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Psychological well-being of Muslim online gamers in Malaysia: Are they mentally well enough?

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Abstract

The psychological well-being of online gamers has gotten more attention as online games have become recognized in the e-sport field. Hence, identifying the psychological status of gamers is essential to ensure their well-being is at optimum, and further interventions can be strategized if needed. The identified psychological profiles include psychological well-being, duration of play, and internet gaming disorder. A total of 221 Muslim online gamers from various e-sport centers and academies in Malaysia participated in this study. The psychological well-being was measured using Psychological Well-Being Scale, while IGD was measured using the Internet Gaming Disorder Scale-Short Form. The results indicated that the frequency of playing online games and daily play duration were associated with gamers' psychological well-being. Furthermore, preoccupation and withdrawal symptom of gaming disorder were significant in predicting psychological well-being. The importance of this study for Muslim online gamers is to increase their awareness on the continued interweaving of psychological well-being and internet gaming disorder experience, so that early mental distress can be best addressed.

INTRODUCTION

Online games have become professionalized sports activities, and for some groups of gamers, it has become a prospective career option in today's world of competitive gaming (Faust et al., 2013; Griffiths, 2017). After decades of introduction, online games were initially a hobby, and leisure increased to serious activity and serious leisure (Seo, 2016; Wagner, 2006). Moreover, pandemic COVID-19 has been bringing online gamers more popular among us. During this pandemic, everyone tries to find the best way to spend time, and online games were a popular method for this aim (Barr & Copeland-Stewart, 2021).

In 2020, Newzoo reported an increase in the economic benefits of the online gaming sector with a 9.3% plus year-on-year increase. This increase is mainly due to the COVID-19 pandemic contributing to increased interest in playing online games. In addition, the launching of the next-generation consoles toward the end of the year is another critical contributor (Newzoo, 2020). In addition to the economic impact, outcomes in the form of achievements are generally used as a form of professional online game progress or what is known as e-sports. This is to highlight the differences between professionals and leisure (Martončik, 2015).

In Malaysia, e-sports have recently become recognized as an area of sports activities. For the past five years, Malaysia has been getting flooded with places that offer e-sports training professionally, such as the Academy of e-sports and e-sports training centers at various locations in the different states of Malaysia. In Malaysia, eSports Malaysia (eSM) is

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the governing body for electronic sports and is registered under the Malaysian Sports Commission.

In September 2021, Malaysia has achieved a new milestone in e-sports as it launches its first National e-sports tournament ever for people with disability. This embodies the spirit of "e-sports for all" and to promote inclusivity. Therefore, e-sports have reached many Malaysian population across demographic and Malaysia being a multicultural country, it is certain that e-sports have reached many players from various religion background. 61.3 percent of Malaysian population practices Islam (Department of Statistic Malaysia, 2021), thus it is an ideal time as this study to move toward understanding Muslims e-sport players on the vast world of online gaming.

As online games have gotten more attention from researchers, there is raising concern for the psychological well-being of online gamers. This is because online games may appear to be simply sitting riveted to their chair and confined to their space. In many aspects, online game activities are often associated with a long duration of play. This duration is considered to be correlated with internet gaming disorder (King & Delfabbro, 2019), severe involvement in online games (Lin et al., 2013), and significant improvement (Limelight, 2020). However, some researchers argue that just because the e-sports athletes confine within an electronic, computer-mediated environment, it does not in any way imply that e-sports cannot be physically taxing and tiring for the athletes (see Sjöblom & Hamari, 2016; Woerman & Kirschener, 2015).

Psychological well-being is usually conceptualized as some combination of positive affective states such as happiness (the hedonic perspective) and functioning with optimal effectiveness in individual and social life (the eudemonic perspective) (Deci & Ryan, 2008). The research about psychological well-being began with Ryff's model, and He measured this aspect in detail. Ryff's described six characteristics of psychological well-being—self-acceptance, positive relations, environmental mastery, personal growth, autonomy, purpose in life (Deci & Ryan, 2008; Ryff & Keyes, 1995). Ryff has been defined that a person with a high score of self-acceptance has a positive attitude about self, understands and acknowledges various aspects of self—including good and bad attributes—and feels optimistic about past life. Moreover, as an indicator that a person has a high score of relationship with others marked by has relationships with others that are warm, satisfying, trusting, concern about the welfare of others, capable of build deep empathy, affection, intimacy, and understands to give and take in human relationships (Ryff & Keyes, 1995).

In addition, people with a high score of autonomy show self-determining and independence, resist social pressures to think and act in specific ways, regulate behavior from within, and evaluate self by personal standards. For environmental mastery characteristics, people with high scores have a sense of mastery and competence in managing the environment, controlling a complex array of external activities, effectively using surrounding opportunities, and choosing or creating contexts suitable to personal needs and values. For the aspect of purpose in life, a high score related with has goals in life and a sense of directedness, feels there is meaning to present and past life, holds beliefs that give life purpose, has aims and objectives for living. Finally, for personal growth, a high score marked by has a feeling of continued development, sees self as growing and expanding, open to new experiences, has a sense of realizing his or her potential, sees improvement in self and behavior over time, is changing in ways that reflect more self-knowledge and effectiveness (Ryff & Keyes, 1995).

People with high levels of psychological well-being (PWB)—in all aspects generally—report considerable satisfaction with their life achievements and circumstances. They have a perceived relative absence of anxiety and depression, can cope with everyday life, and exhibit high levels of enjoyment and self-esteem (Diener, 2000). There are two significant aspects of

psychological well-being. The first of these applies to how people experience positive emotions and feelings of happiness. This element of PWB is often referred to as subjective well-being (Diener, 2000). Subjective well-being is one's evaluation of one's happiness level and satisfaction with existence. In self-report measures of subjective well-being, two components are examined: affective well-being and cognitive well-being. Affective well-being refers to the presence of pleasant affect (e.g., feelings of happiness) versus the absence of unpleasant affect (e.g., depressed mood), and cognitive well-being refers to one's evaluation of life overall (i.e., global life satisfaction) and specific life experiences (e.g., job satisfaction) (VandenBos, 2015).

In regards to Muslim's psychological well-being, Islam since its inception, has played a determining role in shaping Muslim lifestyles (Walsh, 2017). Some studies demonstrate that a positive correlation between religious belief and the state of person's mental and physical health (e.g., Alexander et al. 2015; Abdel-Khalek & Lester 2017; Abu-Raiya et al. 2016). A study by Fatima, Sharif, and Khalid (2020) found that religious coping and religious practices were significant predictors of psychological well-being outcomes. However, when the researchers put perceived social support and self-efficacy factors between these relations, they mediated these relations with only autonomy and self-acceptance of psychological well-being.

Significant association between religious practices and psychological well-being is well established in literature review. For example, Bayani, Esmaeili, & Ganji (2020) found that religious activity, such as fasting could lead to the promotion of overall psychological well-being and personal growth of people who practiced fasting. Despite the growing research on relation between religious and overall psychological well-being, a few researchers focused on Muslim's overall well-being, particularly limited studies concerned on their psychological well-being in relation to online gaming activities. Therefore, this research intends to investigate the psychological well-being of Muslim online gamers and its relation with the duration of play and internet gaming disorder. The objectives of this research are to identify whether internet gaming disorder could influence their psychological well-being where frequency gaming is taken into consideration.

The Rationale of Current Study

Given the worldwide internet accessibility, every age group population could involve in online games activities. The Muslim Malaysian youth population aged between 18 through 35 represent the highest involvement in online games (89%). This trend is projected to increase (Ministry of Youth & Sports, 2019). Serious measures should be considered to prepare online gamers with healthy psychological well-being by clearly recognize the detrimental effects of online games activities and ways to prevent them.

Nielson and Karhulahti (2017) highlighted that evidence linking internet gaming disorder and e-sport. Internet gaming disorder is conceptualized as an addictive mental disorder when a person is excessively involved in playing video games, and their life is preoccupied with internet games activities. Nielson and Karhulahti (2018) stated that internet gaming disorder and esports could coexist, and further discussion is lacking. Therefore, the current study aimed to reveal the correlation between frequency and period play and the psychological well-being of gamers. For this purpose, the researchers utilized the Psychological Well-Being Scale (Ryff et al., 2006; Ryff, 1989).

Hypotheses

1. The frequency of video game play per week correlates with the psychological well-being of gamers
2. Duration of playing video games in a day correlates with the psychological well-being of gamers

3. The psychological well-being of gamers could be used to predict chances of developing internet gaming disorder.

METHODS

Population and Methods of Sampling

This study utilizes quantitative methods using a correlational survey design. The sampling frame includes individuals who involve in regular online game activities. Subjects were reached through e-sport centers and academies in Malaysia. They have characterized that aged ten through forty years old. This age range is based on data where the largest population of online gamers worldwide are those who belong to Gen Y or familiar, known as a "Millennia" and Gen Z or known as "Digital Native" (Betz, 2019; Dolot, 2018; Gilbert, 2020). The sample size calculation was conducted using the statistical software G*Power (Erdfelder et al., 1996) to determine the number of subjects in this study to represent the adequate sample size. The analysis yielded a recommended size of 54 with a predetermined medium effect size of r = .30 with an alpha level at .05 and statistical power of .80. This study involved 221 Muslim respondents who agreed to participate in the study. The inclusion criteria of the respondents include they are active players of online gaming and play more than one online game genre, while who exhibited substance use problems and psychosis addiction were excluded in the study.

Instrumentation

This study utilized the Psychological Well-being Scale (PWSB) and the Internet Gaming Disorder-Short-Form (IGDS) to measure the variables involved in the study. Furthermore, demographic questions of respondents pertaining to their age, experience attending official online gaming training, and frequency of playing were asked along with the instrumentations.

The Psychological Well-being Scale (PWSB)

This study utilized the Psychological Well-Being Scale (PWBS) developed by psychologist Carol D. Ryff (Ryff et al., 2006; Ryff, 1989). The scale is designed to measure the following dimensions of *eudaimonic* psychological well-being: 1) autonomy, 2) environmental mastery, 3) personal growth, 4) positive relations with others, 5) purpose in life, and 6) self-acceptance. In the early of its development, Ryff developed this scale with 42 items. However, in the latest edition, Ryff et al. (2006) developed a short form of PWBS with 18-items. In both the full and short versions, the response was measured using a 7-point likert scale from "strongly agree" to "strongly disagree", with the scores given range from 1 to 7. Reverse-scored items are worded in the opposite direction of what the scale is measuring.

In Lee, Sun, & Chiang's research (2019), the Short form of PWBS gets .88 for Cronbach's alpha, with aggregated subscale alphas of .72–.88, except .57 for the autonomy dimension of psychological well-being. All items were valid with significance at the .01 level (2-tailed) except item no six valid with significance at the .05 level (2-tailed). The 18-items PWBS was reliable with Cronbach's alpha .89. In this study, the English version of the PWBS was adopted for the purpose of this study and obtained the overall internal consistency value of Cronbach's alpha .90.

Internet Gaming Disorder Scale-Short Form (IGDS9-SF)

The IGDS9-SF was developed by Pontes & Griffiths (2015). It was the first short standardized psychometric method to measure Internet Gaming Disorder (IGD) according to the nine Internet Gaming Disorder (IGD) criteria as suggested in the current version of the Diagnostic and Statistical Manual of Mental Disorders by the American Psychiatric

Association (DSM-5). The IGDS9-SF is a one-dimensional tool consisting of nine objects that, as in the DSM-5, represent all nine IGD criteria. In a heterogeneous sample of 1,397 English-speaking gamers (85.1% males; mean age 27 years) recruited from 52 English-speaking online gaming forums, the IGDS9-SF was initially created. This scale using the 5-Likert point scale from 1 (strongly irrelevant) to 5 (strongly relevant) as a response (T'ng & Pau, 2020). The scale has been translated into 14 languages include to Malay language version. T'ng and Pau (2020) have translated and validated this scale through an online survey. It was conducted among 1175 gamers, consisting of youth aged between 18 and 29 years old. The single-factor scale showed good content validity, concurrent validity, discriminant validity, and reliability (T'ng & Pau, 2020). The scale was adopted for the purpose of this study.

Procedures

This study received permission from e-sports centers that were involved in this study prior to administering the questionnaire. The survey was administered using a Google form sent out to respective samples. The screening was conducted to exclude samples with substance use problems and psychosis symptoms resulted in 221 Muslim respondents who agreed to participate in the study. The data of the respondents' responses were recorded in Google sheet.

Data Analysis

Descriptive analysis was used to identify the psychological well-being of the respondents. The Kendall test was utilized to investigate whether frequency and period of online gameplay and psychological well-being are statistically correlated. Furthermore, multiple regression analysis was used to determine if the psychological profile of respondents could predict internet gaming disorder. Data were analyzed using SPSS.

RESULTS AND DISCUSSION

Results

The survey was distributed through Google form link to the e-sport centers and academies in Malaysia. The survey was held from January through March 2021. 221 Muslim respondents aged 10 to 40 years old consisted of 192 males and 27 females, and two respondents preferred not to state their gender - who indicated their consent to participate in this study. In terms of race and religion, all of them identified themselves as Malay Muslims. In this study, the age of respondents was categorized in a cohort of generations. 80.5% of respondents were Gen Z (Digital native), and 19.5% were Gen Y (Millennial). If the age range is mapped based on psychosocial development, most respondents are adolescents (71.0%) below 20. Meanwhile, 27.6% were early adults, and the rest (1.4%) were middle adults. The mean age of the respondents was 18.14.

In addition, some game players prefer to change their gender in the games. In this study, most of the respondents (53.4%) still choose to use the same gender as the real gender, and the rest decide to change their gender during play. Furthermore, concerning respondents' marital status, a majority were single (n = 210), while eight were married, and the rest of them were divorced.

Concerning respondents' demographic of online gaming behavior, most respondents (68.67%) never attended official online gaming education or training programs; merely 31.33% participate in special education or training related to online games. Furthermore, based on the duration of the gaming experience, most respondents (56.22%) have been playing for more than 36 months. Then, 12.02% of respondents played for 12 to 18 months,

Table 1. Respondents' Demographics of Online Gaming Behavior

	n	%
Experience attending official online gaming education/training		
Yes	67	31.33
No	154	68.67
Duration of Gaming Experience		
For 6 Months or Less	7	3.00
7 to 11 Months	12	5.58
12 to 18 Months	26	12.02
19 to 24 Months	20	9.01
25 to 30 Months	16	7.30
31 to 36 Months	15	6.90
More than 36 Months	125	56.0
Frequency of Playing Online Games In A Week		
7 Days a Week/Daily	183	82.83
6 Days a Week	9	4.29
5 Days a Week	9	4.29
4 Days a Week	8	3.86
3 Days a Week	7	2.58
2 Days a Week	4	1.72
1 Day a Week	1	0.43
Duration of Playing Online Game In a Day		
1 hour or Less	9	4.29
2 to 3 hours	60	26.61
4 to 5 hours	65	29.18
6 to 8 hours	50	23.18
More than 8 hours	37	16.74

Table 2. Score Norms of Psychological Well-being (PWBS)

Level	Formula	Score
Low	$X < (\mu - 1.\ \Sigma)$	$X < 72 - 18 / X < 54$
Moderate	$(\mu - 1.\ \Sigma) < X < (\mu + 1.\ \sigma)$	$72\text{-}18 < X < 72+18 / 54 < X < 90$
High	$(\mu + 1.\ \sigma) < X$	$72 + 18 < X / 90 < X$

Score Norms of Internet Gaming Disorder (IGD)

Level	Formula	Score
Low	$X < (\mu - 1.\ \Sigma)$	$X < 27 - 6 / X < 21$
Moderate	$(\mu - 1.\ \Sigma) \leq X < (\mu + 1.\ \sigma)$	$27\text{-}6 \leq X < 27+6 / 21 \leq X < 33$
High	$(\mu + 1.\ \sigma) \leq X$	$27 + 6 \leq X / 33 \leq X$

Table 3. Level of Psychological Well-being (PWBS) (*n=221*)

Level	Frequency	Percent
Low Level of PWBS	48	21.7
Moderate Level of PWBS	147	66.5
High Level of PWBS	26	11.8

and the other respondent was distributed to different categories. Further information on the duration of playing is presented in Table 1.

Regarding the psychological well-being scale (PWBS), the results were interpreted that high scores indicate a high level of psychological well-being (Wilson et al., 2013). However, to analyze the psychological well-being score, the norming process is required to categorize the respondents' scores in a rank. The psychological well-being of respondents and their tendency to experience IGD is categorized into three-level namely low, moderate, and high. This categorization is based on the percentile obtained as presented in Table 2.

Based on the norm scores, the majority (66.5%) of the respondents were categorized in a moderate level of psychological well-being. In comparison, 21.7% were classified in a low level of psychological well-being. Conversely, merely 11.8% of respondents were organized in a high level of psychological well-being. The results for the psychological well-being of respondents are illustrated in Table 3.

Table 4. The subscale of Psychological Well-Being

The subscale of Psychological Well-being	*M*	SD
Autonomy Subscale of PWB	10.62	4.293
Environmental Mastery Subscale of PWB	11.00	3.934
Personal Growth Subscale of PWB	9.99	4.286
Positive Relations with Others Subscale of PWB	11.86	3.856
The Purpose in Life subscale of PWB	12.40	3.374
The Self-Acceptance Subscale of PWB	11.04	3.789

Table 5. Psychological Well-Being and Spent of Time (n = 221)

Measurement		Duration of play	Frequency of playing online games in a week	Duration of playing online games in a day
Kendall's tau_b of PWBS	τ_b	-.049	-.149*	-.038
	ρ	.374 (>.05)	.006 (<.05)	.452 (>.05)

Table 6. Mean Score of IGD Symptoms (n=221)

IGD Symptoms	*M*	SD
Gaming for escape or mood	3.40	1.37
Preoccupation	3.32	1.20
Tolerance	3.15	1.26
Gaming despite harms	3.07	1.32
Loss of control	3.00	1.30
Withdrawal	2.91	1.37
Deception of others about gaming	2.79	1.44
Nongaming interest	2.65	1.36
Conflict/interference due to gaming	2.54	1.41

Table 7. Means, Standard Deviation, and Inter-correlation for Psychological Well-being and Internet Gaming Disorder (n=221)

Variables	*M*	SD	PWB	IGD
Psychological well-being	68.28	21.358		.4344**
Internet gaming disorder	26.83	8.019	.4344**	

**$p < .000$

Table 8. Regression Analysis Summary for Psychological Well-being Predicting Internet Gaming Disorder (n = 211)

Variable	B	CI	β	*p*
Constant	48.521	[39.344, 57.698]		.000
IGD 1	-.230	[-2.570, 2.110]	-.014	.846
IGD 2	2.66	[.466, 4.864]	.189	.018
IGD 3	.293	[-2.026, 2.611]	.019	.804
IGD 4	1.49	[-.741, 3.728]	.101	.189
IGD 5	1.86	[-.232, 3.969]	.132	.081
IGD 6	-2.98	[-5.192, -.775]	-.204	.008
IGD 7	1.83	[-.197, 3.873]	.138	.076
IGD 8	.030	[-1.865, 1.925]	.002	.975
IGD 9	2.09	[-.006, 4.196]	.152	.051

Note: R^2 adjusted = .182. CI = confidence interval for B.

The psychological well-being instrument has six subscales. All subscales were investigated in this study. The maximum score for a subscale is 21, and the lowest score is 7. All of the subscales mean within the range of 9.99 to 12.40. The respondents' scores at all subscales of psychological well-being were at a moderate level. However, the highest mean of subscales achieved was the purpose in life (12.40) and positive relationships with others (11.86). In contrast, the lowest subscale mean was personal growth (9.99) and autonomy (10.62). The full picture of the psychological well-being subscale showed in Table 4.

In addition, there is a significant negative correlation between psychological well-being score and frequency of playing online gaming in a week with τ_b = -.149, *n = 221*, and *p* = .006. In addition, there is a negative correlation between psychological well-being scores and

duration of daily online games playing, but this is less significant with τ_b = -.038, *n = 221,* and *p* = .452. Moreover, there is a negative correlation between psychological well-being scores and duration of play. The result show less significant with τ_b = -.049, *n = 221,* and *p* = .374.

Concerning internet gaming disorder among the respondents, it was assessed using the IGDS9-SF (Pontes & Griffiths, 2015). The scale categorized online games deemed to experience the gaming disorder if they answered "strongly relevant" or scoring by "5" for at least five symptoms out of nine. In addition, they are categorized to experience gaming disorder if they experience the symptoms for less than a year. Thus, the respondents of this study answered the IGD questions based on their one-year experience of playing online games. Results demonstrated that less than 50% of the respondents (n = 23) experience gaming disorder symptoms while the rest experience few symptoms of internet gaming disorders. However, they are not deemed to be categorized as having full gaming disorder.

To further understand the gaming disorder symptoms among the respondents, the mean score of every item that represented symptoms of gaming disorder was analyzed. All the items mean within the range of 2.54 to 3.40, which indicated the gaming disorder symptoms were at a moderate level. Within the range, the highest mean of symptom was gaming for escape or mood, *M*=3.40, followed by preoccupation symptoms, *M* = 3.32, and tolerance, *M* = 3.15. The mean score for each symptom was depicted in Table 6.

A Pearson's correlation (*r*) was computed to assess the correlation between psychological well-being scores and IGD. There was a moderate significant correlation between these two variables (*r* = .434, *p* = .000). Based on the correlation value, the coefficient of determination can be predicted. This value indicated that 18.84% of the respondents' differences in gaming disorder results are associated with their psychological well-being difference (r^2 = .18835). The results of the correlation may be found in Table 7.

To answer whether the psychological well-being could be used to predict chances of developing internet gaming disorder in respondents, the multiple regression was conducted for analysis. The results from the regression equation were statistically significant, *F* = 5.221, *p* = .000. The model summary gives r^2 =.182. This model showed that 18.2% of the respondents' differences in internet gaming disorder are accounted for by their differences in autonomy, environmental mastery, personal growth, positive relations, the purpose in life, and self-acceptance of psychological well-being.

With respect to examining the statistical significance of the regression coefficients for each predictor, preoccupation and withdrawal symptom of internet gaming disorder were statistically significant at the .05 level, *p* = .018, and *p* = .008 respectively. This suggests that these symptoms of IGD that most contributed to predicting psychological well-being of respondents. The results were presented in Table 8.

When analyzing the percentage for each predictor's contribution to the variance in the psychological well-being, the results from the part correlation between psychological well-being and the nine predictors from the regression analysis were used for that purpose.

The results from the part correlation indicated negative correlation for gaming to escape (*r* = -.013, r^2 = -.012) and withdrawal (*r* = -.180, r^2 = -.166) suggesting that the lower the score on these two symptoms of IGD, the healthier online gamers' psychological well-being would be. Additionally, the *r* = .162, r^2 = .149 for preoccupation suggests that 14.9% of the variance in psychological well-being is accounted for by the variance in preoccupation and the *r* = 1.20, r^2 = .109 for loss of control suggests that 10.9% of the variance in the psychological well-being is accounted for by the variance in loss of control. Moreover, the *r* = .122, r^2 = .111 for deception of others about gaming suggests that 11.1% of the variance in the psychological well-being is accounted for by the variance in deception of others about gaming. Lastly, the *r* = .134, r^2 = .122 for conflict due to gaming suggests that 12.2% of the variance in the psychological well-being is accounted for by the variance in conflict due to

gaming. From the results, internet gaming disorder symptoms like preoccupation with the game and conflicts in life due to gaming are relatively more important predictor than deception of others about gaming loss of control for predicting psychological well-being.

Discussion

The aim of this research was to look into the psychological well-being of Muslim online gamers and the factors contributed to it. The population of this study is aligned with the current trend of online games in the world. In the current direction, children start playing online games earlier (Sinclair, 2019). The most significant online gamers worldwide are Gen Y and Gen Z (Gilbert, 2020; Betz, 2019; Dolot, 2018). These two groups range cover 61% of the total online gamer population in the world (Gilbert, 2020).

Previous researchers and scholars have been concerned about psychological well-being among online gamers (Kowert, 2020). In this research, the frequency and duration of playing video games were used in Kendall's τ coefficient analysis to analyze its relation with psychological well-being of online gamers. The statistical findings support for this hypothesis of a relationship between the frequency and duration of playing online games and psychological well-being. Although the findings suggest that the more frequent they play video games, the lower their psychological well-being would be, however this is not a causation relationship. There are many other factors that could mediate the correlation direction between these two variables. Ponnusamy et al. (2020) found that a high level of psychological well-being has been correlated with willpower to resist their short-term needs (i.e., gain respect and support) while focusing on the long-term work plan. This could be a protective factor to avoid putting them at high risk for internet addiction.

This finding parallels with the results of the study by Goh, Jones, and Copello. In their report, it was stated that out of 165 respondents surveyed, a negative correlation was found between psychological well-being and the higher level of playing games (Goh et al., 2019). Kocadag's research results also explain the same phenomenon. The group of online gamers who played more than an average of six hours a day had significantly lower psychological well-being than the group who played less than an average of six hours a day (Kocadağ, 2020). Online gamers who play daily affect their psychological well-being levels. Moreover, teenagers' desire to have an e-sport career significantly predicts their psychological well-being level in low levels (Kocadağ, 2019). Hence, the playing duration of online games becomes a string parameter that correlates with the psychological well-being of the gamers.

The psychological well-being of online gamers is influenced by various variables such as competitive behavior deemed necessary for professional e-sports players. Online game competitions are always full of challenges. Pressure such as time pressure and an impediment to goal progress—can interfere with emotional well-being (Gärling et al., 2016). Games and the desire to win competition also risk in increasing stress. This stress then increases physical problems such as stress appraisal, cardiovascular issues, and emotional outcomes (Porter & Goolkasian, 2019). In fact, in the process of competing and adapting to online gaming, peer pressure can arise (Guo et al., 2018).

To cope with psychological distress, religion role has been discussed extensively by experts. Some researchers found that individuals involved in public religious activities showed no significant relationship with their overall psychological well-being as compared to private religious activities (Nurasikin, Khatijah, Aini, Ramli, Aida, et al. 2013). Moreover, intrinsic religiosity was found to have negatively significant with the emotional disorder, such as depression (Francis et. al., 2019). Intrinsic religiosity is referred to as degree of one's commitment and motivation towards personal religion. On the other, there were also some studies recorded that there were no significant association between religiosity and psychological well-being (Lupo & Strous, 2011). Although the findings were inconsistent,

religion remains as an essential societal component to be studied in discussing the overall psychological well-being. In Malaysia, Che Rahimi, Bakar, & Yasin (2021) in their study revealed that demographic factors including age, religion, zone, positive and negative religious coping have significant relationship with presence of psychological disorder. Their study confirmed that religion played a role in determining one's psychological well-being status in managing distress.

In addition to demographic factors, the findings of this research strengthened the evidence that psychological well-being of online gamers served as a contributing factor for internet gaming disorder. The findings from this research are in line with the results of Saunder et al. (2017), who found that the prevalence of disorder gamers in some Asian countries ranges from 10-15%. Significant correlation between psychological well-being and gaming disorder symptoms, i.e., gaming for escape or mood relief, preoccupation, and tolerance, should be addressed when discussing the overall well-being of online gamers. A systematic review study found that escapism and avoidance coping are both predictors of IGD and mediators between various psychological characteristics (such as self-esteem, loneliness, self-concept, and anxiety) and problematic online gaming (Melodia, Canale, & Griffiths, 2020). Therefore, additional tools to assist online gamers in regulating their emotions become critical and serve as protective factors to curb online gaming addiction. Skills in emotional regulation can range from religious activities to cognitive and behavioral aspects of individuals. For Muslim online gamers specifically, degree of their personal religion commitment and motivation could be used as an additional tool for emotional regulation in maintaining overall psychological well-being.

Implications

This study has provided additional information about the effects of frequency and duration of play on the psychological well-being of Muslim online gamers. The findings of this study can serve as a basis for counselors in schools and social workers dealing with adolescent gamers to provide proper assistance for them to reduce the tendencies of getting into internet addiction. If frequency and duration of play could be risk factors for gamers' psychological well-being, protective factors, such as emotion regulation skills, Mindfulness activities, and well-balanced daily activities, are needed. This could be integrated into the addiction prevention of online games.

Limitations and Suggestions

In this study, a survey design was used, thus limits its interpretation to overgeneralize its findings. In future research, a qualitative approach can be used to explore the subscales of psychological well-being and cross-check the results obtained quantitatively. Motivation to play online games can be used as a moderating variable between psychological well-being and other variables.

CONCLUSIONS

In conclusion, the points of the findings highlight the significant correlation between duration of play online gamers and psychological well-being and internet gaming disorder. This study recognizes variables of the psychological well-being of online gamers in discussing their gaming disorder.

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AUTHOR CONTRIBUTION STATEMENT

FS conceived the presented idea, verified the data analysis, supervised the findings of this work, and provided final editing of the manuscript. AY carried out the data collection and wrote the manuscript draft.

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