




# Prevalence and attitudes towards nutritional supplements use among gymnasium goers in Eldoret Town, Kenya

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## ABSTRACT

Active people in sports or regular exercises make up a significant portion of individuals using nutritional supplements (NS). Therefore the purpose of this study was to investigate the prevalence of NS (types, sources of information), motives for going to the gym, reasons for consumption of nutritional supplements and attitudes towards nutritional supplements among gymnasium users in Eldoret Town, Kenya. Data was collected using a questionnaire from 210 participants who were sampled through systematic convenience sampling from 11 gyms in Eldoret Town, Kenya. The study found that majority (55.3%) of the respondents used nutritional supplements and most of them used the supplements believing that they enhance their performance at the gym and therefore perceived usage of supplements as acceptable. The major reasons for going to gym were to enhance health, body building and to stay fit. Most (91%) of the gym users got the information about NS from the internet and the most consumed NS were protein supplements (72%), followed by sport drinks (69%) and fish oils (60%). It is concluded that gym goers use nutritional supplements and have positive attitudes towards their use. Therefore, this study recommends that users should be sensitized on the value, precautionary measures and side effects of using nutritional supplements.

**Keywords:** Physical activity psychology, Exercise psychology, Prevalence, Nutritional supplements, Gymnasium goers.

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## INTRODUCTION

Dietary supplements refer to substance(s) besides tobacco that are aimed to enhance diet because of the presence of one or more dietary ingredients (Kenya Pharmacy & Poisons Board, 2012). These dietary ingredients include proteins, minerals, vitamins, and different elements presumably available in normal diet (Giammarioli et al., 2013). NS are commonly in form of tablets, pills, or powders. Today there is increase demand for dietary supplement among persons looking for alternative means to supplement their nutritional intake. Additionally, the high focus on dietary supplement by media, rigorous advertisement by NS manufacturers and suppliers, and influence of friends and families about dietary supplements influences their consumptions particularly among active individuals in sports or demanding physical activities such as gym goers (Goston & Correia, 2010).

Several reasons are behind the high demand for nutritional supplements. Some of the most cited reasons include increased performance, shorten recovery time, supplement nutrition, building muscles, reduce stress, and boost immunity (Dickson & Mackay, 2014; Miller & Welch, 2013). Today availability and ease of access of various nutritional supplements make them convenient to gym goers who are currently the major target after athletes (FAO, 2010; Rock, 2007).

Globally, the aspect of going to the gym and other fitness facilities is fashionable and currently is a multi-million-dollar industry and the physical activities offered in these facilities are used as a panacea to a myriad public health concerns. Kenyans are becoming more and more avid about their health which is attributed to present increase of gyms in the country (Otwona, 2013). People go to the gym for various reasons such as reducing their weight, to build muscles, maintain a healthy body, or for socialization purposes (Eliason, et al., 1997; McGinnis & Ernest, 2001; Stewart, et al., 2013; Thakur & Brar, 2018). However the above reasons are attributed to studies which have been carried out from the West and it will be apt to find out the reasons which spur gym attendance in Kenya.

The prevalence of dietary supplements consumption among gym users is on the rise as indicated by increased outlets such as pharmacies, cosmetic shops, and supermarkets (Mazzini et al., 2021; Rovira et al., 2013; Ruano & Teixeira, 2020; Senekal et al., 2019). Studies have shown that gym users' consumption for nutritional supplement is over 40% (Ruano & Teixeira, 2020; Senekal et al., 2019; Thakur & Brar, 2018) with some studies reporting prevalence higher than 60%. For example, Thakur and Brar (2018) found a prevalence of 70% among gym trainees in Punjab, India while Senekal et al. (2019) reported a prevalence of 81% in South Africa. Mazzini et al. (2021) found that 85.4% of the participants had used DS. However, there is consensus that the prevalence of DS could be determined by the local regulations, nutritional behaviours, social, economic level, or physical activity culture in particular region. As such it is apt to investigate the prevalence of DS use among gym goers in a rural setting of Eldoret dominated by the Kenyan long distance runners.

A multitude of studies have shown that many people using nutritional supplements hardly seek professional advice before using them (Jason, 2009; Tian, et al., 2009). Regrettably, consumption of nutritional supplements is pronounced among athletes and physically active non-athletes (Goston & Correia, 2010) and more aptly among the people who go to the gyms. In regard to the sources of information on dietary supplements, among Americans who used dietary supplements, 73% reported TV as the best source of information on NS followed by newspapers, radio, acquaintances and displays (Marinac et al., 2007). Other sources of information on NS include internet (Attlee et al., 2018; Kagiso, 2020; Muwonge et al., 2021; Thakur & Brar, 2018) family members (Attlee et al., 2018; Harnack, et al. 2001), printed materials e.g. Journals, books,

magazines (Harnack, et al. 2001 coaches/trainers (Muwonge et al., 2021) and food stores (Archer & Boyle, 2008; Dickinson, et al., 2014). However health care professionals such as nutritionists, dieticians, physiotherapists and pharmacists are rarely used as sources of information (Archer & Boyle, 2008; Attlee et al., 2018; Dickinson, et al., 2014). A study on DS uses among gym users in Nairobi found that nutritionists, doctors, sellers of nutritional supplements, peers, and gym trainers were among the perceived reliable source of information about supplements by users (Wachira, 2011). Creanor, et al. (2017) found that, prior to use, 41% of gym goers in Johannesburg always read the label on the nutritional supplements for information about benefits and contradictions of the nutritional supplement in question.

There are many supplements' brands and choices available in the market which varies from one region to the other. In the United States the commonly used DS include minerals, vitamins, and herbal products (Barnes, et al., 2010). In most European countries about 50% of nutritional supplements contain vitamins or minerals (European Food Safety Authority [EFSA], 2017). A study in Netherlands reported users and non-users of DS believed they are safe and they would only be harmful if the users take excessive dose or have contradicted medical condition (Pajor, et al., 2017). People further noted DS may negatively impact the natural body functions but consumers are aware of the risks (Pajor, et al., 2017). Therefore it is important to establish the kinds of DS which are consumed by gym goers in Eldoret, Kenya.

Social demographic status such as gender, age, education, and marital status may influence the use of DS (Radimer et al., 2004). For example, gender has been found to be a predictor of DS use with women plausibly uses DS than men (Foote et al., 2003; Jawadi et al., 2017; Ruano & Teixeira, 2020; Shariff, et al., 2018; Stefan, 2015). Nutritional supplement usage is reported to increase with age with more than half of Americans older than 65 years, taking multivitamin or other nutritional supplements regularly as compared to younger adults (Hollenstein, 2007). In Canada, age was also closely related to supplement use as utilization rose steadily among women (60%) and in men (40%) aged over 51 years (Vatanparast, et al., 2010).

In Kenya, nutritional supplements are now common with all indicators (their presence in pharmacies, supermarkets, cosmetic shops) showing increased consumptions by many Kenyans (Wachira, 2011). Studies have shown that most of the users in Kenya are athletes and gym goers (Kimiye & Simiyu, 2009; Wachira, 2011). Available evidence reveals gym users depend more on trainers than dieticians on advice about nutritional supplements (Attlee et al., 2018). The danger is that majority of trainers lack adequate knowledge on DS to recommend the right and safe nutritional supplements. Therefore, this study investigated the reasons for going to gym, the reasons for using nutritional supplements and the type of nutritional supplements used among the gym users in Eldoret town. The findings provide information to stakeholders in the fitness industry which can form the basis for policy formulation on regulating the use of nutritional supplements in the country. Indeed, some of the DS are laced with contaminated or banned substances which could be a precursor to the many Kenyan athletes who have failed doping controls. Consequently, the findings of this study have monumental implications to the anti-doping agency of Kenya (ADAK) in their fight against doping in Kenya.

### **Theoretical framework**

This study is underpinned in the Theories of Reasoned Action (TRA) (Ajzen & Fishbein, 1980) and Theory of Planned behaviour (TPB) (Ajzen, 1985). The goal of TRA is to predict and understand human behaviours. The theory suggests that humans are rational and have the capacity to use available information to make decisions that influence their behaviours. The theory further suggests human can refrain from behaviours if they are willing. It asserts that human behaviour is determined by the attitude towards the behaviour (personal factor) and subjective norms (interaction between persons perception of how relevant others such as friends

perceive of their behaviours and the individuals drive to comply with significant others). In the present study, TRA helps to understand use of nutritional supplements among gym users, the motivation to conform with significant others to feel accepted, and behavioural intentions of the gym goers with regard to nutritional supplements (Ajzen & Fishbein, 1980). However, TPB included the concept of perceived behavioural control on the TRA to buttress the drive (intention) and capacity to initiate behaviour (behavioural control). This is anchored on perceived power or control which is determined by beliefs about the accessibility or inaccessibility or resources to support behaviours and perceived ability to control the impact of the response from the behaviour to support or inhibit the actions (Ajzen, 1985). Therefore, TRA and TPB help to predict behaviours and identify features that can guide educators assess the use of DS and design the right interventions by incorporating the theories constructs into behavioural model.

## **METHODS**

### ***Research design and Location of the study***

The study adopted cross-sectional analytical research design. The study was carried out in Eldoret town, Kenya. Eldoret serves as the administrative centre for Uasin Gishu County and is the fifth largest town in Kenya. The town has a population of 475,716 inhabitants according to 2019 national census. Eldoret is the hometown of the renowned elite Kenyan runners (home of champions) and there are many training camps in the surroundings. Therefore, the area was ideal for the study as most of the athletes visit the gym for numerous exercises regimens. The study targeted all the gym users from the 15 gyms in Eldoret town. However, data was collected from 11 gyms as gym managers of 4 gyms declined their clients to participate in the study. From the attendance registers it was established that the gyms had 40 frequent users on weekly basis.

### ***Sampling size and Sampling techniques***

Purposive sampling methods were utilized to select the gyms while systematic convenience sampling techniques were used to sample the gym goers to participate in the study. Through the assistance of fitness instructors, researchers were introduced to the gym goers. They were explained the purpose of the study and those who agreed to participate in the study were requested to sign informed consent forms. The informed consent indicated that the participants were free to pull out of the study, voluntary participation, refraining from questions which they were uncomfortable with and their responses were going to be used for academic purposes only. To participate in the study the individual had to be a regular gym member and attended the gym at least two or more times a week. Participants with medical/health conditions or illnesses requiring consumption of nutritional supplements were excluded from the study. A total of 199 gym goers took part in the study and their demographic details are presented in Table 1.

### ***Research instruments***

A self-administered questionnaire was used for data collection. The questionnaire had five sections where items in Section A sought demographic details of the respondents such as gender, age, and occupation. Section B had items related to exercising at the gym such as frequency of visiting the gym in a week, how long they had been going to the gym and purpose of going to the gym. Section C solicited for reasons for the consumption of nutritional supplements, sources of information, types and attitudes towards nutritional supplements. Items in section B were weighted on a five-point Likert scale, starting with strongly agree (SA) to Strongly Disagree (SDA). Items in Section C on reasons for consumption and attitudes towards nutritional supplements were weighted from strongly agree to strongly disagree. The items on sources of information, types and frequency of use of NS were weighted on Never (N) Rarely (R), Sometimes (S), Frequently (F) and Very Frequently (VF). Participants were asked questions on reading labels and the side effects of NS

use. The validity of the instrument was ascertained by involving lecturers in exercise science, and physical trainers. The reliability of the instrument has been reported in previous studies of Coopoo, et al., 2020; Creanor *et al.*, 2017; Gabriel, et al., 2012). However Cronbach statistical test was computed and a reliability coefficient of 0.80 was realized and considered adequate for the study (Blaxter, et al., 2006).

### ***Data collection procedure and Ethical considerations***

Kenyatta university ethical review board (KUERB) Ref. no. pku/891/11952 approved the study protocol. Subsequently letters were written to the gym managers explaining the purpose of the study and were requested for access to their facilities for the study. After approval by the gym managers, the researcher visited the gyms in the evening. The researcher sought the respondents consent after explaining the importance of the study and then gave them sufficient time to accurately fill the questionnaire. The questionnaires were then collected for data entry and analysis.

### ***Data analysis***

Microsoft excel and SPSS were used to organize and analyse the data. Descriptive statistics of frequencies, percentages, means, and standard deviations were used to analyse the data and results were presented using tables.

## **RESULTS**

### ***Demographic characteristics***

A total of 199 gym users were assessed in the study with 140 (29.64%) males and 59 (29.64%) females. Most 120 (60.4%) of respondents were aged between 26 and 35 years while the least were aged between 21 and 25 years 39 (19.6%). In regards to their occupation there were trainers, medical officers, security, students and others. Majority 88 (44.2%) of the respondents had been going to the gym for a period of 1 – 2 years, one year 52 (26.1%), 3-5 years 38 (19 %) while those who had been going to the gym for more than 5 years 21 (10 %). In terms of weekly attendance to the gym most 74 (37.2%) went more than three times, 58 (29.1%) visited twice, 46 (23.1%) thrice while 21 (10.6%) went once.

Regarding nutritional supplements use, 110 (55.3%) of participants used nutritional supplements while 89 (44.7%) did not use. Asked whether they were aware that nutritional supplements are prohibited 120 (60.3%) were affirmative for YES while 79 (39.7%) negated. The reasons for going to the gym are presented in Table 2.

Results in Table 2 show that the main motives for going to the gym of the participants were enjoyment and fun, medical advice, conditioning the body, cross fit training purposes and toning the body, while the least ranked motives were being with friends, staying healthy and for spiritual motives. The reasons for consumption of nutritional supplements are presented in Table 3.

Results in Table 3 show that the reasons for consumption of nutritional supplements of gym users were to assist in coping with stresses of muscle gains in the gym, to improve perform in the gymnasium, health and to reduce cravings in order to decrease body weight while the least ranked reasons were pressure from peers and to reach personal goals. The sources of information on nutritional supplements are presented in Table 4.

Table 1. Demographic characteristics (n = 199).

<b>Demographic characteristics</b>	<b>F</b>	<b>%</b>
<b>Gender</b>		
Male	140	70.4
Female	59	29.6
<b>Age</b>		
21-25yrs	39	19.6
26-30yrs	60	30.2
31-35yrs	60	30.2
36-40yrs	40	20.0
<b>Occupation</b>		
Trainer	60	30.2
Medical Officer	39	19.6
Security	40	20.1
Student	40	20.1
Others	20	10.0
<b>Years in the Gym</b>		
<1	52	26.1
1-2	88	44.2
3-5	38	19
>5	21	10
<b>Weekly attendance</b>		
Once	21	10.6
Twice	58	29.1
Thrice	46	23.1
More than thrice	74	37.2

Table 2. Reasons/motives for going to the gym among the users (n = 199).

<b>I go to the gym...</b>	<b>Mean</b>	<b>Std. Deviation</b>
For enjoyment and fun	3.93	.91
Following medical advice	3.84	1.09
Condition my body	3.82	1.25
Cross Fit training purposes	3.79	.98
Tone my body	3.78	1.20
To be healthy	3.78	1.02
Lose weight	3.71	1.35
Be with friends	3.62	1.26
Stay healthy	3.35	1.47
For spiritual motives	3.13	1.35

Table 3. Reasons for Consumption of Nutritional Supplements of Gym Users (n = 199).

<b>I consume Nutritional Supplements in order to...</b>	<b>Mean</b>	<b>Std. Deviation</b>
Assist one in coping with stresses of muscle gains in the gym	4.11	.837
Help improve the way I perform in the gymnasium	3.86	1.07
Be healthier	3.80	1.08
Help me to reduce cravings in order to decrease my body weight	3.85	.941
I feel pressured by my peers	3.65	1.05
Help me to reach my personal goals	3.60	1.11



Table 4. Sources of Information on Nutritional Supplements of the Gymnasium Users (n = 199).

Sources of Information on nutritional supplements	Yes	No	Rank %
Internet	181 (91)	18 (9)	1
Pharmacists	128 (64.3)	70 (35.2)	9
Books	112 (56.3)	87 (43.7)	11
Personal trainer	175 (87.9)	22 (11.1)	2
Newspapers	124 (62.3)	75 (37.7)	10
Magazines	139 (69.8)	59 (29.6)	6.5
Friends/Trainer partner	146 (73.4)	53 (26.6)	4.5
Journals	131 (65.8)	68 (34.2)	8
Representatives from nutritional companies	146 (73.4)	53 (26.6)	4.5
Information brochures	139 (69.8)	60 (30.2)	6.5
Physicians	155 (77.9)	44 (22.1)	3.5
Other	155 (77.9)	44 (22.1)	3.5

Data in the Table 4 show that majority of the respondents got information on NS from the internet followed by personal trainers, physicians, others, friends, and representatives from companies. The other sources of information on NS were brochures, magazines, journals newspapers, pharmacists, and books. The types of nutritional supplements consumed by gymnasium users were proteins (72%), sport drinks (69%), Fish oil (60%), caffeine (52%), herbal products (39%), glutamine (38%), carbohydrates (33%), vitamins (21.16%), and anti-oxidants (25%). Asked whether they read nutritional value benefits and side effects of supplements on the labels before use, 93 (46.7%) always read, 38 (19.1%) never, rarely 37 (18.6%) frequently 22 (11.1%) and sometimes 9 (4.5%). Asked whether the Gym instructor knew that as gym users they were using nutritional supplements 115 (57.78%) acknowledged that they knew while 84 (42.21%) opined that they did not know. When asked whether Gym instructors encourages use of nutritional supplements 44 (22.5%) responded yes while 155 (77.5%) said no. The attitudes of gymnasium users towards nutritional supplements are presented in Table 5.

Table 5: Attitudes of gymnasium users towards nutritional supplements (n = 199).

Attitudes	Mean	SD
I would never consider the use nutritional supplements to improve my performance	4.38	1.03
There are too many gym users using supplements to enhance their performance in Gymnasium	4.12	0.89
The use of performance enhancing supplements and nutritional supplements has increased in the last five years	4.05	1.11
Some think Gymnasium participants who want to reach their goal have to sometimes use performance enhancing supplements	4.02	1.23
Gymnasium should offer educational programmes for Gymnasium users on the use of supplements in Gymnasium	3.90	1.13
I do not think it is fair to use performance enhancing supplements	3.77	.92
I think it is always wrong to use nutritional supplements for gym purpose	2.67	1.43
Many of my friends think it is acceptable to use nutritional supplements	2.07	.94
The use of nutritional supplements by Gymnasium users has not been sufficiently reported in the media	2.05	1.7

The results in Table 5-show that-the gym goers had high means in the items; “they would never consider the use of nutritional supplements”, “there are too many gym users using supplements to enhance their

*performance in Gymnasium*”, “*use nutritional supplements has increased in the last five years*”, and the “*thinking Gymnasium that participants who want to reach their goal have to sometimes use performance enhancing supplements*”. Therefore, it is apparent that the gym goers on one hand may want to keep off supplements, but on the other hand they are convinced that their peers are using them and there may be benefits associated with it. This effectively indicates that given an opportunity they will use nutritional supplements.

## DISCUSSION

The study aimed at establishing the prevalence of NS among gym goers in Eldoret town, Kenya. The article sheds light why people go to the gym, use nutritional supplements, types of nutritional supplements used and attitudes towards nutritional supplements. The findings revealed most of the gymnasium users were male and had been a member of the gym for 2 or more years. The findings further indicated many participants went to the gym more than three times a week. These findings are supported by those of previous studies which have shown that men go to gym more than women (Jawadi et al., 2017; Morrison, et al., 2004; Muwonge et al., 2021; Ramic et al., 2020; Thakur & Brar, 2018).

The participants were going to the gym mainly for enjoyment and fun, toning their body, to be healthy and following medical advice. These findings have been reported in previous studies (Crossley, 2006; Dworkin, 2003; Eliason et al., 1997; Muwonge et al., 2021; Salami et al., 2017; Thakur & Brar, 2018). Indeed, Dworkin (2003) argued one of the primary objectives of gym goers is to achieve a physique that is perceived as aesthetic ideal in the contemporary society. Crossley (2006) alluded that some people go to gyms to relieve the pressure from daily life because they can redirect the focus (turn off consciousness) and learn how to manage pain/stress through exercise. Similarly, Eliason et al. (1997) had indicated that people go the gym for body building, health reasons, endurance/ cardiovascular, weight loss and performance enhancement.

The findings indicated that 110 (55.3%) of the gym goers used nutritional supplements while 89 (44.7%) did not use nutritional supplements. Other studies have reported similar results where over 50% of gym users consume dietary supplements (Lacerda, et al., 2015; Mazzini et al., 2021; Morrison et al., 2004; Thakur & Brar, 2018). For example, Lacerda et al. (2015) found that supplements were used by 64.7% of the participants with 52.6% being males who exercised while Morrison et al. (2004) found that 84.7% took supplements. Mazzini et al., 2021 found that 85.4% of participants in their study used dietary supplements. This high prevalence of NS use is not comparable to other studies which have shown that 37.8% were NS users (Jawadi et al., 2017) and (Espinosa, et al., 2018; Ruano & Teixeira, 2020) where 43% used nutritional supplements. In a related study, Shariff et al. (2018) found that 49.5% men and 12.4% women reported that they use dietary supplements.

In this study, majority of the gym users consumed nutritional supplements to assist them gain desired muscle mass, to be healthier, and improve their performance (Table 3). These findings resonate with other studies which have reported that most gym users consume nutritional supplements to boost their performance (Jawadi et al., 2017; Molinero & Marquez, 2009; Muwonge et al., 2021; Salami et al., 2017) maintain good health, and supplement nutritional needs (Dickson & Mackay 2014; Jawadi et al., 2017; Salami et al., 2017; Thakur & Brar, 2018). Morrison et al. (2004) reported several reasons for gym goers to use nutritional supplements such as building muscles, to avoid illness in the future, to provide energy before, during, and after workout, boost power, and aid recovery. Similarly, Espinosa et al. (2018) opined that gym goers were using supplements in order to increase muscle mass, improve recovery and reduce body fat. The same



reasons of consuming NS have been reported among the Dutch (Pajor et al., 2017) and Germans (Frey, et al., 2017) gym goers.

The findings show that most of the gym user's sourced information on nutritional supplements from multiple sources mainly internet, personal trainers and pharmacists (Table 4). These findings resonate with those of other studies which found out that online resources were the main source of nutritional supplements information (Attlee et al., 2018; Dickinson & MacKay, 2014; Phaladi, 2020; Maxwell, et al., 2017; Muwonge et al., 2021; Thakur & Brar, 2018). Indeed, Dickinson and MacKay (2014) reported that there is a lot of information encouraging consumers to purchase vitamins from the internet. The other sources of information on nutritional supplements were coaches, magazines, family/friends, personnel in vitamin/health food/supplement stores, books, and media. These sources have previously been reported as useful resources for nutritional supplements information (Alves & Lima, 2009; Attlee et al., 2018; Eliason et al., 1997; Jawadi et al., 2017; Muwonge et al., 2021; Ruano & Teixeira, 2020; Shariff et al., 2018). However, it is apparent that the gym users do not get information from credible sources such as nutritionist or dieticians.

The findings indicated that 58% of gym users review the label on nutritional supplement for information about the product. This postulates that the gym goers are aware of the nutritional value and benefits of the nutritional supplements. These findings are in congruence with findings from other studies (Creanor et al., 2017; Gabriel et al., 2012). For example, Creanor et al. (2017) found that 155 (41%) of the participants said they review the label on nutritional supplement products for information such as benefits and contraindications before purchasing. Similarly, Gabriel et al. (2012) found that 174 (48%) sometimes read the labels information, 149 (41%) always read the label and 39 (11%) read the labels information for a products nutrition value benefits and side effects.

Protein supplements were the mostly used type of nutritional supplement among the gymnasium users together with sport drinks and fish oils. The dominance use of proteins among gym goers has been reported in other studies (Bianco et al., 2011; Braun et al., 2009; Junejo et al., 2021; Muwonge et al., 2021; Ramic et al., 2020; Thakur & Brar, 2018). The other nutritional supplements of vitamins, minerals, and botanical products used by gym goers have been reported in previous (Barnes, et al., 2007; Dickinson et al., 2014; Espinoza et al., 2018; Foote et al., 2003; Jawadi, et al., 2017; O'Brien, et al., 2017; Ruano & Teixeira 2020). Indeed, Malik (2017) had reported that 14 different supplements were used by gym goers and it is possible that the gym goers could be using a combination of nutritional supplements.

The findings showed that most gym users had positive attitude towards nutritional supplements. The findings on positive attitudes towards nutritional supplements usage as perceived by the gymnasium users are supported in other studies (Kamber, et al., 2001; Sekulic et al., 2014) and this is not remote as a significant number of gym goers were using nutritional supplements believing that they can improve performance (Muwonge et al., 2021; Salami et al., 2017). Previous studies have stated that likely use of supplements among gym users who are persuaded that supplement is present in their sport (Muwonge et al., 2021; Sajber, et al., 2013; Sekulic, et al., 2014; Zenic, et al., 2013). Based on the "*false consensus effect*", then gym goers will use nutritional supplements because they believe others are using them.

## CONCLUSIONS

Most gym goers use nutritional supplements and they were aware that nutritional supplements are prohibited. They sourced and obtained information on NS from the internet, personal trainers and physicians. . Gym users used the nutritional supplements for coping with gym stresses, improving performance and health.

They frequently read the labels before buying and using the nutritional supplement product. The gym goers went to the gym in order to be healthy, to condition their body, for enjoyment and fun and medical advice. The gym users perceived that using nutritional supplements was not bad at all as it enhances their performance.

### **Limitations of the study**

The self-reported nature of the survey may have limited the reliability of the data. This is more apt as gym goers may not have been candid enough on their consumption of nutritional supplements. However, the gym goers were implored to be genuine in their responses and they were assured that their responses were for academic uses only. The other limitation is that the study conducted among gym goers in Eldoret Town, Kenya which does not allow for generalizations to all the gym goers in Kenya. But the findings could be treated as an indicator on the use of DS among gym goers and spur similar studies in other towns in Kenya.

### **Recommendations**

The gym goers need education on consumptions of nutritional supplements. The concerned gyms owners and management should explore all possible means of addressing the problem, which may include improving access to nutritional supplements information and developing structures and regulations related to nutritional supplements. Other studies should be carried out in cities like Nairobi and Mombasa to find out whether prevalence of NS varies from city to city. The effects of nutritional supplements among its users should be carried out. Also, other studies should emphasis on the policies and regulations related to the consumption of nutritional supplements.

## **AUTHOR CONTRIBUTIONS**

Conceptualization: Elijah G. Rintaugu & Henry Mukolwe. Methodology: Henry Mukolwe & Francis M. Mwangi. Data collection and analysis: Francis M. Mwangi. Initial writing: Henry Mukolwe & Jonathan Rotich. Review and Editing: Elijah G. Rintaugu & Jonathan Rotich.

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## **DISCLOSURE STATEMENT**

No potential conflict of interest was reported by the authors.

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