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Reliability and Validity of Risk Analysis for Fitness Facilities Questionnaire (Raff-Q) Development

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Abstract

This study was intended to validate and test the reliability of the newly developed instrument, Risk Analysis for Fitness Facilities (RAFF). Risk analysis has emerged as an effective and comprehensive procedure that supplements and complements the overall management of almost all aspects of our lives. Health care managers, the environment, and physical infrastructure systems all include risk analysis in their decision-making process. In addition, the pervasive applications of risk analysis by several disciplines, along with their implementation in decision-making by industry and government agencies, have led to an incomparable growth of theory, methodology, and realistic tools. The instrument developed was applied as a cross-sectional study and data were collected as establishing factors to confirm and ascertain construct validity. Reliability was tested by measuring internal consistency. The validity of RAFF is expected to assess risk analysis in the fitness industry especially due to the COVID 19, this might also help provide a guideline for health issues or scenarios that acquire quarantine and sanitization. RAFF can be very useful to the sports, health, and fitness practitioner in developing a responsible attitude towards performing and engaging in any activities. RAFF can also be good guidance in developing the procedure in adapting to COVID 19 and preparation for any other health-related issue.

Keywords: Risk Analysis for Fitness Facilities (RAFF), Fitness Facilities, Risk, COVID-19

Introduction

Risk be defined as the "things, forces, or circumstances that cause danger to people or to what they value" (Stern & Fineberg, 1996). Hence, the risk might occur anywhere and anytime towards anyone. Relating to this, risk can also happen while participating in sporting and recreational activities. According to Kim, (2014), risk will always be associated with

physical activities. Not to mention, in the health and fitness area, physical injuries are the most common risk occurrence that results in medical emergencies (Eickhoff-Shemek, Herbert & Connaughton, 2009). According to Zakaria et al (2016), sports and recreation activities are always exposed to various safety issues before, during, and after activities, positive practices could avoid the occurrence of accidents that caused injuries to the participants. Due to this, risk can influence physical activity participation, especially in the fitness area. If the risk cannot be managed and communicate well, it might worsen the situation.

Approaches and techniques for risk reduction are now being implemented globally and in most areas of society, as shown by the growing number of Society for Risk Analysis (SRA) Local Chapters and Specialty Groups (Aven, 2018). Moreover, the World Health Organization (WHO), (2020) also developed and use the model of risk analysis. The model developed comprises three main components which are risk assessment, risk management, and risk communication. Risk assessment is a strong discipline. Zio (2018), in a study, mentioned that the structured performance of a risk assessment works as a guide to the analyst in identifying the possible hazards or threats. The second component of risk analysis is risk management.

According to the Risk Management Standard AS/NZS ISO 31000:2009, risk management can be defined as the coordinated activities to direct and control an organization that achieves objectives more possible with the risk being defined as the effect of uncertainty on objectives (Standards Australia, 2009), based on the risk management principals, the risk can either be transferred, avoided, or monitored (Alam, 2016). Risk management practices are the most important element in the organization or management of sports and recreation activities, and it is significant in increasing the well-being of a society where a safe and healthy population can be developed (Zakaria et al., 2016). Subsequently, the risk will be communicated to the public by using risk communication. Risk communication can be defined as, the exchange of information, guidance, and opinions or thoughts in real time between experts and people at risk for their health, economic or social well-being and encourage people at risk to take better decisions to protect themselves, their family, and friends (World Health Organization (WHO), 2020). WHO, (2020) also mentioned that risk communication can be spread through different mediums or channels of communication which include, media and social media communications, mass communications, and public engagement.

In Malaysia, the fitness industry is now commonly addressed as the most participated industry, this also led to the possibilities in increasing the injuries and risk to occur. Malaysians are quickly becoming aware of the need to stay healthy in an increasingly stressful environment which may in the long run can cause harm to their productivity and health (Ong, 2015). Therefore, more Malaysians are incorporating a fitness regime into their daily lifestyle with the majority of them spending on gym memberships (Teik, 2015). Relating to the previous statement, Yusof et al (2017) mentioned that Malaysia's health and fitness industry had tremendous growth, especially in interest and participation. The risk analysis can be benefited especially during a crisis, related to this, the world had been in shock due to the pandemic virus COVID-19 attack.

The Coronavirus (COVID-19) occurrence in December 2019 in Wuhan (China), has infected over one million people and excess of 60,000 deaths globally in nearly 100 days. This pandemic virus had changed almost every single norm created before this. Affected by the

attack including the fitness industry. The fitness centers and operators were once banned from operating, fitness practitioner was banned from doing any fitness activity at the park.

Currently, Malaysia is in the recovery stage, where all the business operators can operate by following the Standard Operating Procedure developed by the Majlis Keselamatan Negara Malaysia and the Ministry of Health. The new pandemic had caused a new perception, especially towards physical activity participation. Perception of risk with emerging infectious diseases is less known compared to other risk domains such as the environmental risk (Dryhurst et al., 2020), this is due to the emergence of the infectious diseases which are not frequently happen compared to environmental disaster. Hence, through this study, the Risk Analysis for Fitness Facilities Instrument was developed and validated in assessing the perceived risk upon fitness facilities used during the pandemic COVID-19.

Methodology

RAFF had been developed by focusing on three main phases which include conceptualization, validity, and reliability. 52 respondents including males (N=43) and females (N=9) fitness facilities users volunteered and completed the pilot study in developing the RAFF see Table 1. The total respondents (28.8%) were freelance, (19.2%) from the government sector and the others were from the private sector (46.2%) see Table 2. RAFF consists of 25 items related to risk analysis, 9 items assessing risk assessment include equipment provided and arrangement, standard operating procedures assessing health risk, sanitizing equipment, distances between equipment, and labeling. 8 items measuring the risk management following circumstances: emergency procedure, risk mitigation plan, instructor's certification, and basic first aid skills. 8 items evaluating risk communication include the usage of social media, instructions by spoken and written, figures, charts, and communication flow.

Results

Conceptualization

Generating a conceptual characterization of the construct is the foundation in building a novel instrument. The construct was built from a thorough literature review of filtering processes. Risk analysis can be fully verified and validated in a purely analytic sense, yet still be ineffective because it is not accepted and trusted in the public debate it is to support (Lathrop & Ezell, 2017). Accordingly, Lathrop and Ezell (2017) stated that if one side of the debate can convincingly cast doubt on the risk analysis, its role can be markedly limited. RAFF is expected to help in assessing the risk analysis component include risk assessment, risk management, and risk communication.

Validity

The construct developed need to be analyzed for validity, twenty-five items are constructed separated by risk assessment (RA, 9-items), risk management (RM, 8-items), and risk communication (RC, 8-items). Table 1 displayed the content adequacy through the Rotated Component Matrix, the results show that all constructs were accepted and valid by a measure of component value more than .40 by demanded factor.

Table 1: Rotated Component Matrix^a for Risk Analysis of Fitness Facilities

		Component		
Coding	Items	1	2	3
RA1	The fitness facility had provided the basic equipment for the first screening of COVID 19 for the client at the entrance.	.734	.081	-.195
RA2	The fitness facilities staff/employers had checked on the client temperature and observed symptoms such as cough and sore throat	.775	.026	.366
RA3	The fitness facilities had practiced the social distancing procedure for all activities and exercises provided	.591	.585	.037
RA4	The fitness facilities sanitized all the equipment and each section that has been used by the customer regularly	.775	.211	.062
RA5	The fitness facilities arrangement of equipment is easy to be accessed even there is a limitation due to the social distancing.	.757	.009	.201
RA6	The fitness facilities had provided the MYSejahtera as an easy access for entrance and exit	.683	.280	.316
RM1	The fitness facilities regularly had a maintenance on the equipment and facilities provided	.144	.007	.607
RC1	The fitness facilities had reduced the amount of membership fees during the COVID 19	.006	.749	-.176
RC2	The fitness facilities had used all types of social media platform for promotion purposes	.185	.674	.274
RA7	The fitness facilities had given their best service quality even during the COVID 19 for the members/client	.675	.335	.291
RM2	The staff/trainers/employers in the fitness facilities are professionally certified	.288	.481	.592
RM3	The staff/trainers/employers in the fitness facilities are able to give clear instruction during any activities/exercises performed	.502	.282	.615
RM4	The fitness facilities take a serious action towards any complaints/report/feedback from the client/customer	.218	.192	.862

RA8	The fitness facilities had provided an interview in determining the qualified staff/trainers/employers	.634	.209	.308
RA9	The fitness facilities provide a good salary and benefits to all the staff/trainers/employers	.556	.293	.407
RM5	The fitness facilities had provided an emergency procedure flow chart for the client/customer	.089	.120	.844
RM6	The fitness facilities staff/trainer/employer had briefed the customer/client of possible risk for each activities/exercise	.335	.244	.602
RM7	The fitness facilities had provided a secure emergency area for any light to moderate injury to be treated	.120	.220	.711
RM8	The staff/trainers/employers in the fitness facilities are provided with first aid certificates/	.191	.023	.504
RC3	The fitness facilities had provided secure locker area with CCTV for the customer/client belonging	.386	.605	-.090
RC4	The fitness facilities had provided an online registration form for the new members	.188	.826	-.049
RC5	The fitness facilities own a website that provides information for the client/customer	.201	.807	.021
RC6	The fitness facilities had established the e-filing system for all transactions and membership records	.042	.792	.275
RC7	The fitness facilities optimize the use of technology for virtual class for the client/customer	.233	.814	-.012
RC8	The fitness facilities had a good networking and communication with the client/customer in the virtual world	.314	.817	.122
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.				
a. Rotation converged in 5 iterations.				

Reliability

Table 2 represents the reliability. Reliability for each scale was analyzed by measuring Cronbach's Alpha for each of the sub-dimensions and was well above the 0.7 thresholds, ranging from 0.85 to 0.93. Therefore, the construct was reliable. The constructed risk analysis was portrayed in Figure 1.

Table 2: Reliability Statistic for Risk Analysis of Fitness Facilities

Items	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
OVERALL	.924	.930	25
RA	.876	.886	9
RM	.834	.842	8
RC	.850	.866	8

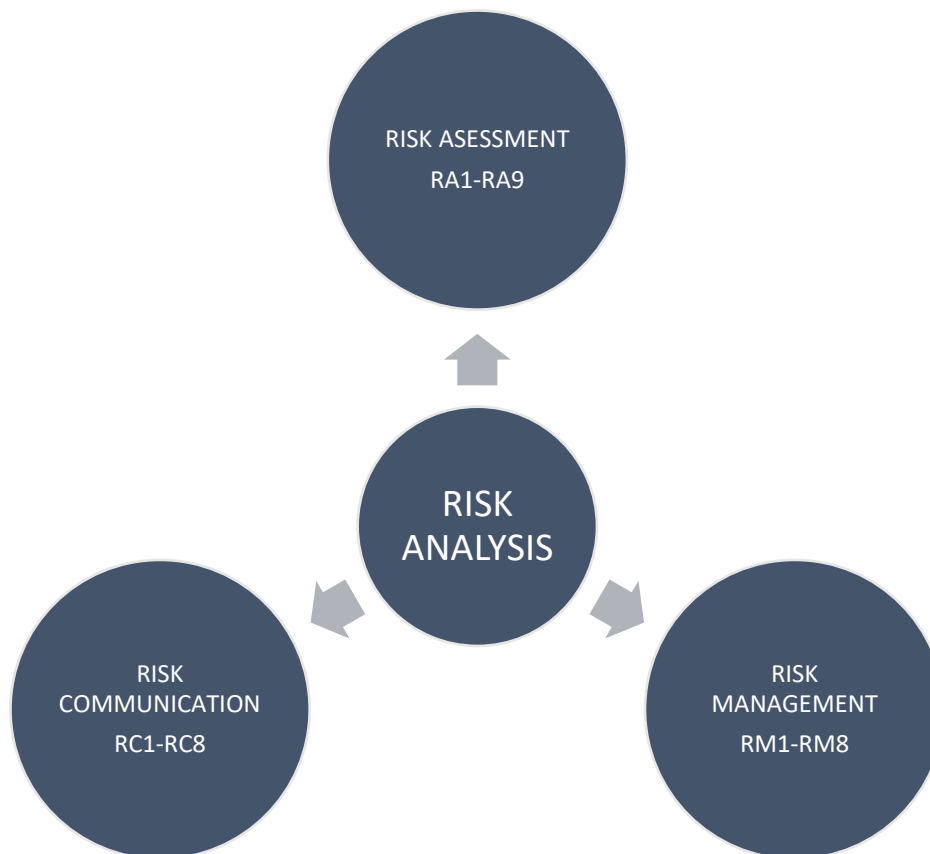


Figure 1: Risk Analysis Model

Discussion/Conclusion

The development of RAFF is expected to give a huge impact especially towards assessing the risk of fitness facilities usage in Malaysia. This instrument was developed to suit the current pandemic situation and suggested to be used by the fitness facilities operators in reducing risk especially due to COVID-19. RAFF is a great start for policy and standard guidelines development to be practiced by the fitness facilities operators. The new pandemic had caused a new perception, especially towards physical activity participation. Perception of risk with emerging infectious diseases is less known compared to other risk domains such as the environmental risk (Dryhurst et al., 2020), this is due to the emergence of the infectious diseases which are not frequently happen compared to environmental disaster. Consequently, RAFF may be able to reduce risk perception among fitness facilities users and increase the participation in physical activity engagement at fitness facilities. RAFF can be very useful to the sports, health, and fitness practitioner in developing a responsible attitude towards performing and engaging in any activities.

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