoughts, good culture and heroism. Hats off to the police department, their work, culture and the service.

c) During working hours, how many days of the week do you usually eat junk foods that are high in fat, salt or sugar (such as deep-fried foods, hot chips, pies, chocolates, lollies, etc)?

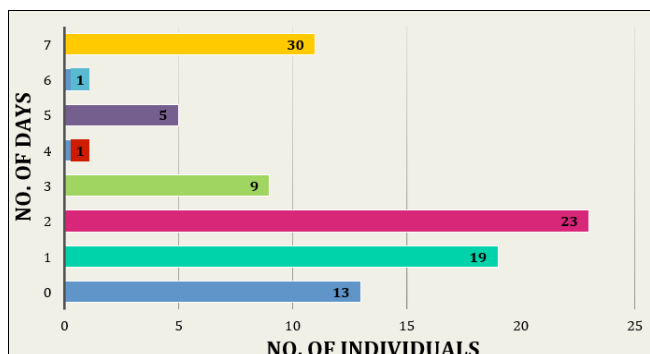


Fig 4: Junk food consumption

The next question was regarding the recruit's junk food consumption. Their answers were recorded in the form of the above bar graph. The results show that out of the 100% of the recruits, 23% of them consumed junk for 2days, whereas 19% of them had junk for just a day. 30% of the recruits ate junk

for 7days a week, on the other hand, 13% of them did not have the junk at all. Amongst them, 9% of the recruits consumed junk for 3 days, and 5% of them ate junk for 5days weekly. Around 1% of them ate junk for 6 and 5 days respectively.

So, the spark of the results was that there were 13% of the recruits who did not take junk food at all during working hours. No doubt that the 13% were highly aware of the risk associated with junk food consumption, the others had a little idea about it and few were ignorant too as they consumed it knowing that it was not good for their health.

d) How many times a day do you usually do: 20 minutes or more of vigorous- intensity physical activity that makes you sweat or puff and pant (for example, heavy lifting, digging and jogging)?

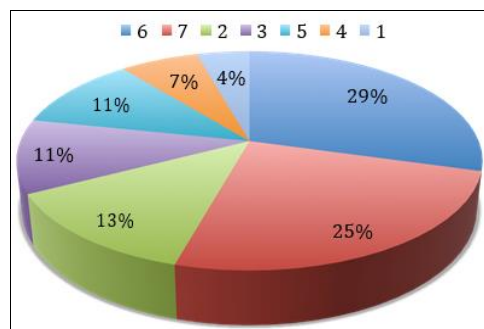


Fig 5: Physical activity

This question was about physical activity; the above pie distribution shows how many times they got involved in a 20-min (or more) vigorous-intensity physical activity in a day. Out of the 100% of the recruits, 29% did it 6 times whereas 25% performed it 7 times. 13% of them performed it twice a day. 11% of them performed physical activities 3 times a day and also for 5 times a day according to their convenience. The remaining 7% of recruits performed it for 4 times a day.

The results of the 20 minutes or more of the vigorous-intensity activity showed that everyone was involved in the physical activity. We can see variations in the diagram, however, the variations had nothing to do with the physical capability, and it was just that a group of recruits would be put into a particular task (the task is what sets the activity) and the other group into the other task for many months, after that the work is shuffled. That is the reason for the variation. Perhaps the credit goes to the department for engaging them in such splendid activity during the course of the training.

e) How many times a day do you usually do: 30 minutes or more of walking (for example, walking from place to place for exercise or recreation)?

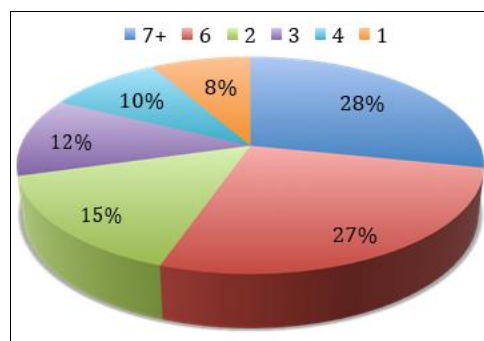


Fig 7: Physical activity

Another question was about how many times a day do they usually perform 30 minutes (or more) of walking. The recruit's answers were recorded on a pie distribution. It was observed that 28% of them performed such activity 7 (or more) times in a day. Again, 27% of them did walk 6 times a day and 15% of them were actively walking twice a day. Around 12% of the recruits were positively walking thrice in a day. 10% of the recruits were performing such activity four 4 times a day, and lastly, 8% of them walked only once daily. The results to track another physical activity (walking) also generated a great piece of information just like the previous data; here also the data shows that all the recruits were involved in this activity during the course of the day. Also, the data did show some clear variations in the no of times the activity was performed. However as mentioned before, this was not because of the difference in the physical capabilities but was because of the type of work that they were assigned during their training period.

f) How many times a day do you usually do: 30 minutes or more of other moderate- intensity physical activity that increases your heart rate or makes you breathe harder than normal (for example, carrying light loads, slow cycling)?

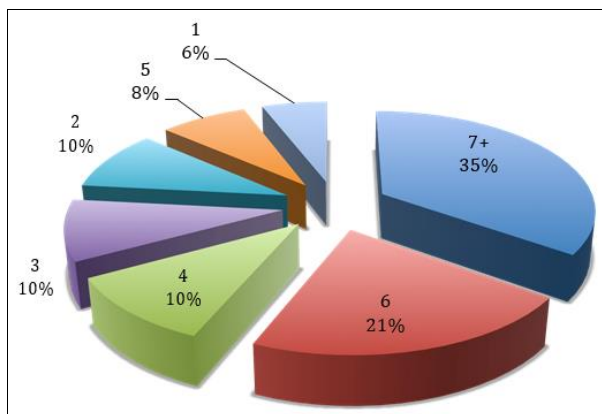


Fig 8: Physical activity

There was yet another question related to their physical activity. The question was how many times did they perform 30 min (or more) of other moderate-intensity physical activity that increased their heart rate or made them breathe harder than normal? Their stated answers are clubbed into a pie chart.

Here we can see that 35% of the recruits performed such activity 7 times (or more), in a day. 21% of them reveal that they do such activities 6 times a day. 10% of the recruits spend 4 times a day in such physical activity. It has also been depicted that for another 10% of the recruits, these activities were either performed thrice or twice a day. 8% of them have been actively doing them around 5 times a day. Finally, it was seen that 6% of recruits have been exercising just once a day. We can clearly see from the diagram that everyone was involved in the 30 minutes or more of the moderate-intensity exercise. Also, we can spot the difference between the numbers of times this activity was performed by the recruits. Again, this is more to do with the kind of work that the recruits were put into and it was not to do much with their physical potential.

g) On average, during your normal working day, how many glasses (250 ml) of fluid (water, cordial, soft drink, juice, milk, coffee, tea) do you consume?

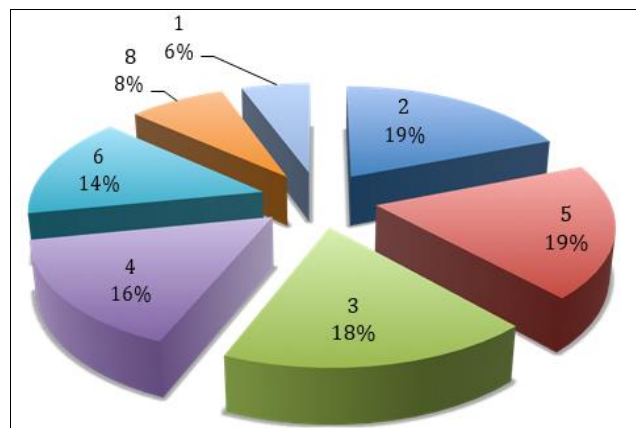


Fig 9: Fluid Intake

Now comes the question based on fluid intake- the above pie distribution depicts the fluid intake habit of the recruits on a normal working day. The results reflect that 19% of people drank milk and cordial, while 18% of them consumed soft drinks. Out of them, 16% of people, preferred to drink juice on a normal day, whereas 14% of them opted for coffee. Lastly, 8% of the recruits would have tea on average, and the remaining 6% chose to drink water.

The overall data shows that during working hours apart from the water the recruits also prefer various other kinds of fluids for their refreshments. It was also interesting to note that only 22% of the recruits out of the 100% chose to drink tea (8%) and coffee (14%) respectively, which in general according to the cold place the percentage would have been more.

The recruits had their own preferences for refreshments and there is nothing to worry about, it is just that the percentage of the recruits who were taking juice and soft drinks were suggested to limit their intake, as the sugar content in those drinks are very high.

h) On average, during your normal working day, how many glasses (250 ml) of plain drinking water do you consume?

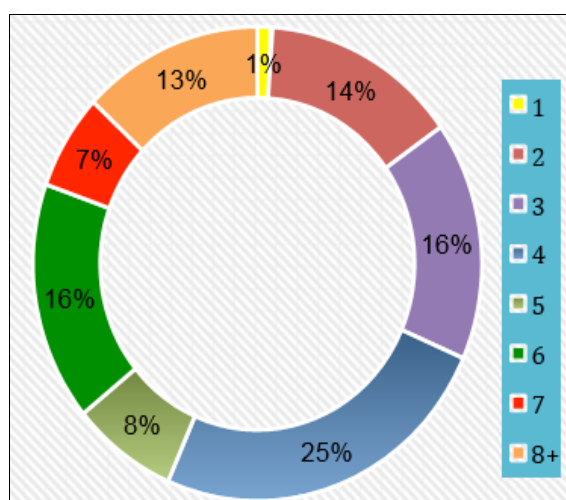


Fig 10: Water Tank

The SAP recruits were also asked about their water intake during their normal working day. Their responses are highlighted in the form of the doughnut pie – distribution (as shown above). Out of the 100% of the recruits, around 25% of the recruits, drank 4 glasses of water in a day. There were 16% of recruits who drank 6 glasses and 3 glasses of water respectively. 14% of the recruits, have been drinking 2 glasses whereas 13% of them, drank more than 8 glasses of water. The remaining 8% of the recruits preferred drinking 5 glasses of water, 7% of them made it a point to drink 7 glasses of water. Lastly, 15% of recruits drank just one glass of water on average.

The data gathered highlights that a big percentage of the recruits were not drinking a decent amount of water, 15% just drank 250ml of water (1 glass) a day, 16% drank 3 glasses of water a day and the other 14% drank only 2 glasses of water a day.

This was a matter of concern to be addressed immediately, so the recruits were given Valuable information about the importance of drinking water and hydration.

i) Why do you usually choose fast food instead of something you prepared yourself?

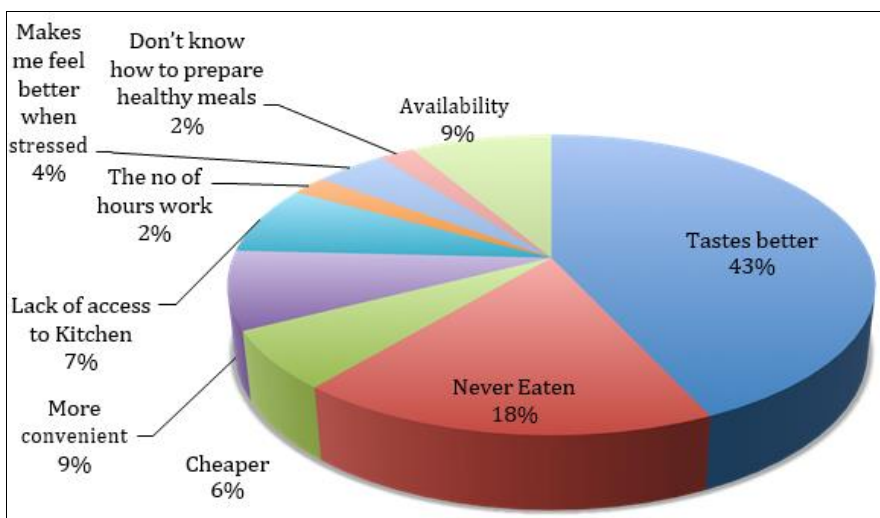


Fig 11: Why do you choose fast food?

Next was the question where they were asked- why did they prefer fast food as compared to self-prepared food? Various answers were recorded, from the total of 100%, there were 43% who said that they prefer it, as it tastes better. However, 18% of them mentioned that they had never eaten fast food. 9% of people find fast food to be more convenient to eat, and the other 9% of people have mentioned that it's readily available. There were 7% who said that they do not have access to a proper kitchen, as a result, they go for the portion of fast food. 6% of people find it cheaper, so they prefer fast food. Interestingly, 4% mentioned that having fast food makes them stress-free. Also, there were 2% who do not have any idea about preparing healthy foods. Lastly, 2% of the recruits mentioned that due to their busy schedule, fast food is easy to grab when they are hungry and to get back to their scheduled work.

The data throws light on interesting things, we can see that 43% of the recruits were taking the fast food just because it tastes good, and there were also 18% of the people who didn't eat fast food at all. Also, there are other reasons given in percentage, which is shown in the above pie chart. What I think is all of these boils down to following a simple diet routine (which was addressed to the recruits post data collection), if the recruits can substitute the fast foods with healthy foods by making it taste good, like by adding the ingredients of choice. This simple process can cut down the percentage of junk food intake, which will be a great antidote in reversing many health issues (like metabolic syndrome) which fast food invites.

j) In the past four weeks, how often did you feel tired for no good reason?

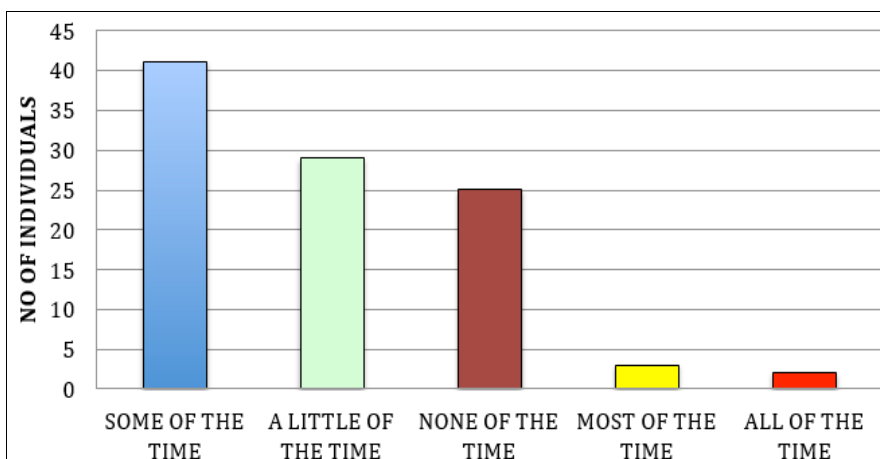


Fig 12: Wellbeing

Again, the recruits were asked how often they felt tired for no good reason their answers showed variations. The recorded answers are displayed on the bar graph as shown above. There were 41%, who felt tired some of the time, and 29% of them were tired a little of the time. Interestingly, 25% of them did not feel tired at all. Also, there were 3% of the recruits who felt tired most of the time, and lastly, there were 2% who said that they felt tired all the time. So the results show that 5% of the recruits felt tired most of the time and almost all the time as compared to the remaining 95% who felt tired either some of the time or little of the time as highlighted in the diagram. The results also show that 17%

of the recruits did not feel tired at all. It was found that the physically and mentally active recruits did not feel tired at all, and the decrease in these attributes lead to an increase in the percentage of getting tired. Also, for the recruits that were feeling tired most of the time or all the time it was not basically because of the workload but was also because they didn't like many daily chores, which they had to perform regularly.

k) In the past four weeks, how often did you feel nervous?

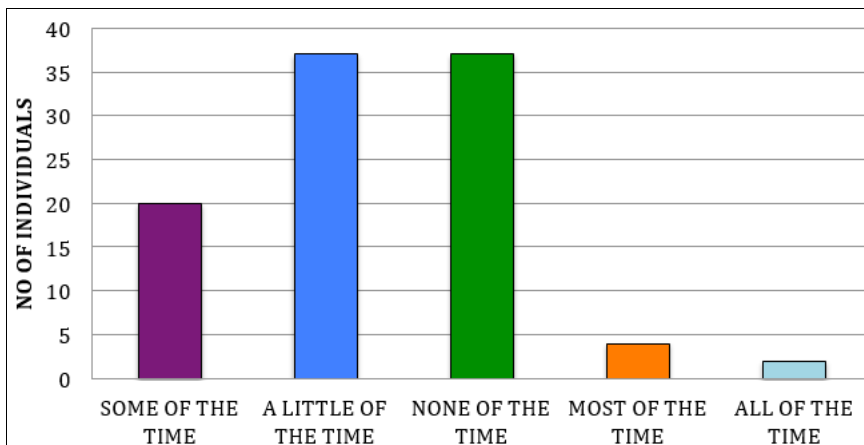


Fig 13: Wellbeing

The SAP recruits were also asked about- how often they felt nervous in the past four weeks, and their answers were recorded in the form of bar graphs. Out of the 100%, 20% of them mentioned that they were nervous some of the time. 37% of them were nervous a little of the time and the same number of people i.e. 37%, was not nervous on any day of the week. 4% said that they were nervous most of the time, and 2% of them were nervous all day of the week. When inquired about being nervous, the results reflect that a small percentage (6%) of the recruits felt nervous most of the time and all the time. However, a big percentage did feel nervous a little of the time and another percentage felt nervous some of the time. There were also a good percentage

of the recruits that said that they did not feel nervous at all as given in the diagram. The nervousness was mostly because of the lack of confidence when it came to various tasks that the recruits were supposed to perform during their training time. Whoever was confident performed well in each and every type of task and they didn't feel nervous at all, but if the recruits were not able to do well in one or many tasks their confidence dropped as a result the nervousness started to build up.

l) In the past four weeks, how often did you feel hopeless?

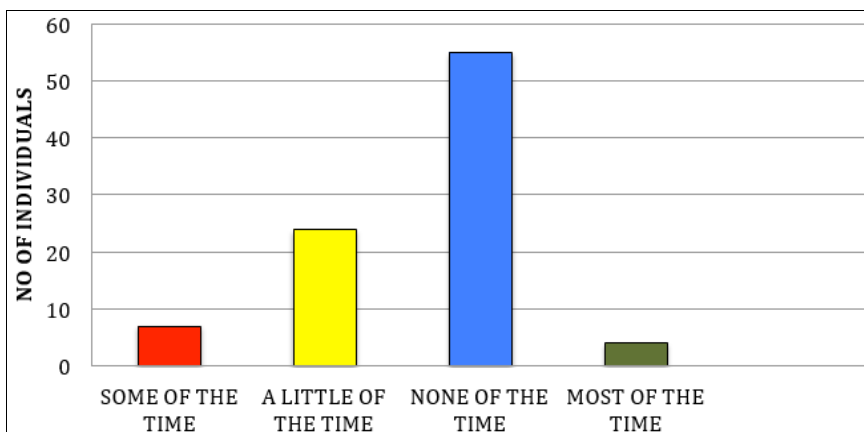


Fig 14: Wellbeing

They were also asked how often in the past four weeks, they felt hopeless? It was interesting to note that 55% of recruits were not hopeless at all during any day or time of the week. 24% of the recruits felt hopeless for a little of the time. Around 8% of

recruits were hopeless some of the time whereas 4% of the recruits felt hopeless most of the time during the past 4 weeks of the month. The data show that a major percentage of the recruits didn't feel nervous at all, however, it was not expected to see that

4% of the recruits felt hopeless most of the time. There were also some intermediate results too as shown in the diagram. Addressing the recruits about how to build up confidence, and instructing them that it is ok to make mistakes, as it is part of the journey will surely act as an antidote to cut this kind of

negativities down.

m) How often would you attend a workplace health and wellbeing activity (if offered frequently)?

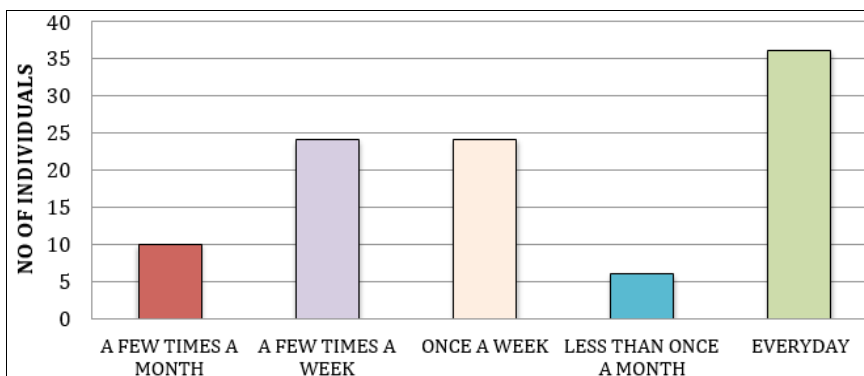


Fig 15: Workplace health and wellbeing activity

The recruits were asked how often they would attend a workplace health and wellbeing activity (if offered frequently)? The bar graph below displays the recorded responses. Here out of the 100% of the recruits, 36% of them would want to attend it every day, 24% would want to attend it once a week and 24% would want to attend it a few times a week respectively. About 10% of recruits said they would like to attend it a few times a month.

Lastly, 6% of the recruits mentioned that they would like to attend it for less than once a month. The results about the workplace health and wellbeing activity indicate that everyone was interested in attending the workplace health and wellbeing activity, which signifies that all of them are interested in attending it. The bar graph shows us what percentage of the recruits wanted to attend it a few times a month, a few times a week, once a week, less than once a month and every day.

Finally, it was highlighted that the 36% of those who wanted to attend it every day can be portrayed as a good role model for the recruits who either said no or yes just because the others said it. Over a period of time, the percentage shift towards attending it every day and a few times a week will definitely rise higher.

n) What factors would stop you from participating in workplace health and wellbeing activities?

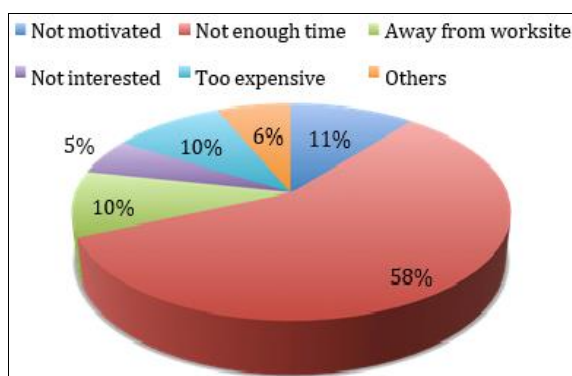


Fig 16: Wellbeing

They were also asked about what factors would stop them from participating in workplace health and wellbeing activities? For this question too, varied responses were

recorded and plotted in the form of the pie distribution, as shown below.

58% of the recruits responded that they did not get enough time to participate in such activities. 11% have responded saying that they were not motivated to do so. 10% of the recruits stay away from their workplace so getting back to their workplace for such extra activities would be a hassle for them. Another 10% of the recruits said that such activities were too expensive for them to afford and participate in. 5% of the recruits were typically uninterested in such activities. The remaining 6% of the recruits gave other miscellaneous reasons for their lack of participation.

The results about the factors that stop the recruits from participating in workplace health and wellbeing activities also generated a range of data. As shown in the pie-chart 58% of them said that they don't have enough time, the others gave reasons like-they were not motivated, they were not interested, it happens away from their worksite, it is too expensive and the remaining 6% mentioned it to be things which were not mentioned in the questionnaire like they want to rest instead and spend time with their colleagues which they get rarely during the training time.

So, the reasons stated are clear and if it can be taken care of by inculcating health and Wellbeing activities during their training period-it will surely make them more motivated and will show them the path for a better diet and nutrition which is the key element to cut down the negativities that they have mentioned above and also would also acquaint them for a fitter life.

What other health and wellbeing initiatives would you like to see implemented at the Sikkim Armed Police?

For this question too, various answers were given by the SAP recruits. The most common ones that had a pattern were as follows-

1. Health improvement programs and medical check-up camps, which will provide the recruits with various health ideas, that is necessary for healthy living.
2. Medical check-up camps after every few months so that the recruits can keep a track of their health status.
3. Medical room and designated medical doctor on SAP camp, who can provide any medical aid and services.
4. Gym access with dedicated time allotted for it.
5. Meditation and yoga for peace of mind, flexibility and to relieve stress that builds up due to various reasons.
6. Swimming pool and cycling is another medium for

recreation, adventure and a good workout tool.

7. Class/workshops on personality development, this was something, which stood out (like the others that are mentioned here). The recruits looked very much enthusiastic to attend classes and workshops related to personal development.
8. Motivational sessions/seminar was also mentioned by the SAP recruits, which means that they are aware of the role of motivational sessions for Health and wellbeing.

4. Conclusion and Recommendations

According to the above findings, the following conclusions can be made-

- The recruits who were including a good amount of physical activity and a decent diet had almost similar fitness levels and health standards.
- The findings also revealed that the recruits who had a higher level of physical activity as compared to their less active counterparts were much more healthy-Physically as well as mentally.

So, this shows that the proper combination of diet and exercise had better health benefits as compared to the diet or exercise administered individually.

5. Acknowledgement

I would like to extend my humble appreciation and gratitude towards Mr. A. Sudhakar Rao sir, Director General of Police for granting the permission for the Training and the research study.

6. Conflict of interest

In this study, there was no conflict of interest between the authors.

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