Perceptions of Gym and Exercise in Supporting Mental Health: A Multicultural Perspective in Malaysia

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ABSTRACT

While gymnasium subscription continues to increase across the globe and the general benefit of exercise routine for mental health is evident, evidence specific to gymnasium routine remains scarce. Gymnasium users engage in higher frequency and intensity of exercise and take extra supplements to achieve their body target. Hence, this study aims to identify multicultural Malaysian gym users' perceptions towards the usability of the gym and exercise as a mechanism to improve mental health. A qualitative narrative study is employed to explore the perceptions, attitudes, behaviors, and beliefs of participants via the use of semi-structured interviews. 10 participants were selected through purposive sampling with targeted respondent criteria; gym regulars who visit the gym 3 to 5 times a week, and aged 21 to 40. Respondents comprised major ethnic groups in Malaysia which are Malay, Chinese and Indian and religions which are Muslim, Buddhist, Hindu, and Atheists. Primary data were analyzed using Thematic Analysis with deductive reasoning. Findings indicated that gym users from all races and religions perceived that exercising and using the gym to relieve stress, anxiety and depression, experience catharsis and provided them with sense of accomplishment. It is conclusive that gym users perceived significant improvements to their mental health because of exercising in the gym. It is recommended that a larger scale, quantitative research is required to enable generalization to the whole community of gym users.

Keyword (s): Mental Health , Gymnasium Use , Multicultural Perceptions , Stress Management , Qualitative Study.

INTRODUCTION

Exercise, a collective activity that has been conversed to all of us since we were young, as a form of activity that brings various benefits to our physical health. Exercise comprises of various forms of structured physical activity which helps either maintain or improve any one or more aspects of fitness (Caspersen et al., 1985). Regardless of one being physically active in their respective lifestyle, exercising has no doubt various benefits for our bodies. However, many mature into adulthood solely maintaining the idea that exercising brings benefits mostly to the physical body; neglecting its importance and what it could offer for our mental

health wellbeing.

This can attribute to the fact that mental health issues prevalence in Malaysia has always been an issue the country has been struggling with. Malaysia commonly suffers from an array of challenges in public attitudes towards mental health, as various ethnic cultures have beliefs contrary to the importance of mental health alongside conservative mindsets where mental health problems 'do not exist' (Hassan et al., 2018). A study found that the prevalence of mental health disorders such as stress, worry and uncertainty, has drastically increased in the past decade due to globalization factors which result in rapid socio-

economic-political changes (Raaj et al., 2021).

The question remains, does exercising play a role in improving mental health, especially with very accessible gyms nowadays? The original intent of the gym was built as a place for people who wanted to improve their physical fitness, strength and appearance (Heffernan, 2020). In today's gym culture, it is widely accepted that exercising is good for your mental health. As the years progressed, more studies have highlighted the benefits of going to the gym for mental health. For instance, Mikkelsen et al. (2017), studied the effects of exercise on mood disorders and found that exercising has shown to have numerous benefits for our cognition and psychological health, although, it is unclear if that is practised in Malaysian gyms.

From what is known, gym culture in Malaysia is still not clear as studies on the country's gym culture and fitness industry are far from maturity. Observations by fitness professionals such as gym enthusiast and trainer Zhi Dong, said in an interview that Malaysian gym culture in contrast to other countries in Asia, is "still very immature" (Tan, 2021). In fact, a grading tool for Malaysia's fitness facilities, The Malaysia Fitness Facility Grading Scale (MFFGS), had just only begun its development in late 2021 (Aznan et al., 2021). He further emphasized the fact that the country lacked a general understanding on gym culture and its environment.

These pieces of puzzle being combined, indicated a need to attain a deeper understanding towards the presence of gym going habit and exercising can be beneficial towards the mental health of Malaysians. Given its lack of research, understanding and cultural context, there shows a rise in mental health issues and poor mental health awareness in Malaysia (Raaj et.al, 2021). Therefore, this study was conducted to understand Malaysian gym users' personal experience of the gym and exercising, and how it has impacted their mental health and wellbeing.

REVIEW OF LITERATURE

Gym was initially built as a place for people to improve upon their physical fitness, to grow stronger, and for bodybuilding where they aim to achieve their dream physiques (Heffernan, 2020). Nowadays with the concept of mental health being brought into the picture, modern-day gyms have introduced facilities to cater for consumer needs such as mind-body and CrossFit studios (ClubReady Fitness, 2022).

Over the years, many studies have been done regarding the outcomes of gym activities and exercise. Most evidence support exercise and physical activity in improving physiology of human body as far as developing brain functions which prevent various psychological diseases (Ruegsegger & Booth, 2017). Strength training which is widely popular in gyms has been shown to prevent cognitive degeneration in the hippocampus which in return strengthens cognitive and memory functions in the long run (Reiner, 2020). Evidence as such is supported by studies such as one done in the UK to learn the experiences of gym users of Barrow Community Gym, on mental health and exercise found that the majority (81%) of their respondents perceive not only physical, but mental health improvements such as relief of depression and anxiety, a boost in self-esteem and confidence, and overall feeling good about themselves (Truman & Raine, 2001). Hence, gym activities play a significant role in developing the physique and mental health of the users.

To understand the issue of mental health in Malaysia, a press statement from the Minister of Health Malaysia reported in 2015 depicted that mental health problems amongst Malaysian citizens may have risen two-fold over the past decade prior to 2015 (Minister of Health Malaysia, 2016). The National Health and Morbidity Survey 2015 found that mental health illnesses could potentially be the second largest health problem after cardiovascular disease by 2020 (Institute for Public Health (IPH), 2015). According to the

Mental Health Foundation (2022), our bodies are not separated as mental and biological health issues can affect one another. All the more should this matter be investigated knowing that Malaysia is both unhealthy physically and mentally according to the former Health Minister, Khairy Jamaluddin (Bernama, 2021).

There are very few related studies on the area of mental health and gym activities; however, two main studies stood out. A study on mood disorders and the impact of exercise and mental health amongst elderly Northern Malaysians found that most elderly have alarming rates of mental health issues which go unnoticed (Theingi, 2022). The study found that after participating in a 12-week exercise program—depression, anxiety and stress scores reduced significantly—like the effects of antidepressants (Theingi, 2022). Besides, another study done using an experimental method, group Mindfulness-Based Cognitive Therapy and an exercise program for stress reduction amongst medical students in Malaysia found that psychological distress scores were significantly lower by the end of the program, showing that implementing exercises in therapy methods may show potential in reducing stress among students (Phang, 2016). Malaysian gym users consistently describe exercise as a primary mood regulation strategy. Yew et al. (2022) found that among 842 Malaysian adults during COVID-19, positive mood and exercise motivation were significantly linked to lower depression, anxiety, and stress scores, indicating that exercise behavior both influences and is influenced by emotional states.

Personal accounts emphasize exercise as an active coping mechanism, with users deliberately engaging in gymactivities to manage daily stressors and maintain emotional equilibrium. These studies managed to show possibilities that going to the gym and exercising are beneficial for mental health, even when hybridizing with intervention methods and programs. Hence, findings from this study further explore mental health improvisation

from the perspective of gym users.

Theoretical Framework

This study adopted the endorphin hypothesis to explain the science behind going to the gym and exercising in improving mental health. The hypothesis suggests that exercising triggers a release of endorphins in the brain, which creates a euphoric sensation which elevates moods (Anderson & Shivakumar, 2013). This is in line with the biochemical processes of mood disorders as individuals with depression are known to have low levels of endorphins, particularly serotonin and dopamine which are mood-regulating neurotransmitters (Djurović et al., 1999; Monitijo, 2021). Studies have shown that depression scores can be improved by the regulation of endorphin levels, as is the mechanisms of antidepressants (Djurović et al., 1999).

MATERIALS AND METHODS

This study utilized a qualitative research method to enable the study to explore and provide in-depth analysis of understanding the gym users' experiences, attitudes and behaviors in order to attain their perception of mental health and exercising in the gym. A qualitative narrative design was adopted in this study. Narrative analysis is a qualitative method of analysis by understanding, interpreting and constructively analyzing a story, account, experiences or any form of narrative by individuals (Earthy & Cronin, 2008). Narrative analysis provides the ability to collect vast amounts of respondents' perceptions and experiences on various layers and depth to understand and makes sense of them, and form transparent and interpretive conclusions (Bamberg, 2010).

Ten participants were recruited from a local community gym in Bangsar Sports Complex, as it was a relatively smaller gym compared to other commercial gyms. Besides, this was to support the nature of qualitative studies' mode of inquiry of in-depth analysis on specific samples (Vasileiou et al., 2018). There were a few inclusion and exclusion criteria participants must meet to be fit for the study. Firstly, participants had to be a citizen of Malaysia. This is according to the context of the study on gym users of Malaysia, and to answer the problem and justify the significance of the study. Besides, participants must be gym regulars, where they must visit the gym at least 3 to 5 times a week. The age group of participants were between 21 to 40 years of age as statistics in 2020 showed that majority of regular gym users in Malaysia fall under the age group of 24 to 34 years of age (Statista Research Department, 2022). Finally, the participants must be from Malaysian ethnics such as Malay, Indian, and Chinese. Hence, the sampling method, purposive sampling was utilized. Purposive sampling is a common qualitative method for choosing participants based on the qualities they possess that are sought after by the study (Etikan et al., 2016). Hence, 10 participants were selected for the purpose of the study.

Research Instrument

This study was carried out using a set of nine semi-structured interview questions prepared by the researcher. Semi-structured interviews are commonly the most sought-after source of data collection for qualitative studies (DiCicco-Bloom & Crabtree, 2006). They allow for flexible answering which provides in-depth layer so information to be drawn from understanding participants' points of view from different angles, body language and social cues (George, 2022; Opdenakker, 2006). Moreover, it gives the ability to lighten up the atmosphere in case of participants who feel pressured or worried of what to say next, by assurance of confidentiality and non-judgemental acceptance (Adams, 2015). Questions designed by the researcher covers all study inquiries from research objectives, questions, significance and problem. Interview protocol was validated by the research supervisor.

Data Analysis

The data collected through interviews was analyzed using thematic analysis, this method allowed researchers to identify, analyze, and interpret patterns of meaning within qualitative data. Following Braun and Clarke's (2006) six-phase approach, the analysis began with familiarization through repeated reading of the transcripts, followed by systematic coding of meaningful data segments. Codes were then collated into potential themes, which were reviewed and refined to ensure they accurately represented the data set. Finally, the themes were clearly defined and organized to provide insights into multicultural gym users' perceptions of the role of gyms and exercise in improving mental health. This process ensured a rigorous and transparent analysis, enhancing the trustworthiness of the findings.

FINDINGS

Data was coded through thematic analysis with a total of seven main themes and one subtheme. Sub-themes were considered as more specific themes amongst participant responses under a main theme. Coded themes were arranged under the research questions in order for objective analysis to satisfy the research objectives.

Under Research Question 1, two main themes were observed, (1) Relieves stress, anxiety and depression, with sub-theme (1.1) Experience catharsis/ Clears the mind/ Stress and emotional management, and (2) Sense of satisfaction from accomplishment. Under Research Question 2 there was one theme: (3) Improves self-esteem and confidence.

The interview sought to explore respondents' perspective and personal opinion on how exercising in the gym affects their mental health. Moreover, respondents elaborated on their personal experiences with exercising and how it has affected their mental health. Two main and one sub-themes were generated from interview

questions 2 to 5 under research question 1. The main themes derived are discussed below.

Relieves Stress, Anxiety and Depression

This first dimension explores whether or not respondents of the study experience any relieve from either stress, anxiety or depression as a result of exercising in the gym.

F: "I think for me it relieves my stress because uni for an early 20-year-old is very draining going to classes."

I: "Basically, all the academic pressure is so over saturated. The gym, I usually do it after all these classes, so it allows me to forget about everything and just focus on lifting heavy weights like at that point of time."

N: "Going to the gym relieves all of that for me"

S: "Yes, I think I think because of the distressing impact, like the relaxing effect, I always feel better."

K: "Even though I have very shitty day or whatever makes me feel much better after workout"

J: "Yeah, I'm upset about something and they have they you might be upset about it for months at a time but at the end of the day after my workout, I feel a little bit better."

All respondents agreed that exercising in the gym has a positive effect in relieving stress, anxiety and depression. Some respondents such as respondent F and T experience benefits to their academic stresses. Some respondents such as respondent S, K and J report to feel better after the gym with addition to respondent S experiencing a relaxing effect. Respondents D, R and C promptly agrees it has a destressing effect, while respondent N agrees to experience relief in all stress, anxiety and depression. Although not all respondents mention to have experience relief in all three areas: stress, anxiety and depression, they all share the common perspective that exercising in the gym

helps in at least one of the three areas.

Experience Catharsis/Clears the Mind/ Stress and Emotional Management

These three themes are shared across respondents when elaborating their experiences on how it helps with their stress, anxiety or depression. Respondents describe their relief in stress, anxiety or depression in a form of catharsis, a general relief as a result of releasing pent up emotions (American Psychological Association, n.d.), while also being able to clear up their mind to help remain calm. Some explain that it helps them to manage their emotions and stresses better.

I: "I definitely found improvement in terms of managing my emotions because I have an outlet now with the gym."

R: "It helps me find solution to whatever I'm going through in life that affects my mental health."

S: "So, it actually allows me to kind of calm down, keep my mind focused on the breathing exercise, so for that one hour in the gym there's an energy outlet."

D: "I feel like the gym is like a place where I can internalise and blow off steam from all the angsty-ness pent up in me."

K: "And the feeling after working out is like, you know, they always say that and dopamine shot or whatever not. But it really works for me."

J: "I mean off the internet you get stuff like you work out and endorphins are released that after that you feel better and true enough."

Responses all share similar themes of catharsis, clearing of mind, and stress and emotional management. For instance, respondents T, I and R describes exercising in the gym helps manage or find solutions for their stress related problems.

Respondents N, F, J and S describe the gym helps to clear their mind and calm down. For instance, respondent N describes it as being able to regulate their psyche.

Moreover, respondent F mentions that it keeps their mind at an optimal state for longer periods. Respondents D, K and J experience a sense of catharsis by releasing psychic energy described as "angsty-ness pent up", "edgy", and "cranky" from exercising in the gym. Moreover, respondent K and J shared similar responses of relating their feelings of relief to the release of endorphins.

Sense of Satisfaction and Accomplishment

This dimension explores respondents' sense of feeling satisfaction or relief as a result of exercising in the gym. Most report to experience satisfaction from a sense of accomplishment as a result of going to the gym.

K: "Finishing a good workout always gives me a sense of accomplishment. Like, okay, I've done something for myself today, check that, it's something for myself." D: "But even so, I feel a sense of satisfaction, relief, and most of all coming from the sense of accomplishment? That even if I was not my best that day, I did put in the work as compared to sitting at home doing nothing and allowing myself to slack."

J: "Satisfaction? Yeah, I guess because you brought something extra done for the day, which is our routine."

T: "I just feel more happy and satisfied, because I've done something that is that I'm working towards every day."

R: "But more a sense of accomplishment when we're done working out. So, like the weights increasing, you can do better energy, your performance improving."

C: "So ideally, we want to feel a sense of relief, a sense of I did manage to achieve something I did manage to give my all I did manage to work harder than last time in the gym."

Similar responses were shared amongst the respondents as they experience satisfaction from

the sense of achievement and accomplishment by going to gym. For example, respondents K, J, F and D experience satisfaction by going to the gym as they see it as accomplishing something productive for themselves rather than not doing anything and wasting time. Respondents T, N, C and R perceives satisfaction from seeking achievement from working towards a goal which Is achievable by going to the gym.

Researcher sought to understand gym users' perceived benefits of exercising in the gym. Benefits may include that of their respective perceived physical and psychological benefits. Two main themes surfaced from participants' responses from interview question 8 under research question 2.

Improves Self-esteem and Confidence

This dimension shows that respondents benefitted from gaining self-esteem, which was defined as the positive evaluation of the individuals' overall self (Rosenberg 1965, as cited in Abdel-Khalek, 2016), and their overall confidence.

F: "Compliments is a big thing. Everyone's telling you, you look fitter, you look healthier."

C: "I definitely look more confident and do better in the mirror. There are some used to be a very skinny kid, but now at least I have some muscles around I look myself in the mirror, at least I do decently."

N: "So yeah, so after working out, definitely. Self-esteem, confidence levels, it definitely went up hundred percent."

D: "It also affects my mental health that I have more confidence, self-esteem as a result I can stand up for myself more overtime."

K: "I think you have more self-confidence and your self-esteem is okay. I think for me, it's more like getting it from a low to a standard level of self-esteem."

Responses showed that self-esteem and

confidence were a common benefit shared amongst many respondents. Respondents F, C and N gained more confidence and self-esteem as a result of looking better after going to the gym. Respondents T and D experience a gain in confidence and self-esteem in being able to carry out various

activities and stand up for themselves more. Respondent K experiences improved self- esteem and confidence from diminished to an optimum level, which also translates as beneficial for their career and job nature.

Table 1: Coded Findings from Thematic Analysis

Superordinate themes	Subordinate themes
Relieves stress, anxiety and depression	Destressing effect
	Relieves academic stress
	Relieves anxiety
	Relieves depression
Experience catharsis/ Clears the mind/	Place for escape
Stress and emotional management	Stress management
	Emotional management
	Clears the mind
	Catharsis/outlet
	Calms the mind
	Endorphin hypothesis
Sense of satisfaction from accomplishment	Satisfied from accomplishing something
	Satisfied from achieving gym/fitness
	goals Productive
	Socialize
proves self-esteem and confidence	Boost self-esteem
	More confidence self
	More confidence in looks
	Improves self-esteem needed for care

DISCUSSION

Overall, all respondents agreed that exercising in the gym has a positive effect in relieving stress, anxiety, and depression as is also reported by Mikkelsen et al. (2017), that going to the gym has a positive effect on our cognitive and psychological health. Justifications by Mikkelsen et al. (2017) was also in line with some of the responses as some respondents perceive to experience the

activation of endorphin receptors from exercising in the gym, which has positive effects to their mood. Moreover, previous study done by Truman & Raine (2001) on Barrow Community Gym also supports the findings as all respondents report to feel relief from stress, anxiety, and depression after going to the gym.

Some described exercising in the gym allows them to manage their stresses and emotions better. This can be referenced from supporting evidence of Ruegsegger & Booth (2017) regarding exercising improves and develops cognitive and mental functions which in return aids in coping with psychological disorders. Besides, respondents mentioned to have experienced a sense of catharsis and allows them to calm down and clear their mind.

This study in return also proves the notion of Mikkelsen et al., (2017) regarding the biochemical processes in releasing endorphins after physical activity which alleviates mood disorders and elevates mood. This was also mentioned by respondents experiencing a sense of calmness and relaxation post gym. Hence, this provides valid evidence to Mikkelsen et al., (2017) and their physiological explanation on why exercising improves mood, while also proving the endorphin hypothesis model. Moreover, findings were also aligned with the theoretical and conceptual framework proposed for this study. For instance, respondents experience a sense of catharsis as prior feelings of "angsty-ness pent up", "edgy", and "cranky", resolved after exercising in the gym. This comes in line with the framework's explanation of sublimation; channeled frustrations and stresses displaced in a healthy manner (Burger 2019), in addition to the endorphin hypothesis which some respondents acknowledge the presence of dopamine and endorphin—a "dopamine shot" according to one respondent—releasing during their exercise as explained by Mikkelsen et al., (2017).

CONCLUSION AND IMPLICATIONS

Findings of this study were believed to be significant in understanding Malaysian gym users' perception on using the gym and its mental health benefits. As mentioned in 1.2 Statement of the Problem, there were limited studies published in Malaysia regarding exercise and mental health, and the role of the gym in exercising and mental health. Thus, this study provided a baseline information hoping to establish more useful information and knowledge for the good of the public health of Malaysia.

The study's findings confirmed that gym users perceived significant improvements to their mental health as a result of exercising in the gym. Much more can be discussed regarding mental health being a priority in gym users' reasons to exercise, or whether the benefits experienced were a byproduct of exercising in the gym. Nevertheless, all findings indicated that exercising and using the gym has positive effects on mental health. Therefore, bodies such as Malaysia Mental Health Association (MMHA), Malaysian Psychiatric Association and others similar, should start implementing the usage of the gym and exercising as a coping mechanism or as a part of intervention plans for individuals who may struggle with mental health issues. This is in line with a study by Theingi (2022), whereby elderly Malaysians with critical mental health issues, started exercising and have shown to have improvements to their mental health like the effects of antidepressants.

LIMITATIONS

Despite having an in-depth discussion which yielded detailed information on how gym and exercise can improvise one's mental health, the limitation of this study lies in the small size of sample, which inhibits the generalization of these findings to the larger population in Malaysia.

Furthermore, due to the immature gym culture in Malaysia, most accessible gyms in Lembah

Klang were private, commercialized gyms, thus, the samples were gym users from higher socio-economic groups. Their experience might differ from those from lower socio-economic groups that were using public gyms as the conflicts affecting their mental health and their coping mechanisms are different. For example, while the private gym users were worried about their grades, the public gym users might as well worry about their unpaid school fees on top of the grade itself.

RECOMMENDATION FOR FUTURE

RESEARCH

An improvement that can be done by future studies in order to further develop this field of study, by conducting a larger scale of quantitative study involving more sample groups. Besides, this study was conducted in a public community gym which belonged to the smaller class of gyms in Malaysia as most gyms in Malaysia are private, commercialized gyms. Thus, future studies on similar topic should be done within private, commercialized gyms as this would allow to target a larger population where findings can represent a wider range of gym users in Malaysia.

REFERENCES

Abdel-Khalek, A. M. (2016). Definition of Self-Esteem. In F, Holloway (Eds.), Introduction to the Psychology of self-esteem. (1st ed., pp. 1-23). Nova Science Publisher.https://www.researchgate.net/publication/311440256_Introduction_to_the_Psychology_of_self-esteem

Adams, W. (2015). Conducting Semi-Structured Interviews. Newcomer, K. E., Hatry, H. P. & Wholey, J. S. (Eds.), Handbook of Practical Program Evaluation (4th ed. pp. 492-505). Jossey-Bass. http://dx.doi.org/10.1002/9781119171386. ch19

American Psychiatric Association. (2013).

Diagnostic And Statistical Manual Of Mental
Disorders (5th ed.). https://doi.org/10.1176/appi.

- books.9780890425596
- American Psychological Association. (n.d.). Catharsis. APA Dictionary of Psychology. https://dictionary. apa.org/catharsis
- Anderson, E. & Shivakumar, G. (2013). Effects of exercising and physical activity on anxiety. Frontiers in psychiatry, 4(27). https://doi.org/10.3389/fpsyt.2013.00027
- Applebaum, V. (2012). 12 Rules of Gym Etiquette. IDEA Health & Fitness Association. https://www.ideafit.com/personal-training/12-rules-of-gymetiquette/
- Arifin, S. R. M. (2018). Ethical Considerations in Qualitative Study. International Journal of Care Scholars, 1(2), 30-33. http://www.uop.edu.pk/ocontents/Lecture%202%20Ethical%20 Consideration%20Qu%20Research.pdf
- Aznan, E. A. M., Zakaria, J. & Mohamad, N. I. (2021). The Malaysia Fitness Facility Grading Scale (MFFGS) Instrumentation Development. International Journal of Academic Research in Progressive Education and Development, 10(3), 350-360. http://dx.doi.org/10.6007/IJARPED/v10-i3/10629
- Bamberg, M. (2012). Narrative analysis. In H. Cooper, P.
 M. Camic, D. L. Long, A. T. Panter, D. Rindskopf,
 & K. J. Sher (Eds.), APA handbook of research methods in psychology, Vol. 2. Research designs:
 Quantitative, qualitative, neuropsychological, and biological (pp. 85–102). American Psychological Association. https://doi.org/10.1037/13620-006
- Barnett, K., Mercer, S. W., Norbury, M., Watt, G., Wyke, S. & Guthrie, B. (2012). Epidemiology of multimorbidity and implications for health care, research, and medical education: a cross-sectional study. Lancet, 380(9836), 37-43. https://doi.org/10.1016/S0140-6736(12)60240-2
- Beins, B. C. (2019). Equilibrium in Psychology. Encyclopedia.com. https://www.encyclopedia.com/social-sciences/applied-and-social-sciences-magazines/equilibrium-psychology#D

- Bernama. (2021, November 11). Malaysia, unhealthy nation with low health awareness. New Straits Times. https://www.nst.com.my/news/nation/2021/11/744515/malaysia-unhealthy-nation-low-health-awareness
- Boddy, C. R. (2016). Sample size for qualitative research. Qualitative Market Research, 19(4), 426-432. https://doi.org/10.1108/QMR-06-2016-0053
- Braun, V., & Clarke, V. (2012). Thematic analysis. In H. Cooper, P. M. Camic, D. L. Long, A. T. Panter, D. Rindskopf, & K. J. Sher (Eds.), APA handbook of research methods in psychology, Vol. 2. Research designs: Quantitative, qualitative, neuropsychological, and biological (pp. 57–71). American Psychological Association. https://doi.org/10.1037/13620-004
- Burger, J. M. (2019). Personality (10th ed.). Cengage Learning.
- Cambridge Dictionary. (n.d.). Meaning of gym rat in English. Cambridge Dictionary. https://dictionary.cambridge.org/dictionary/english/gym-rat
- Cambridge University Press. (n.d.). Etiquette.
 Cambridge Dictionary. https://dictionary.
 cambridge.org/dictionary/english/etiquette
- Carter, S. B. (2012). How to Deal With People Who Drain You. Psychology Today. https://www.psychologytoday.com/intl/blog/high-octane-women/201203/how-to-deal-with-people-whodrain-you
- Caspersen, C. J., Powell, K. E. & Christenson, G. M. (1985). Physical activity, exercise, and physical fitness: definitions and distinctions for health-related research. Public Health Records, 100(2), 126-131. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1424733/
- Centers for Disease Control and Prevention. (2021).

 About mental Health. Centers for Disease
 Control and Prevention. https://www.cdc.gov/
 mentalhealth/learn/index.htm
- Cherry, K. (2020). Sublimation in Behavioural Psychology. Verywell mind. https://www.

- verywellmind.com/what-is-sublimation-in-psychology-4172222
- Christiansen, V. (2020). Gym Culture, Identity and Performance-Enhancing Drugs: Tracing a Typology of Steroid Use. (1st ed.). Routledge. https://doi.org/10.4324/9781003018438
- Clarke, V., Braun, V. (2014). Thematic Analysis. Encyclopedia of Quality of Life and Well Being Research, 6626-6628. https://doi.org/10.1007/978-94-007-0753-5 3470
- ClubReady Fitness. (2022). EVOLUTION OF THE FITNESS INDUSTRY: A BRIEF HISTORY OF THE PUBLIC GYM. https://www.clubready.club/blog/evolution-of-the-fitness-industry-a-brief-history-of-the-public-gym
- Connor, L. (2020). 5 Problems in the Fitness Industry and How to Solve Them. Glofox. https://www.glofox.com/blog/problems-in-the-fitness-industry/
- Cooke, J. (n.d.). PERSONAL TRAINING: AN EVIDENCE-BASED APPROACH. Your Fitness Blog. https://jcfitness.co.uk/blog/evidence-based-personal-training/
- Crow, G., Wiles, R., Health, S. & Charles, V. (2007). Research Ethics and Data Quality: The Implications of Informed Consent. International Journal of Social Research Methodology, 9(2), 83-95. https://doi.org/10.1080/13645570600595231
- DiCicco-Bloom, B. & Crabtree, B. F. (2006). The qualitative research interview. Medical Education, 40(4), 314-321. https://doi.org/10.1111/j.1365-2929.2006.02418.x
- Djurović, D., Milić-Aškrabić, J. & Majkić-Singh, N. (1999). Serum β-endorphin level in patients with depression on fluvoxamine. II Farmaco, 54(3), 130-133. https://doi.org/10.1016/S0014-827X(99)00005-1
- Doty, J. (2006). Sports Build Character?! Journal of Sports and Character, 7(3), 1-9. https://doi.org/10.2202/1940-1639.1529
- Earthy, S. & Cronin, A. (2008). Narrative Analysis. In Gilbert, N. (Eds.), Researching Social Life

- (3rd ed.). SAGE Publications Ltd. https://s3.eu-central-1.amazonaws.com/eu-st01.ext. exlibrisgroup.com/44SUR_INST/storage/alma/AB/88/AF/6C/60/FD/40/78/53/2F/BA/D9/79/C3/DC/9E/narrative%20analysis.pdf?response-content-type=application%2Fpdf&X-Amz-Algorithm=AWS4-HMAC-SHA256&X-Amz-Date=20221203T144123Z&X-Amz-SignedHeaders=host&X-Amz-Expires=1-19&X-Amz-Credential=AKIAJN6NPMNGJALPPWAQ%2F20221203%2Feu-central-1%2Fs3%2Faws4_request&X-Amz-Signature=7f59c2e33169e61d6a58554d0a5763bcd81c30e5b45d71cf237c9c7dd593a4ce
- Etikan, I., Musa, S. A. & Alkassim, S. (2016). Comparison of Convenience Sampling and Purposive Sampling. American Journal of Theoretical and Applied Statistics, 5(1), 1-4. https://www.sciencepublishinggroup.com/journal/paperinfo?journalid=146&doi=10.11648/j. ajtas.20160501.11
- George, T. (2022). Semi-Structured Interview | Definition, Guide & Examples. Scribbr. https://www.scribbr.com/methodology/semi-structured-interview/
- Hassan, M. F. bin, Hassan, N.M., Kassim, E. S. & Hamzah, M. I. (2018). Issues and Challenges of Mental Health in Malaysia. International Journal of Academic Research in Business and Social Sciences, 8(12), 1685-1696. http://dx.doi.org/10.6007/IJARBSS/v8-i12/5288
- Heffernan, C. (2020). The History Of How The Modern Gym Came To Be. BarBend. https://barbend.com/ history-of-the-gym/
- Hyde, K. F. (2000). Recognising deductive processes in qualitative research. Qualitative Markey Research, 3(2), 82-90. https://doi.org/10.1108/13522750010322089
- Institute for Public Health (IPH). (2015). National Health and Morbidity Survey 2015 (NHMS 2015). Vol. II: Non-Communicable Diseases, Risk Factors & Other Health Problems. Institute for Public Health, Ministry of Health Malaysia. https://www.

- moh.gov.my/moh/resources/nhmsreport2015vol2. pdf
- Joffe, H. (2021). Thematic Analysis. Harper, D. & Thompson, A. R. (Eds). Qualitative Research Methods in Mental Health and Psychotherapy: A Guide for Students and Practitioners (pp. 209-223). Wiley-Blackwell. https://onlinelibrary.wiley.com/doi/book/10.1002/9781119973249#page=212\
- Lamarche, L., Gammage, K. L. & Ozimok, B. (2018). The Gym as a Culture of Body Achievement: Exploring Negative and Positive Body Image Experiences in Men Attending University. SAGE open, 8(2). https://doi.org/10.1177/2158244018778103
- Mailey, E. L., Mershon, C., Joyce, J. & Irwin, B. C. (2018). "Everything else comes first": a mixed-methods analysis of barriers to health behaviors among military spouses. BMC Public Health, 18(1013). https://doi.org/10.1186/s12889-018-5938-z
- Mental Health Foundation. (2020). Physical health and mental health. Mental Health Foundation. https://www.mentalhealth.org.uk/explore-mental-health/a-z-topics/physical-health-and-mental-health#:~:text=Our%20bodies%20and%20 minds%20are,insomnia%2C%20restlessness%20 and%20difficulty%20concentrating.
- Mikkelsen, K., Stojanovska, L., Polenakovic, M., Bosevski, M. & Apostolopoulos, V. (2017). Exercise and mental health. Maturitas, 106, 48-56. https://doi.org/10.1016/j.maturitas.2017.09.003
- Minister of Health Malaysia. (2016, September 28). MENTAL HEALTH PROBLEMS IN MALAYSIA. [Press release]. https://www.moh.gov.my/moh/modules_resources/english/database stores/96/337 451.pdf
- Montijo, S. (2021). Hormone Imbalances and Depression: Is There a Link? PsychCentral. https://psychcentral.com/depression/hormonal-depression
- Mosley, P. E. (2008). Bigorexia: bodybuilding and muscle dysmorphia. European Eating Disorders Review, 17(3), 191-198. https://doi.org/10.1002/erv.897

- Munawar, K., Mukhtar, F., Choudhry, F. R. & Ng, A. L. O. (2021). Mental health literacy: A systematic review of knowledge and beliefs about mental disorders in Malaysia. Asia-Pacific Psychiatry, 14(1). https://doi.org/10.1111/appy.12475
- Nilgar, P. (2021). Gym Etiquette 101. Institute of Nutrition and Fitness Sciences. https://infs.co.in/blog/2021/10/05/gym-etiquette-101/
- NoelDeyzel. (2021, December 26). wHy YoU UsINg mY MAcHinE BrOo???? [Video file]. Youtube. https://www.youtube.com/shorts/W9oEyojfnRA
- Ong, D. L. T., (2014). Enhancing the experience of needs satisfaction through service engagement: A case of commercial fitness centers in Malaysia. Journal of Global Scholars of Marketing Science, 25(2), 109-121. https://doi.org/10.1080/21639159. 2015.1012808
- Opdenakker, R. (2006). Advantages and Disadvantages of Four Interview Techniques in Qualitative Research. Qualitative Research in Ibero America, 7(4). https://doi.org/10.17169/fqs-7.4.175
- Outreach. (2021). What a Healthy Body Means for Mental Health: The Importance of Eating Right, Getting Exercise and Sleeping. Sage Neuroscience Center. https://sageclinic.org/blog/healthy-bodymental-health/
- Parker, C., Scott, S. & Geddes, A. (2019). Snowball Sampling. SAGE Research Methods. http://methods.sagepub.com/foundations/snowball-sampling
- Phang, C.K., Chiang, K.C., Ng, L.O., Keng, S. L. & Oei, T. P. S. (2016). Effects of Brief Group Mindfulness-based Cognitive Therapy for Stress Reduction among Medical Students in a Malaysian University. Mindfulness 7, 189–197. https://doi.org/10.1007/s12671-015-0399-2
- Raaj, S., Navanathan, S., Tharmaselan, M. & Lally, J. (2021). Mental disorders in Malaysia: An increase in lifetime prevalence. BJPsych International, 18(4), 97-99. https://doi.org/10.1192/bji.2021.4
- Reiner, V. (2020). Strength training can help protect

- the brain from degeneration. The University of Sydney. https://www.sydney.edu.au/news-opinion/news/2020/02/11/strength-training-can-help-protect-the-brain-from-degeneration. html#:~:text=The%20long%2Dterm%20 study%20found,role%20in%20learning%20 and%20memory.
- Ruegsegger, G. N. & Booth, F. W. (2017). Health Benefits of Exercise. Cold Spring Harbor Perspectives in Medicine. http://perspectivesinmedicine.cshlp.org/ content/8/7/a029694.full
- Sanjari, M., Bahramnezhad, F., Fomani, F. K., Shoghi, M. & Cheraghi, M. A. (2014). Ethical challenges of researchers in qualitative studies: the necessity to develop a specific guideline. Journal of Medical Ethics and History of Medicine, 7(14). https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4263394/
- SELF Staffers. (2010). 10 Signs You're a Gym Rat. SELF. https://www.self.com/story/10-signs-youre-a-gym-rat-2
- Statista Research Department (2022). Share of people with gym memberships in Malaysia 2020. Statista. https://www.statista.com/statistics/1182956/malaysia-share-of-people-with-gym-memberships/
- Statista Research Department. (2022). Frequency of going to the gym in Malaysia 2020, by age group. Statista. https://www.statista.com/statistics/1183083/malaysia-frequency-of-going-to-the-gym-by-age-group/#:~:text=According%20 to%20a%20survey%20on,gym%20 membership%20was%20Fitness%20First.
- Tan, Y. R. (2021). Now or Never: Gym enthusiast aims to buff Malaysia's gym culture. WeirdKaya. https://weirdkaya.com/now-or-never-gym-enthusiast-aims-to-buff-malaysias-gym-culture/
- Tenny, S. Brannan, G. D., Brannan, J. M. & Sharts-Hopko, N.C. (2017). Qualitative Study. Statpearls Publishing. https://europepmc.org/article/MED/29262162/NBK430685#free-full-text
- Theingi, M. M., Jain, T., Jagannathan, M., Noordin, N. B., Chung, V. Y. Z., Win, M. O. & Sudarsanan, S. (2022). Prevalence of Depression, Stress and

- Anxiety and Impact of Exercise on Mental Health and Physical Performance among Institutionalised Older Adults of Northern Malaysia. Journal of Positive School Psychology, 6(5), 6681- 6691. https://www.journalppw.com/index.php/jpsp/article/view/8198/5349
- Truman, C. & Raine, P. (2001). User Participation, Mental Health and Exercise: Learning from the Experiences of Barrow Community Gym: final report. Lancaster University / NHS Executive North West. https://www.research.lancs.ac.uk/portal/en/publications/user-participationmental-health-and-exercise--learning-from-the-experiences-of-barrow-community-gym--final-report(ac949c7f-7e76-4c32-a92d-5c32cd2f68e5). html
- Vasileiou, K., Barnett, J., Thorpe, S. & Young, T. (2018). Characterising and justifying sample size sufficiency in interview-based studies: systematic analysis of qualitative health research over a 15-year period. BMC Medical Research Methodology, 18(148). https://doi.org/10.1186/s12874-018-0594-7
- Walton-Smith, S. (2021). Navigating the growing toxicity of gym culture. Varsity. https://www.varsity.co.uk/sport/22166
- World Health Organization. (2022). Mental health: strengthening our response. World health Organization. https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-response
- Yew J.M., Y. C. Kueh, B. Norsa'adah, F.-W. Leong, H. Y. Tang, and G. Kuan, (2022). A Path Model of the Relationship between Mood, Exercise Behavior, Coping, and Mental Health among Malaysians during the COVID-19 Pandemic. International Journal of Environmental Research and Public Health. doi: 10.3390/ijerph19105939