

An investigation into common gym injuries, causes and prevention in fitness centres around Katima Mulilo, Zambezi Region of Namibia

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Abstract

The main aim of this study was to investigate into common gym injuries, causes and prevention in fitness centres around Katima Mulilo, Zambezi Region of Namibia. Quantitative research design was employed for this study, this approach was found appropriate and suitable for this study as it allowed the researcher to gather and analyse in-depth relevant information that relates to the phenomenon being investigated. A total of $n = 200$ gym users who were purposively selected formed part of the targeted sample, of which $n = 73$ (36.5%) were female and $n = 127$ (63.5%) were male participants. Data was collected from fitness centres within Katima Mulilo using questionnaires created by the researcher and analysed using statistical software V21 SPSS to find frequencies and percentages, moreover, analysed quantitative data was presented in tables. The results of this study shows that; lower back pain commonly sustained through lifting heavy weights caused injuries in male participants by 23(18%) and 6(8.2%) in female participants, shoulder injuries through rotator cuff issues caused injuries in male gym user by 17(13.3%) and 3(4.1%) in female participants, knee injuries associated with ligament issues or pain sustained from running, jumping or squatting incorrectly caused injuries among male gym users by 50(39.3%) and 15(20.5%) in female participants. Wrist and elbow pain such as strains and tendinitis caused injuries in male gym users by 62(48.8%) and 17(23.2%) in female participants, shin splints associated with pain in the shins from running or jumping on hard surface caused injuries by 22(17.3%) and 8(10.9%) in female participants, muscle strain or pulls associated with groin pulls or general muscle tears from overstretching muscles caused gym injuries in male participants by 33(25.9%) and 11(15%) in female participants, ankle sprain associated with incorrect landings or sudden movements during cardio caused injuries in male gym users by 16(12.6%) and 4(5.4%) in female participants. Results further show common causes of gym injuries, to which participants indicated that lifting excessively heavyweights caused 80(62.9%) in male, and 10(13.6%) in female participants, improper form or technique caused injuries among gym members by 57(44%) in male and 55(75.3%) in female participants, overtraining or insufficient rest caused injuries in gym users by 77(60.6%) male and 23(31.5%) in female participants, sudden, jerky movements caused injuries in gym canterers by 60(47.2%) in male and 31(42.4%) in female participants. Lastly, results shows prevention of gym injuries, to which participants indicated that warming up properly before exercise and cool down after prevented injuries by 80%, gradually increase of weight and intensity prevented gym injuries by 60%, whereas focus on correct form over lighting heavy prevented gym injuries in fitness centres by 58%, listening to your body and rest when needed prevented injuries by 50%.

Keywords: Common gym injuries, causes, prevention, fitness centres Katima Mulilo

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Introduction

The worldwide increase in health awareness has drove a considerable rise in gym involvement, with the fitness business counting approximately over 186 million participants globally (Cannataro et al, 2022). Physical activity in gyms or fitness centers is broadly promoted for its significant advantages in enhancing physical competence, mental fitness, and reduction of danger associated to chronic diseases (Chaabene et al, 2018). Though, this quest of health is not lacking danger, as gym-constructed activities carry an integral possibility for Musculo-skeletal injuries (Maiorana et al, 2018). Whereas the injury amount in fitness appears moderately small associated to other contact sports (roughly 1.8 injuries per 1,000 exercise periods), the absolute volume of involvement means the total number of injuries is extreme, stressing the serious necessity for safety consciousness and real deterrence tactics (Hegedus, 2022). Nearly 2.5 million Americans experience gym-associated injuries per annum, with the

mainstream being muscle straining and ligament injuries (Bonilla, 2020). The most regularly involved body parts involve the lower back, shoulder, and knee. These injuries, which can extend from minor and provisional to critical and long-term, frequently result in considerable pain, functional constraints, and time lost from training sessions (Herold et al, 2019). The etiologic of these injuries is multi-factorial, including a complicated relationship of inside and outside danger components. Major contributing issues constantly recognised in literature comprise of inappropriate technique, extreme loading, inadequate recovery time, and insufficient warm-up and cool-down practices (Lucini and Pagani, 2021). For example, inadequate form is liable for an projected 55% of gym injuries, although utilizing weights outside of one's capability is extra main cause (Eickhoff-Shemek and Topalian, 2022). Additionally, a shortage of professional control, specifically during difficult

workout like weightlift, substantially fuels the danger, particularly among novice gym-goers. Understanding these specific causes and risk factors is the second necessary step in the "structure of injury stoppage" model, following the identification of the injury obstacle's limit (Mañago et al, 2019). Present research frequently focuses on identifiable fitness subdivisions, such as power-lifting or Cross-Fit, and information on the common fitness people's injury epidemiology can be narrow (Bonilla et al, 2022). Countless studies have faith on self-conveyed information through research, which can introduce prejudices in injury analysis and severity category (Pichardo et al, 2021). A necessity exists for more thorough, longitudinal investigation to recognise complete cause-consequence associations and refine sport-explicit preventive tactics to enhance athlete protection and performance (Batterson et al, 2020).

Materials and methods

The main aim of this study was to investigate into common gym injuries, causes and prevention in fitness centres around Katima Mulilo, Zambezi Region of Namibia. Quantitative research design was employed for this study, this approach was found appropriate and suitable for this study as it allowed the researcher to gather and analyse in-depth relevant information that relates to the phenomenon being investigated. A total of n = 200 gym users who were purposively selected formed part of the targeted sample, of which n = 73(36.5%) were female and n = 127(63.5%) were male participants. Data was collected from fitness centres within Katima Mulilo using questionnaires created by

Table 1: Common Gym Injuries Types & Body Location

	frequencies		percentages%	
	male	female	male	female
Lower back pain (Common from lifting heavy weights (squats, deadlifts) with poor form, weak core, or insufficient rest)	23	6	18%	8.2%
Shoulder injuries (Rotator cuff issues (inflammation, tears) from overhead presses or repetitive movements, often due to overuse or bad posture)	17	3	13.3 %	4.1%

the researcher and analysed using statistical software V21 SPSS to find frequencies and percentages, moreover, analysed quantitative data was presented in tables.

Results

The main aim of this study was to investigate into common gym injuries, causes and prevention in fitness centres around Katima Mulilo, Zambezi Region of Namibia. Table 1 below shows the results of common gym injuries types and their body location, to which participants indicated that lower back pain commonly sustained through lifting heavy weights caused injuries in male participants by 23(18%) and 6(8.2%) in female participants, shoulder injuries through rotator cuff issues caused injuries in male gym user by 17(13.3%) and 3(4.1%) in female participants, knee injuries associated with ligament issues or pain sustained from running, jumping or squatting incorrectly caused injuries among male gym users by 50(39.3%) and 15(20.5%) in female participants. Wrist and elbow pain such as strains and tendinitis caused injuries in male gym users by 62(48.8%) and 17(23.2%) in female participants, shin splints associated with pain in the shins from running or jumping on hard surface caused injuries by 22(17.3%) and 8(10.9%) in female participants, muscle strain or pulls associated with groin pulls or general muscle tears from overstretching muscles caused gym injuries in male participants by 33(25.9%) and 11(15%) in female participants, ankle sprain associated with incorrect landings or sudden movements during cardio caused injuries in male gym users by 16(12.6%) and 4(5.4%) in female participants.

Knee Injuries (Ligament issues or pain from running, jumping, or squatting incorrectly)	50	15	39.3 %	20.5 %
Wrist & Elbow Pain (Sprains, strains, and tendinitis (like tennis or golfer's elbow) from gripping or repetitive motions).	62	17	48.8 %	23.2 %
Shin Splints (Pain in the shins from running or jumping on hard surfaces)	22	8	17.3 %	10.9 %

Muscle Strains/Pulls (Groin pulls or general muscle tears from overstrengthening muscles)	33	11	25.9 %	15%
Ankle Sprain (From incorrect landings or sudden movements during cardio)	16	4	12.6 %	5,4%

Table 2, below shows the results of common causes of gym injuries, to which participants indicated that lifting excessively heavyweights caused 80(62.9%) in male, and 10(13.6%) in female participants, improper form or technique caused injuries among gym members by 57(44%) in male and 55(75.3%) in female participants, overtraining or insufficient rest caused injuries in gym users by 77(60.6%) male and 23(31.5%) in female participants, sudden, jerky movements caused injuries in gym canters by 60(47.2%) in male and 31(42.4%) in female participants.

Table 2: Common Causes of Gym Injuries

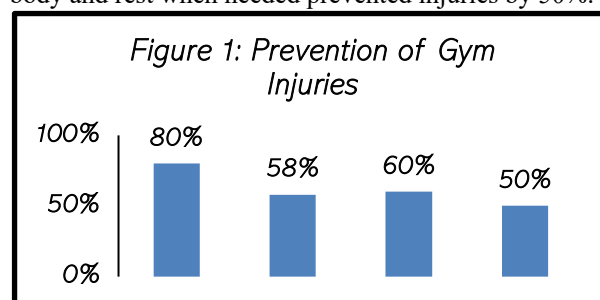
	frequencies		percentages %	
	male	female	male	female
Lifting excessively	80	10	62.9%	13.6%

Discussions

The main aim of this study was to investigate into common gym injuries, causes and prevention in fitness centres around Katima Mulilo, Zambezi Region of Namibia. The results in table 1 of this study shows that of common gym injuries types and their body location, to which participants indicated that lower back pain commonly sustained through lifting heavy weights caused injuries in male participants by 23(18%) and 6(8.2%) in female participants. People who endure lower back pain through heavy weight lifting usually cope and work to solve the pain through a sequence of rest, physical rehabilitation, hurt management, and considerable lifestyle and technique corrections to stop repetition. In critical situations, health involvements like injections or operation may be crucial (Alder, 2025). Shoulder injuries through rotator cuff issues caused injuries in male gym user by 17(13.3%) and 3(4.1%) in female participants, knee injuries associated with ligament issues or pain sustained from running, jumping or squatting incorrectly caused injuries among male gym users by 50(39.3%) and 15(20.5%) in female participants. Gym users worldwide incur shoulder injuries mostly due to inappropriate skill, too much or repetitive load, and the shoulder's essential bodily instability (Daher et al, 2024). These problems

heavy weights				
Improper form or technique	57	55	44.8%	75.3%
Overtraining or insufficient rest	77	23	60.6%	31.5%
Sudden, jerky movements.	60	31	47.2%	42.4%

Figure 1 below shows the results of prevention of gym injuries, to which participants indicated that warming up properly before exercise and cool down after prevented injuries by 80%, gradually increase of weight and intensity prevented gym injuries by 60%, whereas focus on correct form over lighting heavy prevented gym injuries in fitness centres by 58%, listening to your body and rest when needed prevented injuries by 50%.



repeatedly occur during unsupervised exercising and distinctive high-risk workout (Noteboom et al, 2023). Wrist and elbow pain such as strains and tendinitis caused injuries in male gym users by 62(48.8%) and 17(23.2%) in female participants, shin splints associated with pain in the shins from running or jumping on hard surface caused injuries by 22(17.3%) and 8(10.9%) in female participants. Gym users universally sustain wrist and elbow pain and injuries principally due to inappropriate skill, lifting extreme weight, and misuse (recurring strain) (Tawfik et al, 2021). These circumstances place extreme and artificial stress on the fragile joints and nearby tissues, leading to situations like strains, sprains, and tendinopathies (for instance tennis elbow or golfer's elbow) (Rafiq et al, 2025). Muscle strain or pulls associated with groin pulls or general muscle tears from overstrengthening muscles caused gym injuries in male participants by 33(25.9%) and 11(15%), ankle sprain associated with incorrect landings or sudden movements during cardio caused injuries in male gym users by 16(12.6%) and 4(5.4%) in female participants. Fitness gym users universally suffer from muscle strains or pulls largely due to the muscle fibres being exposed to extreme pressure, pull or force, frequently during forceful eccentric jerking or contraction (muscle stretching under stress)(Shalchi, 2023). This occurs in fitness

centers through a mixture of numerous connected causes such as: previous injuries, muscle imbalance, insufficient flexibility, individual and factors associated to the environment, lack of qualified trainers or guidance, overtraining and muscle fatigue, inadequate warm-up and cooling down, excessive loading and improper technique (Bonilla et al, 2022).

Moreover, in table 2 results show common causes of gym injuries, to which participants indicated that lifting excessively heavyweights caused 80(62.9%) in male, and 10(13.6%) in female participants. Lifting extremely heavy loads causes injuries largely due to the application of forces that go above the ability of muscles, ligaments, tendons, and joints to carefully manage the weight (McCallum, 2022). This can result in equally severe trauma and recurring overuse issues such as; excessive load, repetitive stress/overuse, improper form, muscle imbalance (Islam et al, 2024). Improper form or technique caused injuries among gym members by 57(44%) in male and 55(75.3%) in female participants. Inappropriate form causes gym injuries by misaligning the body, placing unnecessary pressure on tendons, ligaments, joints, and muscles resulting or leading to tears, sprains, strains, inflammation (such as tendonitis), and elongated-term problems such as back pain, frequently due to ego lifting (too much weightiness), poor stance, or irregular movements, unsettling natural biomechanics and collective danger of acute injury or long-lasting pain (Ba et al, 2024). Overtraining or insufficient rest caused injuries in gym users by 77(60.6%) male and 23(31.5%) in female participants. Overtraining and inadequate rest lead to injuries in gym members by stopping the body from restoring microscopic destruction, interrupting hormone balance, collective chronic inflammation, and harming neuromuscular mechanism. This outcome in a failure of musculoskeletal tissues and universal disfunction, these injury are linked with biological instruments of damages such as; glycogen depletion, impaired neuromuscular function and technique, hormonal imbalances, chronic inflammation, accumulation of microtrauma (Champion, 2023). Sudden, jerky movements caused injuries in gym canters by 60(47.2%) in male and 31(42.4%) in female participants. Abrupt, jerking movements cause injuries in fitness centre users by applying disproportionate and unrestrained tendons, force to ligaments, muscles, and joints, pushing them beyond their power-driven limits and leading to acute disturbance such as strains, sprains, and tears (Julce, 2023).

Figure 1 shows results of prevention of gym injuries, to which participants indicated that warming up properly before exercise and cool down after prevented injuries by 80%. Warming up prepares muscles by increasing blood flow, temperature, and flexibility, preventing strains and making movements efficient, while cooling down gradually lowers heart rate and blood pressure, preventing light-headedness and cramps by allowing the body to slowly recover, thus reducing injury risk during both phases (Sople and Wilcox, 2024). Warm-ups increase muscle elasticity and lubricate joints with synovial fluid, while cool-downs prevent sudden drops in blood pressure and help muscles transition back to

rest, avoiding shock (Afonso, 2023). Gradually increase of weight and intensity prevented gym injuries by 60%. Progressively increasing weight and intensity stops gym injuries by letting the body's several tissues to alter without harm over time (Fadler, 2024). However, focusing on correct form or techniques over lighting heavy prevented gym injuries in fitness centres by 58%. Accurate form is paramount to stopping injuries when lifting heavy weights for the reason that it safeguards appropriate biomechanical placement and muscle engagement, whilst lighting is a resultant, environmentally friendly safety reason (Rushlow, 2024). Listening to your body and rest when needed prevented injuries by 50%. Listening to your physique or body and resting or recuperate prevents injuries by letting muscles restoration from micro-tears, decreasing swelling, and stopping overuse, which turns slight aches into serious sprains, strains, or chronic problems such as tendonitis, this alertness aids you to identify early signs such as enduring pain or exhaustion, prompting needed disruptions or technique modifications before tissues break-down, guaranteeing long-term wellbeing and better performance (Pineider, 2025).

Conclusion

Comprehending common gym injuries is necessary for preserving a balanced fitness standard. Lower back issues, strains, and sprains repeatedly take place, regularly stemming from inappropriate form, incorrect warm-ups, and lifting extreme heavy weights. These problems are mostly avoidable through thorough devotion to best procedures. Fundamental preventive actions include constantly highlighting accurate technique, pay attention to your body to avoid over-exertion, and progressively increasing force. Employing proper safety gear and seeking direction from trained experts can further mitigate dangers. By tackling these root causes seriously, individuals can considerably decrease the probability of injury, advancing a safer and more operational situation within fitness centers for all members.

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