the iafor

journal of psychology & the behavioral sciences

Volume 6 – Issue 1

Editors: Sharo Shafaie & Deborah G. Wooldridge

ISSN: 2187-0675

iafor

IAFOR Journal of Psychology & the Behavioral Sciences
Volume 6 – Issue 1

IAFOR Publications

IAFOR Journal of Psychology & the Behavioral Sciences

Published by The International Academic Forum (IAFOR), Japan
Executive Editor: Joseph Haldane
Publications Manager: Nick Potts

IAFOR Publications
Sakae 1-16-26-201, Naka-ward, Aichi, Japan 460-0008
IAFOR Journal of Psychology & the Behavioral Sciences
Volume 6 – Issue 1
Published December 12, 2020

ISSN: 2187-0675

ijpbs.iafor.org

Cover image: Tim Mossholder
https://unsplash.com/photos/bo3SHP58C3g

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ISSN: 2187-0675 | doi.org/10.22492/ijpbs

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Editors' Note:

We are happy to present to you the 2020 autumn issue of our journal. The *IAFOR Journal of Psychology & the Behavioral Sciences* covers a variety of empirical studies about applications of psychological theories in educational and mental health settings. Moreover, the journal showcases studies that investigate topics regarding human development, psychological outreach services, family studies, as well as articles addressing the needs of at-risk children, youth and families, and vulnerable populations.

The *IAFOR Journal of Psychology & the Behavioral Sciences* is a peer-reviewed, editorially independent, and an interdisciplinary journal associated with the IAFOR (The International Academic Forum) conferences on Psychology and the Behavioral Sciences. This issue is devoted to several interdisciplinary studies which represent diverse topics, cultures, and disciplines in the fields of psychology and the behavioral sciences. All manuscripts published in the journal have been subjected to the thorough and accepted processes of academic peer review. Some of the articles are original, and some are significantly revised versions of previously presented papers or published reports in the IAFOR's conferences and proceedings.

We want to express our sincere appreciation to all reviewers for taking time from their busy schedules to review each assigned manuscript and offer their professional expertise and recommendations for improvement of these published articles. Also, we like to take this opportunity to acknowledge the hard work of our support staffs at the IAFOR who were involved with the publication of this journal.

Please note that we are seeking manuscripts for our upcoming 2020 Spring and Fall issues. Below is the link to the journal's web page for your attention; please review this web page to become familiar with the journal's objectives and the submission guidelines for authors:

http://iafor.org/publications/iafor-journals/iafor-journal-of-psychology-and-the-behavioral-sciences/

If you have any questions, please do not hesitate to contact us, otherwise please send your manuscript to the journal's editors below. Thank you for considering this invitation, and we look forward to hearing from you soon.

Best Regards,
Journal Editors

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The IAFOR Journal of Psychology and the Behavioral Sciences

Volume 6 – Issue 1 – 2020
Editors & Reviewers

Editors:

Reviewers:

Happiness Among Urban Poor Filipino Families

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Abstract

Filipinos are generally observed to display happiness despite the experience of poverty. However, limited researches have been done to support or explain such observation. The purpose of the study was to examine the level of happiness among selected Filipino families who were living below the poverty line. The study also identified the families' sources of happiness and the actions they take to experience happiness. A qualitative research design was used. Twenty urban poor two-parent families were the subjects of the study. The Family Subjective Happiness Scale was administered to the families to determine their level of happiness. In depth-interviews were used to examine the families' sources of happiness and the actions they take to be happy. The data were analyzed using descriptive statistics and thematic analysis. The results showed that most of the poor families were either happy or very happy. The primary sources of happiness of the families include good family relationship, family togetherness, having children, faith in God, and good health. On the other hand, learning to be content, finding ways to solve their problems, engaging in leisure activities, and developing optimism were the things that the families do to achieve or experience happiness. Despite being poor, the families were happy mainly because they have close family relationships and are contented with their lives. The study provided valuable contribution to understanding why Filipino families show happiness despite poverty.

Keywords: family, family well-being, subjective happiness, Filipino families

Introduction

Despite daily struggles and constant poverty, Filipinos in general seem predisposed to happiness. The poverty incidence in the Philippines is wide at 25.8 % (Philippine Statistics Authority, 2015). Nevertheless, the country has consistently scored high on measures of subjective happiness such as the 2014 Gallup Positive Experience Index, wherein the Philippines ranked among the highest in terms of positive emotions across 143 participating countries (Clifton, 2015). Similarly, the 2013 Fourth Quarter Survey by the Social Weather Station (2014) in the Philippines revealed that 86% of Filipinos were either very happy or fairly happy with their lives.

Happiness pertains to the "subjective appreciation of one's life as a whole" (Rojas & Veenhoven, 2011, p. 2). It has both cognitive and affective definitions. Using the cognitive view, happiness is defined as evaluating one's life according to certain standards, criteria, goals, and desires. From an affective view, happiness is defined by a person's evaluation of his life, and the occurrence of positive and negative experiences and emotions (Veenhoven, 2006). Happiness is subjective in nature and is not always tied to material things – the most probable reason why Filipinos are generally happy. For Filipinos, having fulfilling relations has precedence over material things, with the family as the primary source of their happiness (Cruz & Ramiro, 2009). Various studies examining different population groups in the Philippines (i.e. middle-aged, never-married women, government employees, private employees) have found that the family is the top source of happiness among Filipinos (Cruz & Ramiro, 2009; Virola, et al., 2010; Santos, 2008). Other common sources of happiness include good health, religion and spiritual pursuits, productive work, friends, and achievements. Among the low-income group, family, health, and food are top sources of happiness for women, while employment, family, and health are the top sources of happiness for men (Virola, et al., 2010).

While the family has consistently been found to be the main source of happiness among Filipinos, surveys on happiness normally consider individuals as unit of analysis. It is very much likely that Filipinos' individual happiness emanate from positive family well-being, though this area remains unexplored. Positive family functioning has been found to lead to healthy and happy individuals (i.e. Botha & Booysen, 2014; McKeown, et al., 2003). The model of family and child well-being proposed by Newland (2015) for instance, depicts that family wellbeing is the foundation of child-wellbeing. In fact, "families that function well support societies, and families with effective QoL are seen as social resource" (Isaacs, et al., 2007, p. 178).

Given these findings, it seems worthwhile to examine the happiness of Filipino families as a single unit since family functioning has a significant contribution to the well-being of the individual. Examining the happiness of Filipino families would provide a new perspective in understanding the individual subjective well-being of Filipinos. More so, looking into the sources and experiences of happiness of poor families would shed light to specific family attributes that explain why they remain happy despite their distressful situation. Hence, this study explored the happiness of urban poor Filipino families and their sources of happiness. This research focused on the idea of happiness of families, whereas existing studies delved on individuals only. Furthermore, this study attempted to discuss the interplay of the different domains of happiness as shared by the families. This research aimed to contribute to the small amount of literature on happiness of families in developing nations by addressing the following objectives: 1) Describe the perceived level of happiness among selected urban poor Filipino

families; 2) Identify the sources of happiness of poor Filipino families; and 3) Describe actions that poor Filipino families take in order to achieve or experience happiness.

Methods

Sample

The participants of the study include 20 urban poor nuclear Filipino families, who were informal settlers in a small village in Quezon City, the most populous city in the Philippines. Due to the qualitative nature of the study, the families were selected through purposive sampling following these inclusion criteria: they should have school-aged children and earning less than 8,000 Php or 160 USD per month, the poverty threshold in the Philippines for a family of five. The participants were recruited by requesting the Village Captain of the research locale to refer families who meet the study's inclusion criteria. The researcher personally visited the families in their homes to explain the nature of the study and to seek for their consent to participate. This procedure resulted to 20 families participating in the study.

Guest et al. (2006, as cited in Saunders, et al., 2009) argued that in-depth interviews with at least 12 respondents would suffice for a sample involving a homogenous group. Since the primary goal of the study was to gain an in-depth understanding of the sources of happiness and the actions taken to achieve happiness of a homogenous family group (i.e. urban poor Filipino families with school-aged children), the sample size of 20 families was deemed sufficient to provide information-rich data to address the study's objectives. For each family, both parents and the eldest child served as the respondents. The ages of the parents ranged from 25 to 50 years old, while the eldest children were between 10 to 12 years of age. The families had one to five children, with most of them having two to three children. Half of the fathers were employed as full-time workers, six were employed in part-time jobs, two were self-employed, and the other two were unemployed. Sixteen out of the 20 mothers were housewives, three were employed in part-time jobs, and one was employed full-time.

Instrument

The study made use of two content-validated instruments. The first instrument is the Family Subjective Happiness Scale (FSHS), a 5-point, 4-item scale which was adapted from the Subjective Happiness Scale of Lyubomirsky and Lepper (1999). The Subjective Happiness Scale (SHS) is a highly reliable and valid four-item, 7-point Likert scale that measures individual global subjective happiness. Using the SHS as basis, a parallel global subjective happiness scale was developed for families. Compared to the SHS which considers the subjective happiness of individuals, the FSHS measures the happiness of the entire family unit based on the perspective of individual family members. The resulting FSHS was translated in Filipino, the respondents' language. The FSHS was content validated by two home economics experts from the University of the Philippines to ensure its accuracy in measuring family subjective happiness. On the other hand, to ensure the accuracy of translation from English to Filipino, the scale was examined by a representative from the *Sentro ng Wikang Filipino* (Center of Filipino Language) who is adept with both the English and Filipino Languages. To obtain the happiness score of each family in the FSHS, the mean scores of three family members (mother, father, and eldest child) were computed. Scores in the FSHS were interpreted as follows – 4.1 to 5 (very happy); 3.1 to 4 (happy); 3 (neither happy nor unhappy); 2 to 2.99 (unhappy); and 1 to 1.99 (very unhappy).

The second instrument, the Family Subjective Well-Being Questionnaire (FSWQ) was used to gather qualitative data from the families. The questionnaire consists of semi-structured and

open-ended questions that focus on the sources of happiness of the families and the actions they take to be happy. The FSWQ was also examined by two home economics experts to ensure the accuracy of the questions in addressing the study's research objectives. All interview questions were written in the Filipino language.

Data Collection

Data was obtained by visiting each family in their respective homes. An explanation was given regarding the nature of the study to all respondents, followed by a request to participate. The respondents were also assured of the confidentiality of the study's results. For each family, both parents and the eldest child were asked to answer the FSHS separately. Since the target respondents were not complete for most families during the time of data collection, the researcher left the FSHS with one family member and collected these after a few days. After obtaining the accomplished FSHS, in-depth interviews were conducted with one member of the family, who was either the mother or the father. The interviews took place in a comfortable area chosen by the respondent. Some interviews were done in the homes of the respondents, while other interviews were conducted in an open area within the neighborhood. The interviews took around 15 to 20 minutes on the average. A voice recorder was used to obtain accurate details. One issue that arose during data collection was the unwillingness of two husbands to complete the FSHS. The researcher resolved this by computing only the scores of the mother and child for the two families.

Data Analysis

The level of happiness of the families was analyzed using descriptive statistics, while thematic analysis was applied to the interview data. Data from the interviews were transcribed and encoded leading to themes about the families' sources of happiness, actions taken to experience happiness, and things aspired to be happy. Themes that emerged were strengthened by providing verbatim quotes.

Results and Discussion

Level of Happiness of Urban Poor Filipino Families

Consistent with the high individual happiness scores of Filipinos, majority of the families were either happy or very happy (Table 1). A large percentage of them (45%) obtained scores of 4.1 to 5.0 on the Family Subjective Happiness Scale, which translates to "very happy". The same percentage of families obtained a score of 3.1 to 4, which can be interpreted as "happy". On the contrary, one family was neither happy nor unhappy, while another family was unhappy.

The high perceived level of happiness among the families supports studies showing that Filipinos are one of the happiest people in the world. Data from the 2005 World Values Survey on subjective well-being showed that the Philippines ranked higher than more developed countries such as Japan, Taiwan, and South Korea (National Science Foundation, 2012). The 2014 Gallup World Poll also reported that the Philippines shared the fifth (5th) rank with Singapore, Switzerland, and Uruguay among 143 participating countries in terms of positive emotions (Clifton, 2015). The results also support previous observations that being poor does not necessarily equate to being unhappy. An earlier study of Biswas-Diener and Diener (2001) among poor people in Calcutta, India, found that slum dwellers, homeless people, and sex workers have positive levels of satisfaction for specific life domains, even though they have a slightly negative overall life satisfaction. They are satisfied with many aspects of life despite having adverse living conditions because they are religiously active and have satisfying social and family relationships. Biswas-Diener and Diener concluded that "while the poor of Calcutta

do not lead enviable lives, they do lead meaningful lives. They capitalize on the non-material resources available to them and find satisfaction in many areas of their lives" (p. 349). Looking at the results of the current study in a similar way, it can be implied that poor Filipino families are also happy because as Santos (2008) said, Filipinos value kinship, and are satisfied with their family. However, unlike the Calcuttans, who have a slightly below neutral level of global life satisfaction, Filipinos families in the current study were found to be very happy.

Table 1: Perceived Happiness of the Selected Poor Filipino Families

Level of Happiness	Score	*f*	%
Very Happy	4.10 to 5.0	9	45
Happy	3.1 to 4.0	9	45
Neither Happy nor Unhappy	3.0	1	5
Unhappy	2.0 to 2.99	1	5
Very Unhappy	1.0 to 1.99	0	0

Note. $N = 20$

Simon (2002) discussed the proposed three stages of a happy life by Martin Seligman. A "pleasant life" refers to the enjoyment of daily experiences and the satisfaction of needs; an "engaged life" meant being engaged or getting into the "flow" of doing things, while a "meaningful life" pertains to finding purpose through the participation in other people's lives. These stages could explain the happiness of poor Filipino families. They are happy because they find joy in everyday activities such as spending time with their family; and watching their children laugh, smile, and dance. Filipino families are also optimistic, easily pleased and content, and have high faith in God's will and provision (Caruncho, 2008; Cruz & Ramiro, 2009). It is also possible that the poor families experience a "meaningful life" through their positive relationship and interaction with their family, kin, and the community.

Sources of Happiness of Urban Poor Filipino Families

The thematic analysis of interview transcripts yielded several emergent themes on the families' sources of happiness. These themes were labeled as – Positive Family Relations, Family Togetherness, Children, Faith in God, Good Health, Togetherness with Relatives and Neighbors, Sufficient Food, Material Things, and Accomplishment of Daily Tasks (Table 2). As evident from the emergent themes, the sources of happiness of the families are generally simple and non-material.

Positive family relations and family togetherness emerged to be the top sources of happiness among the urban poor Filipino families (Table 2). All families shared stories about their sources of happiness that are related to these two themes. Positive family relations pertain to the harmonious relationships between spouses and siblings. The respondents emphasized that they feel happy when the family members get along well and when spouses remain faithful to each other. The parents also shared that not having arguments with their spouses make them feel happy. The importance of positive family relationships in achieving family happiness is shown in the words of the Respondent 5 – "*We are happy if there is love, cooperation, and respect for each other; respect and trust are important for a family to be strong.*" On the other hand, family togetherness, as a source of happiness, refers to spending quality time with family members and doing simple activities together such as watching television, sharing funny stories, playing, cooking, and sharing daily experiences. They also experience happiness when they find opportunities to go to nearby places as a family such as public parks, malls, the church,

playground, or a relative's house. The respondents also shared that being complete as a family provides a special opportunity to exchange stories with one another. For this reason, they are especially happy during mealtimes and weekends. Respondent 1 shared: "*We are happy when we are complete as a family. Like now, my husband is home. He only goes home once a week, sometimes on Mondays*".

Children also emerged to be a major source of happiness among the families and ranked third among their sources of happiness (Table 2). Nineteen of the respondents narrated stories about the happiness that their children have brought to their families. The parents shared that being able to provide for their children's needs and wants such as food and school necessities brings happiness to them. The respondents also shared the happiness that the family experiences whenever their children perform well in school and show affection to other family members. Moreover, the simple things that children do such as laughing, smiling, and dancing become sources of happiness to the family. In addition, the children's good behavior like being respectful, kind, and obedient also brings happiness. Some respondents even mentioned that they feel happy just by seeing their children grow up normally. A respondent highlighted that a family is incomplete without children. The importance of children as a source of happiness for families is displayed in the words of Respondent 11: "*The family's source of happiness is the child; we do not allow our children to leave our sight*".

Filipino families are known to place high value on children. Medina (1991) said that a Filipino family is not normally considered a family without a child. She emphasized that the importance of children to Filipino families is reflected in the Filipino term for family ("mag-anak") which contains the root word "anak" or child in English. Children are a source of happiness to families because they provide socio-emotional benefits such as companionship, love, happiness, play, fun, and distraction from worries. Children also provide a sense of fulfilment and meaning in life (Bulatao, 1978, as cited in Medina, 1991). Although parents know the cost of having children, the value they place on them surpasses the child rearing difficulties that they must face (Medina, 1991).

Table 2: Emergent Themes on the Families' Sources of Happiness

Emergent Themes on Sources of Happiness	***f*** [a]	**Rank**
Positive Family Relations	20	1.5[b]
Family Togetherness	20	1.5
Children	19	3
Faith in God	14	4
Good Health	11	5
Being Together with Kin and Neighbours	9	6
Sufficient Food to Eat	5	7
Material Things	3	8.5
Accomplishing Daily Tasks	3	8.5

Note. $N = 20$

[a] Reflects the number of respondents who stated key terms under a particular emergent theme

[b] The top rank refers to the most common source of happiness

The emergent theme, faith in God, ranks fourth as a source of happiness among the poor families (Table 2). Faith in God and constant prayers give the families hope and confidence that their needs will be fulfilled. Their strong faith in God becomes a source of happiness

because they believe that God will hear their prayers, guide them, and will never neglect them. Filipinos are generally religious and display strong faith in God (Abad, 2001), a probable reason for their resilience and happiness even during desperate times. Previous studies have shown that religiosity is related to happiness (i.e. Abdel-Khalek & Lester, 2009; Francis, et al., 2014). The belief that the families can depend on God in times of trouble is a possible explanation why they remain optimistic and happy despite economic struggles.

Good health emerged as fifth source of happiness of the families. Fourteen out of the twenty respondents mentioned that their children's good health provides happiness to them. Some of the families also mentioned that they feel happy when their relatives are healthy. Respondent 18 expressed feeling secure when their children are healthy because they do not have to worry about medical expenses – "*We are happy when we are healthy because we feel secure. We are not problematic even if we do not have money*."

Another emergent theme is togetherness with relatives and neighbors. Maintaining constant communication with their kin gives the families joy, especially when they live far apart. The families experience happiness when they find time to visit each other or call each other through their mobile phones. Exchanging stories and jokes provide them a feeling of happiness. Relatives also provide a source of support during difficult times, such as when financial resources are limited. Retaining a constant relationship with their kin lightens their burdens, as Respondent 14 shared:

> "*When we call our relatives in the countryside, they ask "what is your viand?", then we jokingly say - "We don't have, how about you? You might want to send us". That's why we feel happy. Our sadness disappears when we hear good news from them.*"

The other emergent themes on the families' sources of happiness include having sufficient food to eat, material things, and accomplishing daily tasks. Some of the respondents shared that being able to eat regularly is enough to give them happiness because there are times when they do not have food to eat and go about the day with an empty stomach. Material things also emerged as a source of happiness but interestingly only three respondents mentioned key terms related to this theme (Table 2). Material things as an emerged theme pertains to the acquisition of new things such as home appliances, clothing, toys, gadgets, and personal belongings. The last theme that emerged from the interviews is "accomplishing daily tasks" which ranks equally with the theme "material things" (Table 2). This theme refers to performing daily routines such as household chores, and childcare. Doing the chores with their family and finishing tasks ahead of time provide happiness to them.

Curiously, none of the respondents mentioned money as a source of their family's happiness. They claimed that money is simply a secondary source of happiness needed to acquire basic needs. In saying so, money is only important for the families to cover their basic needs. Nonetheless, despite the insufficiency of material resources, these families learned to be content and happy. As quoted from Respondent 13 – "*Money is not that important (for a families' happiness). Money is not the only thing that people needs. Money is only important to help cope with daily life*."

There are opposing views in literature about the relationship between happiness and material wealth. Some studies suggest that wealth is associated with happiness, while other studies show otherwise (Borrero, et al., 2013). There are also studies supporting a balanced view that economic well-being is related to happiness but only to a certain extent. For instance, the

Easterlin Paradox holds that that there is a threshold to the increase in satisfaction or happiness that one begets from accumulation of wealth (Easterlin, 1974, 2001 as cited in Borrero, et al., 2013). An increase in income provides people with higher happiness but only until a certain extent. As one gets richer, increments in happiness that one receives from material things decline. Similarly, Veenhoven (1993, as cited in Cox, 2011) hypothesized the diminishing returns theory of the relationship between subjective well-being and income, saying that the relationship between the two variables is more evident among the poor. He also believed that meeting basic needs impacts subjective well-being greatly, but once needs are met, the increase in happiness diminishes.

In the current study, the Filipino families were found to be happy despite extreme poverty; citing non-material factors such as family relations, togetherness, and children as top sources of happiness. This finding is consistent with the study of Virola, et al. (2010) which revealed that the family is the top source of happiness among Filipinos. Their reliance mainly on non-material possessions as sources of happiness is a possible explanation for this happy outlook despite being poor. The results also have similarities with other Asian countries such as Bangladesh, wherein kinship is valued, unlike European and American countries, where individualist goals are given more importance (Santos, 2008; Cox, 2011).

The association between close interpersonal relationships and happiness is supported by literature. For instance, a comparison of happiness across 41 countries in the study of Haller and Hadler (2006) showed that individuals who have close personal relationships, and those who are socially and religiously active are significantly happier than individuals who do not enjoy such relations. In another study, Borrero et al. (2013) analyzed data on wealth, happiness, and culture across 197 countries and found that collectivism helped poor people attain great happiness despite major adversities in life.

Actions Poor Filipino Families Take in Order to Achieve or Experience Happiness

The in-depth interviews revealed four emergent themes on the actions that the poor families take to achieve or experience happiness – Being Content, Finding Ways to Solve Problems, Doing Leisurely Activities, and Developing Resiliency and Optimism (Table 3). Being content ranked first as the most common action that the poor families take to experience happiness. Being content refers to being satisfied with whatever the families have and with what God has given them. The respondents shared that they choose to be content with simple things such as good family relationships and having enough basic needs like food, shelter, clothing, and good health. The other families are contented because they have the capacity to overcome their problems. Remarkably, many of the interviewed families are satisfied with God's simple provisions. They choose to be grateful for the things they have, instead of aspiring for more wealth and material things, as shown in the statement of Respondent 8 – "*We are content with what we have. We are happy if the family is complete. We do not wish for a lot of money. We just want a simple life, with what God has to offer*."

Contentment has a positive correlation with life satisfaction as shown in the study of Rojas & Veenhoven (2011) wherein contentment was found to account for "71 % of the variability in life satisfaction" (p. 10). The high positive correlation between contentment and life satisfaction provides a sound explanation why the poor Filipino families in this study are happy despite their financial struggles. They are contented with simple joys of life such as having basic needs and good family relations. They find joy with the simple non-material aspects of life that consequently brings them happiness.

Finding ways to solve their problems is another action that the families take to be happy. Since financial constraint is their main problem, they try to find varied ways to earn extra income through scavenging, selling used plastic and bottles, borrowing money from their neighbors, and asking help from their relatives. The families also try their best to budget their limited income and to practice frugality to ensure enough money when needed. Because of insufficient income, there are times when spouses argue with each other. Nevertheless, the respondents emphasized that instead of allowing the lack of money to be a source of conflict, family members should help each other to solve their problems. Respondent 19 said – "*We are able to get by. Money should not be a source of conflict. That is why we have to find ways, to save. If we earn income, we have to save so that we will have money when bills come*."

Table 3: Emergent Themes on Actions taken to Achieve Happiness

Emergent Themes on Actions Taken to Be Happy	***f*[a]**	**Rank**
Being Content	14	1 [b]
Finding Ways to Solve Problems	11	2
Doing Simple Leisure Activities	8	3
Developing Optimism	6	4

Note. N = 20
[a] Reflects the number of participants who stated key terms under a particular emergent theme
[b] The top rank refers to the most common source of happiness

Doing simple leisure activities emerged as the third most common strategy that families take to experience happiness. Leisure activities include trips to nearby places and eating out with their friends whenever they have the time and money. Leisure activities also pertain to granting their children's simple requests to eat good food and buy simple toys. As Respondent 16 shared – "*We bring the children to other places so that the whole family will be happy. We buy them the toys that they like and feed them delicious food."* Finally, developing optimism ranked as the fourth strategy that families employ to be happy. To deal with family problems, they practiced positive thinking and patience even as they continue to trust in God. They try to approach their present difficulties and future uncertainties with optimism. Particularly, they faced their problems in a positive way to secure a happy family life.

Conclusion

This study investigated the level of happiness among selected urban poor Filipino families, their sources of happiness, and the actions they take to achieve happiness. Consistent with the high individual happiness of Filipinos, the families in this study are generally very happy despite being very poor. The reason for such can be explained by their ability to find happiness from simple non-material aspects of life such as family relations and togetherness. The families in this study are happy because of their good disposition and conscious effort to be contented with what they have. They also choose to be thankful of the simple things that God has provided them. The families in this study also possess qualities such as resilience and optimism that further strengthens their happiness. The results of the study have implications on the nature of interventions that should be provided by the government and family practitioners to help poor families. Since the families give strong importance to family relationships and their children, it only follows family programs to help these families should focus not only on financial and livelihood programs but also on further strengthening family relations and children's welfare.

The study has several limitations that may be addressed by future studies. First, the study interviewed only one parent per family about their sources of happiness and the actions they take to be happy. However, the data would be richer and more comprehensive if the viewpoint of other family members were also considered. Future studies may consider comparing differences in the perspectives of husbands and wives, as well as children and parents on family happiness. Second, since the sample size of the study was limited, it was difficult to establish a connection between individual happiness and the collective happiness of the entire family unit. Future studies should consider gathering data from a wider sample of families to examine this link. Third, the translation of the Subjective Happiness Scale to the Filipino language was only validated through examination by a Filipino language expert. However, the scale's validity would be more ascertained if the translation goes through the process of forward translation, backward translation, expert panel examination, and pilot testing, prior to the administration of the final scale (Tsang, Royse, & Terkawi, 2017). Finally, the study focused only on subjective happiness of poor families with school-aged children. Therefore, future studies should examine the possible variations on happiness across different stages of the family life cycle.

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Cross-Cultural Social Skills of Turkish Students in Japan: Implications for Overcoming Academic and Social Difficulties During Cross-Cultural Transition

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Abstract

The present study examines the social skills of Turkish students during their cross-cultural transition to the academic and social cultures of Japan. One of the purposes of this study is to partially fill the gap in the literature by exploring and identifying Turkish students' social skills during their stay in Japan. Another purpose of the study is to differentiate social skills, particularly used in educational settings – such as the classroom environment – from those exhibited in other contexts. This study also aims to provide universities with potential solutions to design better support and provide aid to Turkish students through their transition stages. A semi-structured interview was selected as the primary data collection tool for the present research. A total of 21 students from Turkey who were in higher education or had already obtained a degree from a university in Japan volunteered to participate in this study. Each interview transcript was individually examined via qualitative analysis, aiming to identify and categorize cross-cultural social skills. The analysis produced separate hierarchical levels of categories related to both the academic and social cultures of Japan. The findings revealed that Turkish students tend to use different types of social skills in different settings which are labelled "social skills specific to academic culture in Japan" and "culture-specific social skills." Additionally, the cross-cultural social skills of Turkish students are classified in respect of their use (i.e., acquired skills, avoided skills, and maintained skills), based on a previous study.

Keywords: cross-cultural adaptation, cross-cultural social skills, qualitative research, Turkish students in Japan

Introduction

The number of international students that prefer to study in Asia has dramatically increased. Among East and South-East Asian countries, Japan is the primary host (The United Nations Educational, Scientific and Cultural Organization [UNESCO], 2014). The international student population in Japan has been growing steadily since the early 2000s and constitutes a significant proportion of higher education students. According to the Japan Student Services Organization (2017), international students represent 6% of all students in higher education in Japan, and a total of 267,042 students representing more than 30 nations attended 779 institutions in 2016 (Ministry of Education, Culture, Sports, Science and Technology of Japan, 2016) including graduate schools, universities, junior colleges, colleges of technology, professional training colleges, university preparatory courses, and Japanese language institutions.

Universities in Japan host a substantial number of international students, including Turkish students. According to both the Global Flow of Tertiary-Level Students (UNESCO, 2019) and The Embassy of The Republic of Turkey in Tokyo (2017), the number of Turkish students in higher education is 152. Although there is a substantial body of research that focuses on international students from Asian and Western countries in Japan (Guo, Yiwei, & Ito, 2014; Maruyama, 1998; Simic-Yamashita & Tanaka, 2010), there is little research that investigates cross-cultural experiences of Turkish students in Japan; the present research focuses on Turkish students' social skills, which have significant influence on their cross-cultural adaptation process (Bochner, 2003).

Although certain factors may persuade students to study in a specific country, adjusting to a new culture may still be necessary for a certain period to successfully complete the transition. This period comprises social, cultural, emotional, and academic adjustments (Duru & Poyrazli, 2011). Searle and Ward (1990) suggest that cross-cultural adaptation comprises two distinct dimensions—psychological (emotional/affective) and sociocultural (behavioural) adjustments. Researchers indicated that although the two forms of adjustment are associated with each other, they are primarily predicted by different types of variables. Additionally, they indicate that there is a distinction between psychological and sociocultural adjustments during a cross-cultural transition. It has been indicated that psychological adjustment is affected by personality, life changes and social support variables, whereas sociocultural adjustment is associated with expectations and perceived cultural distance. In other words, while psychological well-being is more linked to clinical factors, social skill acquisition is related to social learning and cognitive variables.

Although there is no sufficient single definition of social skills and the variety and selection of dimensions classified as social skills are enormous, many researchers of social skills acknowledge that key social skills are represented by the basic sending and receiving of information (Riggio, 1986). It is assumed that basic social skills are "learned social abilities and strategies; thus, the term *skill* is used broadly" (Riggio, 1986, p. 650). Social skills are also described as the rules, conventions and assumptions that regulate interpersonal interaction, particularly verbal and non-verbal communication, and they vary across cultures (Argyle, 1994).

One implication is that sojourners who do not have culturally relevant social skills and knowledge will have trouble in starting and preserving harmonious relations with host people, or, in the case of immigrants, with mainstream members. Sojourners' culturally inappropriate

behaviours will elicit misunderstandings and may lead to offense. Research has demonstrated that people with lower cultural skills are less likely to accomplish their professional and personal goals. For instance, expatriate executives may cause alienation in their local partners and lose market share, international students may not successfully complete courses, hospitality industry workers may elicit offense in tourists, and the job prospects of migrants may be negatively influenced (Argyle, 1994).

Bochner (2003) has conducted studies on the social networks of various groups of sojourners to confirm that poor social skills have negative influences, which are intensified by the distance segregating the visitor's (or the minority's) culture from that of the host (or majority). He proposes that a critical component in a sojourner's adjustment is the extent to which sojourners have host-culture friends – the reason being that these friends act as informal culture-skills mentors. Those visitors who socialized mainly with co-nationals underperformed on a variety of parameters than sojourners who had formed non-trivial relationships with their hosts.

The culture learning approach stresses the behavioural components of culture contact. The approach is equally relevant in describing encounters both within and between cultures, and it has an interactive aspect rather than just focusing on the visitor or newcomer – it points out a path for corrective activity. Skills and knowledge required for an individual to function effectively in a second-culture environment involve learning the historical, philosophical, and socio-political foundations of the target society, and internalizing related behaviours. Focusing on behaviour rather than personality relieves the individual of the shame caused by insufficient adaptation to the second-culture environment by laying the blame on competency rather than personality. Moreover, learning new skills is simpler than a change in personality (Bochner, 2003).

Cross-cultural encounters bring about culture-specific stress that is unique to a cultural environment (Tanaka, 2005). For example, in their study Chapdelaine and Alexitch (2004) investigated the difficulty in developing social skills in which Furnham and Bochner's (1982) model of culture shock was tested. Data was collected from a total of 156 male international students in a Canadian university. The results of the study indicated that the students experienced a higher level of social difficulty in Canada than in their countries of origin, which implied that the students have experienced culture shock. Moreover, the results revealed that the students did not experience social difficulty in their countries of origin. In addition, lower degrees of social interaction with host people were found to be linked to higher degrees of culture shock. Higher degrees of cross-cultural differences in social interaction were found to be linked to lower levels of social interaction with host people. The authors indicated that social interaction with host people alone directly predicted culture shock and accounted for a substantial degree of variation. Therefore, it is suggested that, through meaningful social interactions with host people, international students are more likely to acquire and develop the culture-specific social skills that would facilitate efficient cross-cultural interactions (Chapdelaine & Alexitch, 2004; Furnham & Bochner, 1982).

Wilson, Ward, Fetvadjiev, and Bethel (2017) conducted a study about sociocultural adaptation, adjustment (psychological and international), social skills, cultural engagement, and cultural intelligence of international people. They collected data from 316 individuals (international students, expatriates, immigrants, and refugees aged 16 years and older living a host country for five years or less at the time of the study). They found that sociocultural adaptation was positively and significantly associated with social skills, cultural engagement, and cultural intelligence. Additionally, social skills were found to be strongly linked to social interaction.

In another study, it was found that, as the level of cultural distance increased, individuals were more likely to experience sociocultural adjustment problems. This result suggested a proportional increase in both cultural disparity and difficulty in learning necessary social skills (Searle & Ward, 1990).

Purpose of the Study

There are various reasons as to why the present research focuses on Turkish students in Japan. Firstly, while Turkish international students go through similar cross-cultural adaptation processes as other international students (Duru & Poyrazli, 2007), they exhibit different characteristics in terms of individualistic and collectivistic values (Göregenli, 1995; 1997). Although Turkey is classified as a collectivistic country like Japan (Hofstede, 1980), Turkish culture, in which both individualistic and collectivistic values coexist (Göregenli, 1995; 1997), is a blend of Western and Eastern cultural elements, and both traditional and modern characteristics can be observed as a synthesis in Turkish society (Sunar & Fişek Okman, 2004). For instance, in a study on interpersonal behavioural difficulties of Japanese people living in Turkey (Nakano & Tanaka, 2019), dissimilarities between Japanese cultural norms and Turkish cultural norms were presented. The study indicated that Japanese people living in Turkey had trouble in a variety of cultural norms such self-expressions or private space, which do not overlap between these two cultures. Secondly, there are limited studies available (e.g. Bektaş, 2004; Bektaş, Demir, & Bowden, 2009; Davis, 1971; Duru & Poyrazli, 2007; Duru & Poyrazli, 2011; Kagitcibasi, 1978; Kilinc & Granello, 2003; Mathews, 2007; Poyrazli, Arbona, Bullington, & Pisecco, 2001; Tansel & Güngör, 2002; Tatar, 2005) that investigate cross-cultural adaptation of Turkish international students. They focus on topics such as academic strain, class participation, English language competency, and acculturative stress. As mentioned previously, although there is a substantial body of literature on various factors regarding cross-cultural adaptation of international students, social skills have been examined by few researchers. In addition to this, there is no available research which investigates social skills of Turkish people studying or living in Japan within the accessible psychology literature. In other words, research on Turkish students in the Japanese cultural context is very limited. It is crucial to understand the adaptation problems of these students to frame their unique challenges in a new academic setting and society, and to offer guidance for a better adaptation to both environments. Thirdly, cross-cultural studies on Turkey and Japan will be a step outside of Western-dominated, cross-cultural psychology literature (Berry, Poortinga, & Pandey 1997), helping provide a deeper understanding of the two cultures from a cross-cultural psychology perspective. The main purpose of this study is to describe, examine and interpret 21 Turkish international students' use of social skills both in academic and social settings.

Social skills in this study is defined as "behavioural changes that occur while living in/adjusting to Japanese culture or acquired culture-specific behaviours in academic and/or social settings in Japan" based on relevant definitions regarding social skills (Argyle, 1994; Bochner, 2003; Riggio, 1986). The study investigates social skill phenomena by drawing on interviews with Turkish international students in Japan. The interviews were centred around the social skills use of the Turkish students who were in higher education and Turkish people had already obtained an academic degree from a graduate school in Japan. Exploring a crucial aspect of cross-cultural adaptation of Turkish students, the study aims to increase Japanese faculty and students' awareness of the difficulties international students experience in adapting to Japanese academic culture and social life. Through a better understanding of the factors influencing international students' use of social skills, Japanese faculty and peers can support their efforts to understand the local culture and thus become more competent users of social skills. Students

who are planning to come to Japan for studying from other countries may also benefit in terms of being more informed about the social skills commonly used in Japan.

The research questions addressed in the study were as follows:

a) In the context of Japanese universities, what kind of social skills do Turkish international students use in academic settings such as a classroom environment?
b) In the context of Japanese universities, what kind of social skills do Turkish international students use for interpersonal communication with hosts (e.g., academic adviser)?
c) In social life, what kind of social skills do Turkish international students use in Japan?

Method

The Journal Article Reporting Standards (JARS) of American Psychological Association (APA) for Qualitative Research Design (JARS-Qual) (2018) were utilized to report the findings of the present study. To examine the social skills of Turkish students, a qualitative approach is employed as research methodology. In quantitative research, phenomena are explained by drawing from numerical data. This approach includes hypothesis testing, controlling variables, measuring, identifying cause and effect. Its purpose is to generalize results to predict future events through statistical analysis (Petty, Thomson, & Stew, 2012). On the other hand, the term qualitative research is used to explain "a set of approaches that analyse data in the form of natural language (i.e., words) and expressions of experiences (e.g., social interactions and artistic presentations)." (Levitt, Bamberg, Creswell, Frost, Josselson, & Suárez-Orozco, 2018, p. 27). Qualitative research focuses on human experience and provides understanding meaning within a given context. This approach uses texts rather than numbers and it interprets experience and meaning to develop understanding. It also admits the role of the researcher in the construction of knowledge (Petty, Thomson, & Stew, 2012). In an exploratory study, qualitative research is suitable to uncover phenomena and to develop a better understanding regarding humans' perceptions, behaviours, and experiences (Gay, Mills, & Airasian, 2012). Despite generally being gathered from fewer sources than quantitative datasets, each source in a qualitative dataset has rich, detailed and heavily contextualized descriptions. Because of these characteristics, data sets in qualitative research are employed in comprehensive analyses. Open-ended exploration is valued over verification of hypotheses. Furthermore, specific histories or settings in which experiences take place are highlighted rather than predicting findings to occur across all contexts. Besides, methods that require researchers' reflexivity (i.e., self-examination) about their influence upon research process are recursively incorporated into examination (Levitt, Bamberg, Creswell, Frost, Josselson, & Suárez-Orozco, 2018). Since a qualitative method of research allows for exploring in greater depth, semi-structured interviews represent the main method used in data collection studies.

Participants

The researcher interviewed a total of 21 Turkish participants (12 females and nine males) for this study. In qualitative research, there are no hard-and-fast rules to specify enough participants. The number of participants range from one up to 60 or 70, representing multiple contexts. Factors such as time, funding, participant availability, participant interest will influence the sample size included in a research sample. Two general indicators – representativeness and redundancy of information – are used to determine if a sample is of sufficient size. While the first indicator, representativeness, is related to the extent to which selected participants represent the range of potential participants in the contexts, the second

focuses on hearing the same thoughts, perspectives and responses from most or all participants. This stage is commonly known as data saturation (Gay, Mills, & Airasian, 2012). The size of the final sample was essentially determined by data saturation in this study. It was concluded that the data were almost saturated, and no new properties emerged after Participant 21 was interviewed, and therefore, data collection was finalized. The study participants consisted of the Turkish students who were in higher education and Turkish people had already obtained an academic degree from a graduate school in Japan. The education levels of the students are distributed as follows: One bachelor's degree, two master's students, one master's degree, 11 PhD students, four PhD degrees and two postdoctoral researchers. Twenty of the students were either in postgraduate education in Japan or had already obtained an academic degree from a graduate school in Japan at the time of the interview, except one student, who stayed in Japan only for two semesters on an exchange program during undergraduate studies.

Of the total sample, 13 of the students were from a natural sciences or engineering background (five females and eight males), and the rest were from the humanities or social sciences (seven females and one male). Students ranged from 25 to 37 years of age, with a mean age of 29.09 years (*SD* = 3.30). The average length of stay in Japan was 52.14 months (*SD* = 32.89; range = 12-151 months) at the time of the interview completion (See Table 1). The students were asked to report their Japanese language proficiency levels. The Japanese language proficiency levels were distributed as follows: Eight advanced (38%), eight intermediates (38%) and five beginners (24%). Of 21 students, six (29%, five females and one male) were Japanese language majors and reported their Japanese language proficiency level as advanced. The students were also asked to report their English language proficiency levels.

Table 1: Demographic Information of the Turkish Participants in the Study

N	Gender	Age	Major	Education Level	Country of bachelor's Degree	Country of master's Degree	Country of Ph.D. Degree	Country of Postdoctoral Research
1	F	28	Humanities	PhD Student	Turkey	Japan	Japan	N/A
2	F	31	Humanities	PhD Student	Turkey	Japan	Japan	N/A
3	M	26	Engineering	PhD Student	Turkey	Japan	Japan	N/A
4	F	37	Engineering	PhD Degree	Turkey	Turkey	Japan	None
5	M	37	Engineering	Postdoctoral Research	Turkey	Turkey	Japan	Japan
6	F	26	Social Sciences	Master's Student	Turkey	Japan	N/A	N/A
7	F	27	Social Sciences	PhD Student	Turkey	Japan	Japan	N/A
8	F	26	Natural Sciences	PhD Student	France	France	Japan	N/A
9	M	30	Engineering	PhD Degree	Turkey	Japan	Japan	None
10	F	29	Humanities	PhD Student	Turkey	Japan	Japan	N/A
11	F	27	Humanities	PhD Student	Turkey	Japan	Turkey	N/A
12	M	29	Engineering	PhD Student	Turkey	Turkey	Japan	N/A
13	M	26	Humanities	Bachelor's Degree	Turkey	N/A	N/A	N/A
14	F	25	Humanities	Master's Student	Turkey	Japan	N/A	N/A
15	M	30	Engineering	PhD Degree	Turkey	Japan	Japan	None
16	F	30	Engineering	Master's Degree	Turkey	Japan	None	N/A
17	M	27	Natural Sciences	PhD Student	Turkey	Japan	Japan	N/A
18	M	33	Engineering	Postdoctoral Research	Turkey	Turkey	Japan	Singapore
19	F	29	Engineering	PhD Student	Turkey	Japan	Japan	N/A
20	M	28	Natural Sciences	PhD Degree	Turkey	Japan	Japan	None
21	F	30	Natural Sciences	PhD Student	Turkey	Turkey	Japan	N/A

Data Collection Procedures

The institution to which the researcher was affiliated with and where the present research was conducted did not have an Applied Ethics Research Centre and/or Institutional Review Board for research in humanities and social sciences at the time of data collection. Therefore, the researcher could not apply and submit for any reviews for the applicability of the research. However, she followed the Ethical Principles of Psychologists and Code of Conduct provided by the American Psychological Association (2017) to ensure psychological well-being of the participants by avoiding any potential harm during the research.

Data for this research were collected during a 1.5-year period in 2017 and 2018 through interviews with Turkish students. The first author, A.I.S., conducted the interviews for this study. All the interviews were conducted in Turkish to allow participants to express their opinions more clearly and comfortably. The semi-structured interview was selected as the primary data collection tool for the present research which assisted the interviewer to maintain the course of interviews, avoid drifting of the interviews to a completely unrelated topic and encourage the participants to talk by bringing certain concepts or topics into the interviews. Interviews were guided by social skills theme and use of social skills in academic and non-academic contexts and interpersonal relationships. Therefore, a set of questions was designed by the researchers based on relevant literature with the aim to explore Turkish participants' use of social skills and gather more focused information on the phenomenon. Questions asked in the interviews can be exemplified as follows: "When you come into contact with Japanese lab mates/classmates or adviser, do you adjust your behaviours?", "How do you approach your Japanese lab mates/classmates and communicate with them?", "How different are your behaviours, approach or participation in classes in Japan from your behaviours in Turkey?", "How different your behaviours in interpersonal relationships with Japanese people? For example, expressing your opinions indirectly." Targeted questions provided guidance to acquire specific information; however, there remained sufficient flexibility in the interviews to easily digress, because interviewees were encouraged to speak about topics beyond the interview questions, if preferred. The flexibility helped to explore these issues in depth, making the interviews semi-structured (Scapens, 2004). The interviewer also asked additional questions depending on the answers of the respondents to obtain deeper and wider information. To summarize, one-to-one, semi-structured interviews were conducted in Turkish to explore Turkish international students' use of social skills in Japan. The interviews were designed to assess social skills used in both academic and social settings. As academic adjustment is also associated with cross-cultural adjustment and academic adjustment has a positive influence on students' cross-cultural adjustment (Poyrazli, & Kavanaugh, 2006), learning and using social skills specific to Japanese academic settings such as classroom environment were also explored. Before interviewing, the researcher scheduled the time and date according to the participants' availability. Those who lived in a different city or outside of Japan agreed to be interviewed online. Of 21 interviews, 17 (81%) were conducted on Skype and four (19%) face-to-face. Participants were interviewed individually after they filled in the demographic information sheets provided either as a printed or electronic document. Participation was anonymous and voluntary. Additionally, before starting the interviews, participants were asked for their permission to record them with an audio recorder.

Data Analysis Procedures

Data analysis was done concurrently with data collection; therefore, an iterative process was applied. After all the 21 interviews were completed, each audio-recorded Turkish interview transcript was compiled to ensure that the data was full and accurate. The interview audio files that were transcribed verbatim to Turkish. Additionally, all transcripts were read several times

to eliminate typographical errors. After all the 21 interview transcripts had been read several times, each transcript was examined manually. In analysing data, a typical procedure for qualitative research was employed (Gay, Mills, & Airasian, 2012); each transcript was then analysed individually, with the aim to identify social skills, which are defined as "behavioural and emotional changes that occur while living in/adjusting to Japanese culture or acquired culture-specific behaviours in academic and/or social settings in Japan" in this study. The transcriptions of the interviews were read several times, seeking for those social skills mentioned by the students. Transcripts were first coded to indicate social skills, and possible labels were assigned to identified social skills. As the data analysis progressed in terms of relevance, these labels were allocated to broader, more comprehensive themes, concepts, and categories to reflect the complexities of social skill use. By refining these categories, a hierarchical organization of categories was created to demonstrate the framework of social skills.

Various strategies are essential for ensuring trustworthiness in qualitative research (Morse, 2015); these strategies were summarized by Shenton (2004). Credibility, a key criterion, refers to internal validity in quantitative research, and it is used to ensure that the study conducted measures or tests to ensure that the study conducted measures or tests its own aim (Shenton, 2004). To guarantee credibility, peer debriefing and member checks (Anney, 2015) were employed as a strategy in this study. Two academic fellows independently reviewed the accuracy of methodology and process. The fellows were asked to review the analysis process several times. They reviewed the labels that were assigned to the transcript excerpts in terms of relevance. Upon receiving the feedback, the researchers moved to allocating labels to broader, more comprehensive themes, concepts, and categories. The fellows then reviewed the relevance of labels to the broader categories and category names. Several labels with their assigned excepts were allocated to different categories and some category names were improved based on the feedback to reflect the complexities of social skills use experiences of the participants. Additionally, the applicability of social skills was reviewed by three native Japanese academic fellows who understand Japanese academic/educational environment; therefore, effectiveness and viability have been confirmed.

Findings

In the interviews, the interviewer explained what she meant with "behavioural changes" and "behaviours specifics to Japanese academic settings and Japanese social settings" and provided examples of social skills for further clarification without using the term as participants might not be familiar with it. Of 21 participants, two participants (Participant 6 and Participant 18) reported that they did not acquire and use any social skills, neither in academic settings nor social life. Five participants (Participant 3, Participant 4, Participant 15, Participant 16, and Participant 21) stated that they partially acquired and use specific social skills (e.g., bowing) in certain contexts (e.g., formal occasions). As mentioned previously, this study aimed to explore if Turkish students used any kinds of skills specific to Japanese academic settings and social settings and how they used those skills. The study also aimed to find out if Turkish people avoided or maintained any social skills specific to their native culture. In the interviews, two participants (Participant 19 and Participant 20) expressed that their personality traits fit the Japanese culture; therefore, they did not need to develop new ways or acquire any social skills. However, one of two participants (Participant 20) reported demonstrating certain behavioural regulations such as being more punctual. To sum up, most participants (19 participants; 90%) reported experiencing certain behavioural changes; this paper aims to report the findings regarding the categories and sub-categories of cross-cultural social skills identified in the analysis.

The purpose of the study was to explore use of social skills in the context of Japanese universities and social life. The analysis of participants' responses suggested two major categories in terms of contextual use of cross-cultural social skills: social skills in academic settings and social skills in social settings. Moreover, the analysis resulted in different hierarchical levels of categories related to the academic and social cultures in Japan. The findings indicated that Turkish international students tended to use different types of social skills in different settings. Two major categories were labelled "social skills specific to academic culture in Japan" and "culture-specific social skills." The labels were generated by the researchers in this study and improved as the analysis progressed. The hierarchical organization of categories created in the analysis process is provided below:

1. Social Skills Specific to Academic Culture in Japan
    1.1. Manners in Class/Laboratory Context
    1.2. Hierarchical Manners
2. Culture-Specific Social Skills
    2.1. Private Space
    2.2. Indirect Approaching
    2.3. Social Interaction
    2.4. Social Involvement
    2.5. Structured Socialization
    2.6. Thoughtful Expression
    2.7. Brief Contact
    2.8. Self-Regulation in Social Life
        2.8.1. Behavioural Regulations in Social Life
        2.8.2. Emotional Regulations in Social Life

The first major category is labelled "social skills specific to academic culture in Japan" and includes skills acquired in the context of Japanese universities. It refers to skills mainly shown in academic and educational settings. It consists of two sub-categories, namely "manners in class/laboratory context" and "hierarchical manners."

Manners in class/laboratory contexts refer to skills for adjusting to the host's cultural teaching and learning practices and fitting the educational environment. The skills in this category are demonstrated in classroom and laboratory environments during lectures or seminars. The skills acquired by Turkish students are mainly related to classroom participation. Participants showing these skills realized that to better fit the Japanese educational environment, their participation and answers should be less assertive and more indirect. The social skills developed by the participants are provided below:

1. *Pausing before answering a question asked by the instructor to not stand out, and waiting for the teacher to pick someone to answer*
2. *Being less expressive of their own ideas or opinions in classrooms*
3. *Avoiding asking questions during class to not disrupt the classroom environment*
4. *Using indirect expressions while expressing opinions to laboratory/seminar mates, instructors, and supervisor*
5. *Before asking a question or commenting on a topic, trying to explain why they think that way and ask such a question (a skill called "maeoki," which means "preface" or "introduction" in Japanese)*
6. *While asking a question, explaining they have understood and then directing a question on unclear points (i.e., making longer explanations/sentences)*

7. *Explaining every step when requesting something about research from a laboratory mate for clarification*
8. *Restraining oneself in class (e.g. not making jokes during class)*
9. *Saying "thank you for your hard work" (an expression called "otsukaresama desu" in Japanese) to show appreciation to class/laboratory mates at the end of a course or seminar, before leaving the classroom/laboratory*

An example of a student's statement for behavioural skills in a classroom/laboratory context is provided below:

> *I've been expressing so much indirectly. Like the Japanese, so, how can I say, I've developed a strategy, I've observed the relationship between Japanese students and instructors. When the instructor asks questions, Japanese students don't answer immediately or don't answer very confidently, even though they are sure of themselves. They first response with "Oh, is that so?" and say "umm" or something like that. They keep thinking. I started doing it. I noticed something when I did it. Instructors began to become kinder. When the instructor directs you a question and when you act like that, the instructor starts explaining. She/he also gives an example. You then begin to understand. For example, if I had answered directly, I might have misunderstood. If the answering is too direct, the instructor perceives your act as harsh. I noticed that. For example, when you keep quiet, the instructor begins explaining. If you're very active in classes, you stand out too much. I noticed that. Staying quiet works better here than does explaining your opinions. I'm doing it. (Participant 1)*

Hierarchical manners refer to the skills that the participants use when they interact with their superiors, usually with their academic supervisors. Almost half of the participants reported that they adjusted their manners, behaviours, and the language they use when they speak to their superiors. The skills of hierarchical manners that students demonstrated are provided below:

1. *Adjusting oneself while speaking with the supervisor (e.g., changing your attitude, acting like the Japanese)*
2. *Speaking formal Japanese to the supervisor*
3. *Avoiding praising the supervisor*
4. *Apologizing to superiors to avoid conflicts even for small mistakes*
5. *Avoiding talking about one's private life to the supervisor*
6. *Avoiding asking direct questions to the supervisor*
7. *Avoiding disagreeing with the supervisor*

Students' statements are given below to exemplify hierarchical manners skills:

> *Of course, I act carefully when I speak to my adviser. My adviser loves people who speak; but because of my personality, especially as the person's hierarchical level increases, I pay attention to the words and topics I speak due to norms regarding respect and politeness. There may be changes in the linguistic level. Sometimes I try to use keigo (honorific speech in Japanese) or I try to use sonkeigo (respectful Japanese language). […] I think I have Japanese-like reactions. I think I pull myself back. As I just said, as the person's hierarchical level increases, how to say, I check my words before I speak. Of course, I'm very open to (discussing) the details about my own research, but sometimes I don't know how to react to when the adviser shares his experiences. I'm obviously playing a Japanese in those moments. (Participant 10)*

> *There is one thing that my adviser has been angry with me lately. The adviser is saying something, and I am opposing it. He is saying something else, and I'm starting with "but that is not…" I always start with "but" and "no". The adviser told me that "What is your problem? When I say something a normal student replies with 'Yes, I will do it.' and the conversation ends there. Why do you always start with 'no' in the conversation?" And after that I always started to start my sentences with "yes". I always tried to give positive answers. (Participant 12)*

The second category is "culture-specific social skills," which are cross-cultural skills specifically acquired and used during the period of cross-cultural transition to Japan. These skills were mainly related to interpersonal encounters, including one-to-one relations and social interactions in public. This category comprises eight sub-categories, namely "private space," "indirect approaching," "social interaction," "social involvement," "structured socialization," "thoughtful expression," "brief contact," and "self-regulations in social life"; the last has two sub-subcategories, which are "behavioural regulations in social life" and "emotional regulations in social life."

The skills concerning *private space* include skills about keeping the distance from host people in interpersonal relationships and avoiding speaking about one's private life with them. Turkish students mentioned that Japanese people tend to keep other people at a distance. Turkish students perceived Japanese people to be more reserved than Turkish people; therefore, some participants were more cautious of their private life to avoid creating discomfort. The relevant skills for keeping private space are provided below:

1. *Avoiding talking about one's private life in front of Japanese people*
2. *Being more discreet with asking private questions (e.g. salary) to Japanese people*
3. *Giving up on inviting Japanese people to one's home*
4. *Being more reserved in interpersonal relations with Japanese people*

To exemplify the private space skills, a student's statement is reported below:

> *…Other than that, I introduce myself as Japanese do. I learned to not ask too direct questions. For example, there are sensitive topics in Turkey too, like you don't ask a person how much money she/he earns. I have learned to pay attention to things that I need to avoid asking here too. I learned to not invite people to my house. It's pitiful, but I'm used to what I'm talking about. I have realized that's how I treat my non-Japanese friends, too. (Participant 17)*

Indirect approaching refers to the skills which promote following an indirect and agreeable communication style when approaching Japanese people or in social contexts in which an assertive style of communication is not encouraged. The skills regarding indirect approaching that participants developed are provided below:

1. *Being less straightforward towards Japanese people while making friends*
2. *Being more indirect in interpersonal relationships*
3. *Confirming by saying "yes" while listening to others although not agreeing with what is being told*

An example of a student's statement is provided below to demonstrate indirect approaching skills:

> *What I realize in general is that the straight approach definitely frightens the Japanese. So, I learned to hold my tongue and be calmer and more like them. And sometimes, if I say too much, I feel so hypocritical that I don't like it. If I don't love someone, I say I don't. If I don't want to do something, I say I don't want to. If I say what I want to do, I really want to do it. But when I was talking to the Japanese, I realized that I said "alright" to things I didn't want to do but I should do, because if they run away, it gets very difficult to communicate again. I thought, in a kind of funny way, if that's the case at the academy, or what other people are doing in companies. A difficult situation. So, in general, I use the method of holding my tongue to strengthen communication. (Participant 17)*

The category *social interaction* includes skills regarding how to interact with Japanese people in interpersonal relationships. The relevant social skills are listed below:

1. *Finding common ground (e.g. hobbies) and trying to make friends based on common interests*
2. *Bringing souvenirs from places visited (called "omiyage" in Japanese)*
3. *Developing ways such as the Japanese style self-introduction to approach people*

A student's statement exemplifying social interaction skills is given below:

> *I didn't develop new ways. But I seem to have adapted to their ways. Omiyage (Japanese souvenir) – when you go somewhere, you buy something and give it as a gift. That way, I think, I make them love me. If you ask me if I've developed anything else, no. What I'm doing is observing what they're doing, imitating them a bit. I've learned a complete imitation of Japanese. (Participant 3)*

Social involvement refers to the skills concerning avoiding getting involved in other people's lives, even in critical situations, particularly in public. Those participants who acquired the skill stated that they avoided reacting to situations in which they saw someone needing help, or situations in which interventions might be necessary for the people involved, such as interpersonal conflicts in public. The relevant social skills concerning social involvement are listed below:

1. *Being less involved in others' lives*
2. *Seeing someone in trouble and passing by without reacting*
3. *Not offering help to others unless asked for/requested to not bother people*

An example of a student's statement to show social involvement skills is provided below:

> *In Turkey, it is to poke one's nose into things, right? A lot of people comment on things that aren't about them. If necessary, they get involved. What is that? I believe that in Japan, people adopt the approach of "minding your own business" and "minding my own business" very well. For example, if it is my own business, if it is my private issue, it means it is "minding your own business" to outsiders. They too know that. They mind their own business and not get involved. For example, I witnessed a crazy fight between some guys at the train station. Nobody separated them. They were fighting like crazy, punching and kicking. But people turned their heads away to avoid standing out. The duty of separating them of course belongs to the police and the security guard. You know, "minding your own business" and "minding my own business" rules are very*

> *well defined. Everybody's following it. As something I had thought of, the concept of "minding your own business" and "minding my own business" [exists in order] to not stand out in society. I don't poke into the issues of others anyway, but here, I like it because everyone minds their own business with extra attention. Nobody interferes with anyone. Everyone keeps oneself to oneself. But the extremity of it is a little too much. If they are fighting, we should say "Oh, friends, what are you doing?" and if it is possible, they should better be separated in my opinion. But for example, I don't know, if I was in Turkey, if I'd try to separate them or not get involved. Because I am in Japan. (Participant 16)*

The skills concerning *structured socialization* include how to act when making plans with Japanese people. The participants who used this skill reported to be less spontaneous in their interpersonal relationships. They reported that they began to set appointments if they wanted to meet with Japanese people for an event and conveyed more details regarding the event. The social skills used by the participants are provided below:

1. *Being less spontaneous in interpersonal relations, particularly for occasional meetups*
2. *Setting appointments ahead (2-3 days to 1 week)*
3. *Conveying more information and providing more details regarding the event when making plans with Japanese friends*

To exemplify structures interaction skills, a student's statement is shown below:

> *I noticed that while [in Turkey] you easily contact a friend; in Japan, if I meet with a friend, I make an appointment. I had the habit of notifying at least a week in advance if I wanted to do something without an appointment or if I wanted to invite him/her. I noticed that if I was invited somewhere, I was invited a week in advance. (Participant 11)*

The category *thoughtful expression* indicates the communication skills displayed when speaking to Japanese people in social contexts. Participants who developed these communication skills addressed the importance of "reading the air" (analysing the circumstances) to understand how to behave and talk in social contexts and avoid offense and misunderstanding. Moreover, the participants stated that they usually gave more detailed and longer explanations to provide a clear understanding to Japanese people. The relevant social skills about thoughtful expression are provided below:

1. *"Reading the air/atmosphere" (a commonly used skill called "funiki wo yomu" in Japanese)*
2. *Making detailed explanations when explaining something (a skill called "maeoki" which literally means "preface" or "introduction" in Japanese)*
3. *Repeating what one explains for clarification*
4. *Explaining one's true feelings, desires and public opinion depending on the context (a commonly used skill called "honne" and "tatemae" which literally mean "true sound" and "built in front" in Japanese, respectively)*
5. *Making jokes on cultural differences to create a warm atmosphere*

A student's statement is provided below to exemplify thoughtful expression skills:

> *KY ("Kuki wo Yomu" meaning "reading the air" in Japanese). You need to pay*

> *attention to this. It also develops over time. The second is honne-tatemae ("honne" meaning "true sound" and "tatemae" meaning "built in front" in Japanese). You need to learn the honne-tatemae practiced by people all around in the first place. You need to use it naturally. I don't know if it's a skill, but there is such a technique or something like that. (Participant 5)*

Brief contact refers to the skills shown in the case of brief contact in social contexts, including greeting. Participants who adopted this skill reported that they avoided using Turkish social skills such as hugging and shaking hands. They stated that they were mimicking Japanese style greeting such as bowing to familiar people, while avoiding social interaction in social contexts with unfamiliar people. The relevant social skills on brief contact are provided below:

1. *Avoiding Turkish social skills that include physical contact such as hugging and shaking hands*
2. *Bowing*
3. *Avoiding social interaction such as greeting in certain social contexts (for example in elevators)*
4. *Avoiding eye contact*
5. *Using Japanese-style greeting*
6. *Japanese-style self-introduction*

An example of a student's statement for brief contact skills is demonstrated below:

> *Normally there are some skills that I use in Turkey, but not here (Japan). I am a person who likes to hug and touch; but here there are none. It's really none and you really miss your friends. I'm so lucky I came with my wife, and she also came with me, but one really misses friends. (When I'm collaborating with the Japanese) You've done a great job; you've done something nice. I feel like hugging. Nothing happens. I feel like shaking hands, but I cannot. (Participant 13)*

The last category *self-regulation in social life* includes cross-cultural skills regarding behavioural and emotional changes. It has two subcategories which are named "behavioural regulations in social life" and "emotional regulations in social life."

Behavioural regulations in social life refer to skills that participants adopted by mimicking Japanese manners, after observing Japanese people in social contexts. Additionally, some of the participants stated that they acquired some of these social skills (e.g., nodding with head for confirmation while listening to others) based on their experiences in interactions with Japanese people and/or based on the expectations of Japanese people from interpersonal relationships with them. The relevant social skills regarding behavioural regulations in social life are provided below:

1. *Smiling more often than usual*
2. *Confirming with saying "yes" (literally translated as "hai" in Japanese) while listening to someone*
3. *Nodding with head for confirmation that they follow when listening to others*
4. *Using Japanese gestures (e.g. nodding)*
5. *Apologizing more often*
6. *Thanking more often*
7. *Sending a message in case of being late for an appointment*

8. *Following Japanese social rules, codes, etiquettes, and manners in public space (such as public transportation)*
9. *Trying to follow Japanese etiquettes in formal occasions such as business meetings*
10. *Adjusting one's behaviours according to the expectations of the Japanese*
11. *Mimicking Japanese manners when interacting with the Japanese*
12. *Being more punctual*
13. *Being more planned*
14. *Being more respectful*
15. *Being more polite*
16. *Being more formal*
17. *Acting like a Japanese*
18. *Being more considerate of others (e.g. not sending messages at an unearthly hour)*
19. *Not making excuses for mistakes*

To exemplify behavioural regulations in social life skills, students' statements are provided below:

> *I've learned to apologize here. I so often say "I'm sorry." or "Thank you." The importance of such things. I always try to pay attention to these, that is, to thank a lot, to apologize very often, to show a lot of respect. (Participant 7)*

> *I don't shake hands very often here, so I'd say I acquired little bit of Japanese mimics like nodding and bowing. I'm the only doctorate student of my adviser. Other students are in master's courses. Naturally, they usually ask me for help. Especially when we have seminars, the adviser makes a request to me first and tells me to provide feedback. I can't hold myself there. I don't have such habits; I didn't change them. I tell what I think. I didn't acquire any skills such as restraining, changing, softening my thoughts. But when I meet or speak in a social context, I have acquired skills like nodding or bowing. (Participant 21)*

Emotional regulations in social life refer to skills on restraining emotional expressions and reactions in social contexts and trying to stay expressionless and reactionless as much as possible, particularly to unexpected or exciting situations and experiences. Participants who developed this skill reported that they began to not express their emotions both behaviourally and verbally as much as they used to do. Additionally, they reported feeling emotionally more regulated than they were in Turkey. The skills used by the participants are provided below:

1. *Being emotionally less expressive and reactive; restraining emotional responses*
2. *Being more rational than emotional*
3. *Controlling facial expressions; staying expressionless (an expression called "muhyojo" in Japanese)*
4. *Trying to understand the other party's feelings and thoughts because of Japanese people's tendency to not express their feelings and thoughts*

A student's statement exemplifying emotional regulations in social life skills is shown below:

> *It's really hard to control emotions, and your facial expressions, you know. Joy, sadness, disappointment – all the same. But when I witnessed an unexpected behaviour from a friend) I reacted as if I always acted the same way and I was like "Oh, is that so?" I felt it in me there. Well, how to say, emotions are things that you can't control really.*

> *You can't control your emotions, but you control how you manifest them, that's the hardest part. You know, I've began to control them too. I don't know if it has made me happy or unhappy, but it makes me acquire such skills. This came to mind. In other words, the only thing that doesn't change is change itself. So, it's normal, what I do sounds normal to me. (Participant 14)*

Patterns in Cross-Cultural Social Skills Use Based on the Findings

The findings suggest several patterns in Turkish students' social skills use, and these patterns are consistent with a previous study of Tanaka and Okunishi (2016). They conducted a study on social skills use by international students in Japan. In the study by Tanaka and Okunishi, students evaluated a list of social skills and how commonly these skills were used in their home country. After the analysis, the skills were classified into four categories which are maintained skills (skills used in Japan and acknowledged as being used in their home country), acquired skills (skills learned in Japan, but not used in their home country), avoided skills (skills used in their home country, but not recognized in Japan) and neglected skills (skills rarely used both in Japan and in their home country). Therefore, the patterns observed in the social skills use of Turkish students can be classified based on their study except one category, neglected skills, that has not been investigated in this study. Additionally, the findings suggest a pattern for successful cross-cultural adaptation without modifying any social skills.

Turkish students are found to 1) acquire social skills specific to host culture and use these skills depending on the context, 2) maintain social skills that were used in their home country, 3) avoid using certain social skills of their home culture in the host country.

The social skills acquired by Turkish students are specific to academic culture in Japan and shown in the context of Japanese universities, particularly within a classroom/laboratory environment. In addition, regarding socialization, interpersonal communication and behavioural regulations, social skills specific to Japanese culture were acquired and demonstrated by Turkish students, depending on the social context. In terms of the teaching and learning strategies emphasized, there are similarities between Turkish and Asian cultures (Bichelmeyer, & Cagiltay, 2000) where education is teacher-centred, and students are expected to talk in class when invited by the teacher (Gu, 2009). Moreover, Turgut (1997) suggested that oral participation is not usually encouraged in Turkish educational culture. However, considering that the majority of participants moved to Japan for graduate education in which students are expected to take the initiative to ask questions that will promote their understanding, they might not comply with educational norms of native culture and act outside traditional student roles. Furthermore, although the sample size in this study is small ($N = 21$) because of the nature of the qualitative research, considering the number of Turkish students in tertiary-level education in Japan, which was 152 (The Embassy of The Republic of Turkey in Tokyo, 2017) at the time of data collection, the sample size comprised 13.82% of all Turkish international students. Therefore, it can be suggested that the findings of this study may be relevant to Turkish students who currently study in Japan or prospective Turkish students who consider studying in Japan.

Participants (Participant 19 and Participant 20) who reported maintaining social skills that were displayed in their home country stated that both their personality traits and social skills fitted Japanese culture. They indicated that they did not need to adjust – acquire or avoid – their behaviours to fit Japanese culture or interpersonal relationships with hosts. Responses of these two participants suggested that they maintained what they were usually doing when they were in Turkey. Participants' statements are provided below to exemplify maintained social skills:

> *There is no such thing that I did in Turkey but not in Japan, or I didn't do in Turkey but started to do in Japan. No such thing. I think that's why I could adapt myself here easily. Because I'm not a very lively person, I'm more like calm. I think that's why I'm easily accepted among my Japanese friends. I had a few international friends coming and leaving. When I observed my relations with them, I realized that they did not have very good relations with the Japanese. I think it's because of the social skills you're talking about. It changes according to the culture and the living environment. The international people who come here can easily stand out. I think I'm a little more nonchalant, because I have a calmer personality. I was like that in Turkey. I'm the same here. (Participant 19)*

> *What I did in Japan was the same as what I usually do in Turkey. Well, 99% of the skills I use in Turkey and the skills I used in Japan are the same really. I still stand a queue in Turkey, for example. I pay a little more attention to personal space. Moreover, for example, I certainly don't talk on the phone while on the train. I'm strict about it. I didn't talk on the phone not even once, or I'm careful to not talk loudly. Other than that, I offer seats (to other passengers). What else do I do in everyday life? I try to normally socialize with Japanese as much as possible. I'm speaking, I'm chatting, I'm explaining stuff. I'm talking about Turkey, for example. And it was a very popular topic when I was there (Japan). […] I wouldn't say 100% assimilation, but I try to follow Japanese rules in Japan as much as possible. The good thing is that these rules don't contradict my personality anyway. So, I don't like talking loudly on the train. All I've ever done is something so general, but that's all I do. (Participant 20)*

The findings revealed that Turkish participants avoid using certain social skills of their home culture both in educational settings and other social settings, when interacting with Japanese people. These findings implied that participants preferred to comply with the social rules in Japan. It suggested that the skills that participants avoid using are not similar or overlap between Turkish culture and Japanese culture. For example, participants stated that they expected more physical contact among Japanese people. Participants' statements are provided below to exemplify avoided social skills:

> *I think I lost all my social skills here. I told you, I'm supposed to hug (a Turkish friend), I'm bowing instead. I learned bowing. Japan did not add much to me in that sense, because there's nothing (no social skills) here. Like I said, I lost. (Participant 3)*

> *Bowing. In Turkey, you bow your head, but not like in Japan. I've learned to do it. I realized that I felt more comfortable doing it. I shake hands in my normal social life, but in fact, I especially liked to not shake hands with the Japanese; because they are distant. It makes such an impression on me as if I had to keep a distance. I've internalized this habit so much that when I return to Turkey, I bow. Handshaking or hugging sometimes sounds hard; but when new Turkish people I meet here leave, especially women—I have not met any men— we definitely hug each other before leaving. That doesn't change. But I don't do it with the Japanese. If I'm so happy or glad about something, I've realized that I can't hold myself and not hug, but they can't hug. It feels weird. Well, I've restrained it anyways. (Participant 17)*

Lastly, a pattern for successful adaptation to host culture without modification of social skills use is observed in two of the participants. One participant reported that she did not *modify* herself and acquire or became devoid of any social skills, as in her statement, *"I think, none*

[no skills used for interpersonal relationships]. I don't think I modified (myself) that much. None." (Participant 6)

However, she stated that she brought souvenirs to her supervisor when she visited a place. She reported not restraining herself when interacting with her superiors (i.e., hierarchical manners). She reported that:

> *As I said, I have two seminar classes. One of them is international. Everybody's like very relaxed. There is no problem with that class. Nope, I don't have any problems in either of the classes. And I don't speak Japanese either. The Japanese language has honorific speech, but since the English language does not have it, I don't have any problems. No, I don't restrain myself. I restrain myself in front of the instructors (here in Japan) as much as I restrain myself in front of the instructors in Turkey. (Participant 6)*

In addition, however, she reported not having an assertive communication style, compared to her Turkish classmates at university in Turkey. She added that she did not like criticizing and she avoided harsh criticism in class discussions when she was in Turkey. Therefore, it is assumed that, although the participant reported not acquiring or avoiding social skills in Japan, the social skills that she used in Turkey were particularly fit to the academic culture in Japan, similarly to two of the participants previously mentioned. She stated that:

> *I didn't really like to criticize before, either. But at my home university in Turkey, people were very, very critical. Still, I wasn't going too harsh on anyone. Here, for example, the other day I disagreed with a friend about a topic. I disagreed with my friend's argument. So, I presented my own argument. Every time the instructor briefly summarizes each person's argument, and then she suggests a thesis about the argument and says that "Your friend states something like that." After I presented my argument, the instructor said, "By presenting such an argument, that is completely opposite to our friend's argument, Participant 6 disagreed with him. She presented an argument against him and opposed to his argument." I said, "Let's not say it was completely against him, but something like that." Then the instructor said "Friends, you do right by refuting the arguments of others. Do not hesitate. You can directly say to that person that his/her argument is wrong. We are doing science here. Do it as you wish. The friendship stays outside. Here you can criticize everyone directly as a professional." She is Japanese, too, the instructor. She tells us to not use indirect language. I'm not a very critical person in general. I usually filter my talking. (Participant 6)*

Another participant who reported not modifying himself stated that he had an assertive communication style. Similar to the participant previously mentioned, he reported not using any hierarchical manners when speaking to his superiors. He mentioned that:

> *I was warned several times by my Japanese laboratory mates. I directly say whatever comes to mind. Academia should be designed to facilitate discussion environment. My adviser is very well-known not only in Japan, but also in the world. He has been granted the Emperor's medal or something like that recently. That man is highly respected. Just imagine the amount of respect shown to the title of a normal professor, and image that amount shown to that man, whether you multiply it by a hundred or whatever. I was having direct discussions with that man. When he said something, I was disagreeing with him by saying it wouldn't be like that. The mates in the laboratory warned me that*

> *the adviser would be angry. But he wasn't that kind of person, as I said. I was very lucky. My attitudes seemed strange to them [Japanese laboratory mates], because they thought I was talking confidently, which was certainly not the case. Because according to them, even saying "I wonder if that could be so." is considered a burst of self-confidence. (Participant 18)*

Discussion

The main purpose of this study was to describe, examine and interpret Turkish international students' use of social skills in both academic and social settings. Based on previous studies of international students' social skills use in Japan, various patterns emerged according to how social skills are acquired, avoided, or maintained by Turkish international students. In addition to these patterns, the findings suggested Turkish students used different types of cross-cultural social skills in different settings, which are labelled social skills specific to academic culture and social culture in Japan.

Manners in class/laboratory contexts, which refer to skills for adjusting to the host's cultural teaching and learning practices and fitting the educational environment, are one of the major categories of social skills specific to academic culture. The skills regarding classroom communication such as "being less expressive of ideas or opinions in classroom", "avoiding asking questions during class to not disrupt the classroom environment" and "pausing before answering a question asked by the instructor in order to not stand out, and waiting for the teacher to pick someone to answer" are consistent with expectations in teaching and learning cultures of large power distance societies. As Gu (2009) outlined, in large power societies education is teacher-centred and students are supposed to speak up in class only when they are invited by the teacher. Although levels of power distance of both countries are similar and located at around the middle of the scale (Hofstede Insights, 2019), the findings suggested that the study participants' use of skills – either acquired or avoided – were inconsistent from expectations considering similarities in power distance levels of two countries. Turkey has been classified as a collectivistic country as Japan (Hofstede, 1980), Turkish people display distinct characteristics in terms of individualistic and collectivistic values (Göregenli, 1995; 1997). Turkish culture, in which both individualistic and collectivist ideals exist side by side (Göregenli, 1995; 1997), is a mixture of Western and Eastern cultural features, and both traditional and modern traits can be seen as a blend of Turkish society (Sunar & Fişek Okman, 2004). Considering the mixed characteristics of Turkish culture, similar behavioural patterns might be existent in participants of this study. Furthermore, a study on classroom participation by Turkish graduate students in the U.S. (Tatar, 2005) found out that Turkish students exhibited various participations patterns. Turkish students were not all silent which was contrary to the studies predominantly documented the silence of Asian students.

In terms of social skills specific to academic culture, which is another of the major categories, the findings revealed that skills regarding *hierarchical manners* are demonstrated by Turkish students particularly towards their academic supervisors. This finding is consistent with the findings of a previous study (Tanaka & Okunishi, 2016) on social skills use of international students in Japan. That study indicated that students who had stayed in Japan for more than three years had significantly higher scores of showing modesty and showing an appropriate attitude toward superiors, than those students who had been staying in Japan for less than a year. Moreover, the students whose duration of stay in Japan was more than three years displayed better attitudes towards surrounding people and used the Japanese way of calling others more than those students whose duration of stay in Japan was two to three years. The

finding is constant with the finding. Considering that average length of stay of participants in this study was around four and a half years, their appropriate use of hierarchical manners towards superiors is consistent with the results of Tanaka and Okunishi (2016). In addition, participants indicated that they gradually adjusted to cultural differences, Japanese system and following Japanese procedures with the passage of time. Most participants frequently stated they have normalized and internalized Japanese culture during adjustment process, emphasizing the significance of experience of living in the culture. In a study on interpersonal behavioural difficulties of Japanese people living in Japan (Nakano & Tanaka, 2019), Japanese participants stated that, although Turkish people are easily influenced by the opinions of their superiors, the distance between instructors and students is closer, compared to Japan. Considering that levels of power distance of both countries are similar and located at around the middle of the scale (Hofstede Insights, 2019), Turkish participants in Japan and Japanese participants in Turkey might have similar experiences in terms of hierarchical relations.

In addition to these, the culture-specific social skills that emerged in this study are consistent with the previous studies on social skills use of international students in Japan. Tanaka and Fujihara (1992) investigated behavioural difficulties among international students in Japan to determine essential social skills for cross-cultural adjustment. The participants' responses revealed that they mostly had trouble with indirect expressions, social manners, suppressed expression, relationship with the opposite gender, attitude towards foreigners, and group-oriented behaviours. Students from Europe and students from Latin America reported having difficulty in understanding suppressed expression, while students from Southeast Asia stated that they had difficulty in understanding attitudes towards foreigners. Furthermore, students from Southeast Asia tend to perform better in indirect expressions, and the students who had stayed in Japan for a substantial amount of time showed in group-oriented behaviours. The findings of this study indicated the use of cross-cultural social skills, including *indirect approaching, thoughtful expression, self-regulation in social life* by Turkish students, although Turkey is considered a collectivistic country like Japan (Hofstede, 1980). However, the results of the studies by Göregenli (1995, 1997) suggest that Turkish culture does not fall into either side of the individualism-collectivism dichotomy with regards to all the dimensions of social behaviour described by the relevant literature and by target groups. In addition to these, it was suggested that Turkish culture is a combination of Western and Eastern cultural elements, and the synthesis of both collectivistic and individualist cultures (Sunar & Fişek Okman, 2004). A combination of spiritual, altruistic, other-centred, community-oriented, and interdependent values – values that tend to be associated with Eastern cultures – and individualistic, rational, logical, pragmatic, and materialistic values – values that are often associated with Western cultures – is observed in Turkish people (Kilinc & Granello, 2003). Therefore, it can be stated that Turkish students who tend to exhibit both individualistic and collectivistic features more likely acquired social skills specific to Japanese culture during their cross-cultural transition.

Furthermore, Turkish students reported avoiding specific social skills specific to Turkish culture and acquired the relevant social skills instead of the avoided ones, particularly in physical contact. Turkey is classified as a high contact culture "in which, people tend to touch each other more often, maintain closer interpersonal distance, make more eye contact, and speak louder" (Oxford Reference, 2019). Compared to Turkish culture, which is high both in physical contact and intimacy in interpersonal relationships, Japanese culture is assumed to be a low-contact culture (Sussman & Rosenfeld, 1982). Consequently, cultural differences in the degree of contact resulted in adopting *brief contact* skills and avoiding physical interaction, particularly in greeting Japanese people. A study on interpersonal behavioural difficulties of Japanese people living in Japan (Nakano & Tanaka, 2019) suggest that Japanese people living

in Turkey experienced difficulty handling frequent physical contact in Turkish culture, particularly in greetings such as hugging and kissing. Japanese people reported feeling uncomfortable with body touches. The findings of the present study, on the other hand, indicated that Turkish participants tended to avoid physical contact in Japan, as physical contact is not common to Japanese culture.

As previously mentioned, the findings of a study on interpersonal behavioural difficulties of Japanese people living in Turkey (Nakano & Tanaka, 2019) indicated dissimilarities between Japanese cultural norms and Turkish cultural norms, which resulted in experiencing interpersonal difficulties. The study presented that Japanese people living in Turkey experienced difficulties with "frank self-expression," "behaviours such as manners or common sense," and "relationships with people." Regarding frank self-expression, Japanese people reported experiencing a lot of body touches in Turkey. Moreover, they stated that they were frequently invited by Turkish people to their homes. The findings of the present study are consistent with the findings of the study by Nakano and Tanaka (2019). For example, Japanese participants in Turkey reported having difficulty in assertive style of communication, in which Turkish people directly express their opinions by pointing out mistakes and dissatisfaction. The participants reported feeling uncomfortable with open and direct self-expressions of the hosts. They also stated that the proximity of interpersonal distance is low in Turkey. In addition, the findings indicated the frequent use of excuses in Turkish culture (Nakano & Tanaka, 2019). The Turkish participants in the present study were found to use social skills of *indirect approaching, thoughtful expression,* and *behavioural regulations in social life*. In terms of interpersonal relations, an indirect approach combined with indirect communication style and body language specific to Japanese culture was found to be used in Japan. Keeping a personal distance from hosts was also reported by the participants.

The present study indicated the cultural differences in perceptions of privacy. Turkish participants reported avoiding asking questions about private life such as salary and family; they acquired social skills of *private space* in Japan. The findings of the present study are also consistent with the findings of Nakano and Tanaka (2019). Their study also revealed that Japanese people had difficulty with cultural differences in perception of privacy. For instance, the findings showed that Japanese participants were often asked questions about private life such as salary, romantic partners, and family relationships. Participants reported feeling frustrated with the host people's attitudes of lack of consideration.

Furthermore, Japanese participants experienced difficulty in cultural differences with topics and style of conversation. They stated that Turkish people often make jokes and use humour during conversation. Participants reported not being able grasp the contexts because of the frequent use of in-jokes and thus, being unable to react to the conversation. Participants were also confused when asked questions about politics and war, and how they met with their romantic partner (Nakano & Tanaka, 2019). Consistent with this finding, this study revealed that making jokes, particularly during classes, is avoided in Japan. Therefore, social skills of *manners in a class/laboratory* specific to Japan were acquired. The findings of the present study, however, revealed that Turkish students experienced difficulty "reading the air" and understanding the topics and conversations in social contexts; therefore, social skills of *thoughtful expression* were adopted. As both Turkish culture (Karakuzu & Irgin, 2016) and Japanese culture are high-context cultures (Hall & Hall, 1990), social skills of high-context communication such as "reading the air" are essential to able to follow and understand conversations, and to fit the environment.

Additionally, regarding behaviours such as manners or common sense, Japanese participants indicated a loose commitment to rules such as slow perception of time, lack of schedule and planning in Turkish culture. Participants reported having difficulty with the optimistic thinking of Turkish people. They also stated that Japanese people may emphasize time and planning too much, and excessively consider risks. Another difficulty that the Japanese participants experienced was about interpersonal relations. Specifically, Japanese participants had difficulty with the unpredictable ending of social occasions such as home visits, regardless of the timing of occasions in a day (Nakano & Tanaka, 2019). The findings of the present study showed that Turkish participants acquired social skills of *structured socialization* and *behavioural regulations in social life*. For example, being less spontaneous in interpersonal relations, setting appointments two–three days to one week sooner, engaging in details of the events and conveying more information to the invited person, and being more punctual are the social skills that were acquired by Turkish participants in Japan. The findings suggest that cultural differences in time management and scheduling may result in experiencing difficulty with interpersonal relations, leading to acquiring or avoiding certain social skills specific to host culture.

Pedagogical Implications

The findings of the study have several implications for Japanese universities, as well as for Turkish and other international students.

The study investigates social skill phenomena by drawing on interviews with Turkish international students in Japan. By exploring a crucial aspect of adjustment/cross-cultural adaptation of Turkish students, the study aims to increase Japanese faculty and students' awareness of the difficulties international students experience in adapting to Japanese academic culture and social life. Through a better understanding of the factors influencing international students' use of social skills, Japanese faculty and peers can support their efforts to understand Japanese culture and thus become more competent users of social skills. Students who are planning to come to Japan for studying from other countries may also benefit in terms of being more informed about the social skills commonly used in Japan.

The results of a survey (Edwards, 2008) conducted in Australia revealed that international students tend to spend more time at university per week excluding time in class as compared to their domestic counterparts. Considering the amount of time that international students spend on campus, it can be suggested that their main source of social network is university. Furthermore, adjustment difficulties can lead international students to fail academically (Duru & Poyrazli, 2011). Cross-cultural adaptation of international students can be evaluated in relation with academic adjustment (Poyrazli & Kavanaugh, 2006). Therefore, learning social skills specific to host culture is essential for a successful adjustment to the academic culture of the host university and for a successful cross-cultural transition to the host culture.

Basic social skills mean learned communication abilities. Therefore, it is suggested that people can develop and facilitate these basic skills. People can develop more efficient social performances with practice and training in basic dimensions of social skills and in the interrelationships of social skills (Riggio, 1986). In social skills training, individuals' unique social difficulties will be identified, and they will be provided the knowledge and social skills necessary for efficient interaction (Chapdelaine & Alexitch, 2004). Tanaka (2012) held a cross-cultural psycho-educational program to facilitate cross-cultural social skills learning of international students studying in Japan. The program was designed as to provide cognitive and

behavioural learning of culture-specific behaviours regarding interpersonal relationships. The students' responses were collected during, immediately after, and one year after the program. The students reported gaining cultural awareness and deeper understanding of the host culture as a short-term effect of the session. They also stated that they acquired new social skills, which led to improvement in self-efficacy and positive feelings. One year after the program, the participants reported using some social skills they had learned in the session, depending on the context and opportunities. The psycho-educational program is suggested to be used as a tool to facilitate cross-cultural adjustment of international students in Japan. International students could develop better relations with host people and improve their sociocultural adjustment by using the social skills they learn in the program. Psycho-educational program could help enhance international students' psychological adjustment by acquiring social skills necessary to avoid misunderstandings with hosts. Students could feel comfortable in the unfamiliar settings and experience self-growth by learning necessary social skills. Therefore, psycho-educational programs to facilitate social skills learning can be provided by Japanese universities to international students, including Turkish students in Japan, as well as strategies to cope with social difficulty during cross-cultural transition, including academic adjustment.

Suggestions for Further Research

This study identified and described cross-cultural social skills of Turkish international students in Japan. Considering that very limited research in Japan has investigated student populations from different nations and cultures other than Western cultures, it might be interesting to discover the cross-cultural experiences of international students from various cultures. The findings of this study call for more extensive cross-cultural examination to be able to explore the roles of different factors on social skills use of international students, particularly Turkish students in Japan. In addition, further research on the social skills of international students from different countries is crucial for testing their transferability (in qualitative research in preference to external validity/generalizability, Shenton, 2004). As previously mentioned, Tanaka and Okunishi (2016) employed a list of social skills and how commonly these skills were used by international students in Japan. Although this study did not apply the list of social skills to the participants, it might be interesting and helpful to examine the use of social skills of Turkish students with a larger-scale quantitative study in the future.

Limitations of The Study

As a qualitative study with 21 participants, the findings may not be generalizable due to the small sample size; however, transferability to other situations may be carefully considered. Since it is a pioneer study on Turkish international students in Japan, the representativeness of the sample should be carefully evaluated. The study focused on one cultural group, and other cultural groups or settings might yield different results.

Acknowledgments

Portions of this work were supported by a KAKENHI (No 15H0345611) Grant-in-Aid for Scientific Research (B) from the Japan Society for the Promotion of Science.

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Self-Esteem and Academic Achievement: The Relationship and Gender Differences of Malaysian University Undergraduates

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Abstract

A positive correlation between self-esteem and academic achievement is often noted in the literature on educational psychology. As such, self-esteem and academic achievement are often inter-related. Additionally, gender is believed to have an impact on an individual's self-esteem and varied disparities are found in self-esteem level between genders. The relationship between self-esteem and academic achievement among undergraduates in Malaysia, is still understudied and the lack of literature necessitates an empirical study. Hence, this study explored the relationship between self-esteem and academic achievement among undergraduates of a private university in Malaysia. Also, it investigated if there is any significant difference in self-esteem and academic achievement between genders. A convenience sampling method was employed on 60 male and 60 female undergraduates of TESL (Teaching English as a Second Language) program. The Rosenberg Self-Esteem Questionnaire was utilized to obtain the data on the participants' self-esteem and their Grade Point Average (GPA). Data analysis using Spearman's rho correlation revealed a significant relationship between self-esteem and academic achievement. Based on the Chi-square test result, a significant difference in academic achievement between male and female students was established. However, the independent t-test result revealed an absence of significant difference in self-esteem between male and female students. The findings demonstrate essential implications for students, counselors, and educators, and suggest relevant recommendations for future research. A larger sample size should be employed, and other important demographic variables should be explored to examine more in-depth into this interesting field of study.

Keywords: academic achievement, correlation, gender differences, self-confidence, self-esteem

Introduction

Self-esteem refers to a personal evaluation of his or her worth as a person (e.g., Donnellan et al., 2011; MacDonald & Leary, 2012). It is the subjective measure of a person's values – the worth that one believes one has as an individual (Sharma, 2014). Self-esteem, by definition, is a construct that does not necessarily reflect objective characteristics of the person, or how the person is seen by others (Orth, Erol, & Luciano, 2018). Nevertheless, self-esteem is often associated with self-confidence because it predicts certain outcomes, such as academic achievement. Studies among university students reveal a significant relationship between self-esteem and academic achievement (e.g. Akram & Suneel, 2018; Arbabisarjou, et al., 2016; Arshad, Zaidi & Mahmood, 2015). In fact, self-esteem plays an important role in determining academic achievement and for students who obtained high achievement in their studies, the confidence level is higher than those who attained less because the latter are disadvantaged by their lack of self-confidence (Aryana, 2010). While increasing the learners' self-esteem can help to improve their academic performance (Rubie et al., 2004), a poor academic attainment does not necessarily display a low general self-confidence (Pullmann & Allik, 2008). At the same time, other studies have found a significant but weak correlation between the two variables (Wibowo, 2016) and self-esteem has a weak positive effect on academic achievement (Marsh & O'Mara, 2008). Although much attention has been given to the relationships between self-esteem and academic performance (Jordan, et al., 2015; Doodman, et al., 2017), similar studies are very limited in Malaysia especially among undergraduates of private universities and the lack of literature necessitates an empirical study. Therefore, this study was conducted to investigate whether a significant relationship exists between self-esteem and academic achievement among male and female undergraduates of a private university in Selangor, Malaysia.

Literature Review

Studies on the association between self-esteem and academic achievement among university students have been conducted in other countries like Pakistan (Akram & Suneel, 2018), Iran Mirzaei-Alavijeh et al., 2018), and Indonesia (Wibowo, 2016). In Malaysia, although many studies have also been conducted on the association between self-esteem and academic achievement, the participants were usually students from secondary schools (e.g., Sherina, et al., 2008; Nazirah, et al., 2012; Wan Mohamed & Yunus, 2017). The dearth of literature on this topic among university students in Malaysia offers a gap in the existing literature, which has prompted this present study. This present study is deemed as necessary to reduce the gap in literature on the relationship and gender differences in self-esteem and academic achievement among university undergraduates.

Among these past studies, Mohammad (2010) examined the relationship between self-esteem and academic achievement among 50 male and 50 female pre-university students. The findings revealed a significant difference in academic achievement between genders and a significant positive relationship between self-esteem and academic achievement. However, there was an absence of significant difference in self-esteem between genders. Muhammad's (2010) findings were supported by Rosli et al. (2011). Using 220 second-year medical students of a public university, they performed a cross-sectional study to investigate the association between self-esteem and students' academic achievement. The results showed that students with higher self-esteem performed better in their academic and they concluded that self-esteem is one of the key factors that contribute to individual's academic performance. Kharsah's & Latada's

(2016) study also ascertained the findings by previous studies that significant relationships existed between the levels of self-esteem and academic performance.

In contrast with other research findings, Emamzadeh (2004) revealed that there was no significant association between self-esteem and academic success in his study among 261 male and female students which compared social skills and self-esteem and academic success. This finding is supported by a study conducted by Rahimi (2016) who investigated the association between emotional intelligence, self-esteem, and academic achievement among 300 university students. The results of the data analyses displayed that emotional intelligence and self-esteem had no significant relationship with academic achievement. Besides, there was no significant difference in emotional intelligence between genders, but female participants exhibited better self-esteem than male participants. Therefore, psychological concepts such as emotional intelligence and self-esteem alone are proven not effective factors in determining academic achievement in this study.

Notably, gender is generally believed to have an impact on the development, demonstration, and existence of self-esteem in individuals (Naderi et al., 2009) and varied disparities are discovered in the level of self-esteem between genders. While some studies on self-esteem and gender (e.g., Habibollah, et al., 2009; Sadaat, Ghasemzadeh & Soleimani, 2012; Rahimi, 2016; Damota, Ibrahim, Woldemariam & Kifle, 2019) discovered a significant relationship, others (Mohammad, 2010; Twinomugisha, 2008; Sar Abadani Tafreshi, 2006) found no significant difference between the two variables. Habibollah et al. (2009) who studied the association between self-esteem, gender, and academic achievement among 153 Iranian undergraduates studying at Malaysian universities, discovered an absence of significant relationship between self-esteem and academic achievement, but a significant difference between gender and self-esteem. This finding is supported by Rahimi (2016) and Damota, et al. (2019) who also found a significant difference for self-esteem between genders. While Rahimi (2016) ascertained that self-esteem among female students is generally higher than male, Damota, et al. (2019) concluded with a contradictory finding.

Accordingly, the diverse findings from past studies and the available literature from Malaysian contexts are utilized to shape and guide the scope of this study. In sum, this study is conducted to ascertain the relationship and gender differences in self-esteem and academic achievement among undergraduates of a private university in Malaysia. The research questions include:

1. Is there any significant difference in academic achievement between genders?
2. Is there any significant difference in self-esteem between genders?
3. Is there any significant relationship between self-esteem and academic achievement?

The following research hypotheses were also examined.

H1 - There is a significant difference in academic achievement between genders.
H2 - There is a significant difference in self-esteem between genders.
H3 - There is a significant relationship between students' self-esteem and academic achievement.

Methodology

Research Design

This is a correlational study that measures the relationship between variables. This design allows researchers to assess the statistical relationship (i.e., the correlation) between variables and it has higher external validity than experimental research (Price et al., 2017).

Participants

The convenience sampling method was used to select the respondents. A sample of 120 TESL undergraduates from a private university in Selangor, Malaysia who were made up of 60 female and male students respectively were involved in this study.

Research Instrument

The Rosenberg Self-Esteem Scale (RSES) questionnaire (Rosenberg, 1965) was employed to obtain the data on the participants' self-esteem and their Grade Point Average (GPA) in their present and preceding semesters. This questionnaire is a ten-item scale that measures both positive and negative feelings about oneself (Rosenberg, 1965). All the items were ranked in a four-point Likert scale format from 1 (strongly agree) to 4 (strongly disagree). Some of the items are reverse-scored, and the total score was calculated by summing up the total points for an overall measure of self-esteem. The scale is considered highly consistent and reliable, and scores correlate highly with other measures of self-esteem. It has been used by many researchers over the years and it remains as one of the most-cited scale of measurement for self-esteem. The Rosenberg Self-Esteem Scale has a high rating reliability and internal consistency of 0.77. The participants were required to sign a consent document before responding to the questionnaire. They took 20-25 minutes to answer the questionnaires.

Data Analysis

The data was computed using the Statistical Package for Social Sciences (SPSS) 21.0. Inferential statistics namely the Spearman's rho correlation and Independent Sample Test (T-test) and descriptive statistics that is chi-square were used in the data analyses.

Results

The results are presented based on the three research questions: whether there is any significant difference in academic achievement between genders, significant difference in self-esteem between genders, and the relationship between self-esteem and academic achievement.

The Differences in Academic Achievement Between Genders

To answer the first research question, a Chi-square test was run to make a comparison between genders in terms of their GPA (Grade Point Average) achievement. There were 60 male and 60 female students, respectively. The comparison was made based on the students' GPA which was classified into four levels of achievement namely between 2.00-2.50, 2.60-3.00, 3.10-3.50, and 3.60-4.00 respectively.

Table 4.1 The differences in academic achievement between genders

	GPA					
Gender	2.00-2.50	2.60-3.00	3.10-3.50	3.60-4.00	X2	p
Male	5	27	24	4	48.158	.001
Female	2	1	24	33		

Table 4.1 shows that there were differences in academic achievement based on the respondents' Average Point (GPA). The result revealed that the female students had obtained better and higher scores than the males. The male students tended to dominate the lowest levels, that is, the first and second levels with 5 males (2.00-2.50) and 27 males (2.60-3.00) as compared to only 2 females (2.00-2.50) and 1 female (2.60-3.00) respectively. In contrast, most female students dominated the higher level of achievement with 24 (3.30-3.50) and 33 (3.66-4.00) as compared to only 4 males scoring between 3.60-4.00 and 24 achieved between 3.10-3.50 respectively. The overall result was significant as the total amount of X2 is 48.158 and P=.001<0.05. There were significant differences between male and female students in academic achievement. Therefore, the research hypothesis (H1) was accepted as there were significant differences in academic achievement between genders.

The differences in Self-Esteem Between Genders

An independent t-test was run to answer the second research question on the differences in self-esteem between genders. There were 60 females and 60 males who responded to the questionnaire.

Table 4.2 The differences in self-esteem between genders

Gender	N	Mean	SD	t	p
male	60	79.55	9.93	.412	.681
female	60	80.35	10.94	.413	.681

From Table 4.2, the analysis shows that both genders had a good level of self-esteem as the mean scores for males and females are M =79.55 and M =80.35 respectively. However, there was no significant difference between males and females in terms of their self-esteem with P =.681>0.05. Thus, the research hypothesis (H2) was rejected as there was no significant difference in self-esteem between males and females.

The Relationship Between Self-Esteem and Academic Achievement

Spearman's rho correlation was employed to examine the relationship between students' self-esteem and academic achievement. All the data obtained from the 60 male and 60 female respondents were computed respectively and the result was generated as follows.

Table 4.3 The relationship between self-esteem and academic achievement

	Academic achievement	
Self-esteem	*r*	*p*
Spearman's r	0.214*	0.019

*. Correlation is significant at the 0.05 level (2-tailed)

From table 4.3, it is found that the relationship between students' self-esteem and academic achievement was at p=.019. This shows that there was a significant relationship between self-esteem and academic achievement. Therefore, the research hypothesis (H3) was accepted because there was a significant relationship between students' self-esteem and academic achievement.

Discussion

The findings on the positive relationship between self-esteem and academic achievement support past studies. The first finding is consistent with past studies, which confirmed that there were significant differences in academic achievement between genders, and female students have high scores on academic performance as compared to male students (Jacob, 2002; Mohammad, 2010; Twinomugisha, 2008; Baharudin & Zulkefly, 2009; Arshad, et. al., 2015). A study on gender differences in adolescents' academic achievement also observed that girls are less likely to get low scores than boys (Marcenaro–Gutierrez, et. al., 2018). In this study, male students tend to dominate the lowest grades in terms of their GPA. Nevertheless, this finding leaves us with a paradoxical curiosity on whether these significant differences were the effects of the respondents' self-esteem or other cognitive or non-cognitive variables.

Past findings ascertained that females outperform their male counterparts in academic achievement because in general females have better memory than males in all types of memory such as episodic, spatial, short-term, visual, specific memories, and early memories (Halpern 2000). Furthermore, males are three to five times more susceptible to language disorders such as stuttering, dyslexia, and so on, than females (Bannatyne 1976; Gordon 1980; Sutaria 1985). Since this study did not include intelligence quotient (IQ), it can be considered as an important variable to be included in future studies to examine its relationships with academic achievement and self-esteem.

For the second finding, it is ascertained that there is no significant difference in self-esteem between male and female students which supports the findings by some past studies (e.g., Joshi & Srivastava, 2009; Mohammad, 2010; Twinomugisha, 2008; Sar Abadani Tafreshi, 2006). For the analysis of self-esteem between genders, the result reveals that both males and females have a good level of self-esteem, which has probably boosted their academic performance and enabled many of these undergraduates to obtain a high CGPA of between 3.00 – 4.00 for both genders. Indeed, a good self-esteem has the potential of giving a positive impact because students with higher self-esteem have been proven to do better in their academic performance (Rosli et al., 2011). Additionally, it has been shown that students with high self-esteem are able to set better academic goals based on their values and work hard to achieve them (Oztas, 2010).

However, this second finding also contradicts other past studies (e.g., Rahimi, 2016; Naderi et al., 2009; Sar Abadani Tafreshi, 2006; Zareh, 1994) which discovered that there were significant differences in self-esteem between genders. Although a study by Arshad, et. al., (2015) reveals that male students have high scores on self-esteem as compared to female students, our study shows that gender does little influence on self-esteem. However, gender differences may vary between ethnicities and across cultures and such demographic variables can be intentionally explored in future studies.

Finally, for the third and the main finding, the study results also support the findings from previous studies (e.g., Mirzaei-Alavijeh et al., 2018; Wibowo, 2016; Rosli et al., 2011; Aryana, 2010; Sandra, 2009; Habibollah et al., 2008; Sadaat et al., 2012) who all cited a positive correlation between self-esteem and academic performance. However, the findings differ from Van Laar's (2000) study who found that there is little to no relationship between self-esteem and academic success in African American students.

Nevertheless, whether self-esteem has really impacted the undergraduates' academic achievement could not be fully ascertained as past studies also found that academic achievement can also affect self-esteem. Although there are many different views on the relationship between academic achievement and self-esteem, some studies also revealed that self-esteem can reflect a response to school performance (Alves-Martins et al., 2002; Morvitz & Motta, 1992; Osborne, 1995; Rosenberg et al., 1995). Students may automatically feel better about themselves when they receive good grades, thus boosting their self-worth and directly improving their self-esteem. This is ascertained by Ross' and Broh's (2000) self-esteem model which states that adolescents do better in school when they feel good about themselves than students with low self-esteem. On the other hand, a poor achievement in academic can contribute towards a more negative perception of oneself (Osborne, 1995).

However, other researchers have different views and findings related to this relationship between self-esteem and academic achievement. Kohn (1994) claims that there is no definite relationship between self-esteem and higher achievement. Kohn (1994) also contends that some researchers believe in the causal relationship between self-esteem and achievement. It is possible in certain situations that students may be feeling good because they are doing well rather than doing well because they are feeling good about themselves (Baumeister & Lipsitt, 2003.). Besides, there are other researchers who also argue that it may not be truly an independent variable that has impacted the relationship because there may be other factors that have increased the level of self-esteem and achievement, denoting as if there is a close relationship between the two (Kohn, 1994). Furthermore, past studies also revealed that there are other factors that have also impacted ones' performance, for example, anxiety which surprisingly can lead to positive pushing effect (Kaswadi et al., 2018), or it may be due to occupational or academic settings (McLaughlin, 2015). Hence, more studies are eminent to probe further into the association between self-esteem and academic achievement, especially among university students in Malaysia.

Like any other research studies, the present study has its own limitation. Primarily, in this study only one demographic variable, that is, gender is examined. However, the magnitude of the relationship between self-esteem and academic achievement can also be affected by several other demographic variables such as parents' educational background, income, age, learning environment, cultures, and so forth. Taking this into consideration, future research can take any of these demographic variables to be studied in order to obtain more compelling results.

Conclusion

Despite the inconsistent findings from various past studies, this study shows that there was a significant relationship between the students' self-esteem and academic achievement. Whether self-esteem affects academic achievement or academic achievement affects self-esteem, the relationship is still worthy of understanding and researching. More studies in the context of Malaysian higher education are needed to examine this relationship. Also, future studies may employ a larger sample size and take into account other relevant variables such as self-confidence, attitudes, IQ, motivation, family background, or socio-economic status to examine their influence on academic achievement and self-esteem.

Self-esteem is an exciting research topic that can offer opportunities for future research especially in Malaysia where there are still limited studies conducted in this field of study. Future studies can employ a mixed-method design to obtain qualitative data from their respondents to identify their opinions on what have boosted their academic achievement. Additionally, future research can also explore other influencing factors for academic achievement, whether it is their self-esteem, intrinsic motivation, extrinsic motivation, encouragement from family members, or the academic achievement itself.

Acknowledgements

We would like to express our heartiest gratitude to 120 TESL undergraduates from Management and Science University, Malaysia, who participated in this study. Our sincere appreciation goes to each one of them for responding honestly to the questionnaire.

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Adolescent Health Literacy, Social Media Exposure, and Perceived Health Status

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Abstract

This study determined the relationships of functional, interactive and critical adolescent health literacy with sociodemographic characteristics, social media exposure (SME), and perceived health status (PHS). A total of 314 high school students from Grades 7 to 10 completed a self-administered questionnaire. Findings revealed that functional health literacy is influenced by age (p-value = 0.058) and parents' educational attainment (FEA: p-value = 0.059; MEA: p-value = 0.033); interactive health literacy was only significantly associated with SME (p-value = 0.004); and critical health literacy was significantly correlated with father's educational attainment (p-value = 0.062), SME (p-value = 0.08), and PHS (p-value = 0.019). For the logistic regression model of functional health literacy, only age was a distinct variable, and for interactive health literacy, it was SME. Other variables such as parenting styles, socioeconomic class, and school and peer influences are encouraged for future research for a deeper understanding of adolescent health literacy.

Keywords: adolescent, health literacy, perceived health status, social media exposure

Introduction

Health literacy is the ability to acquire health information from a variety of sources, process this information, and act appropriately on it. It goes beyond one's capability to read and write and relies on sound decision-making for one's health and wellness (Suri Majid, Chang, & Foo, 2015). Dunn (2015) defines health literacy as the intersection between the demands and complexities of one's health condition, and the skills and abilities needed to manage it. It deals with a person's competence in acquiring health knowledge and taking responsibility for one's health.

One factor that may affect health literacy is perceived health status or subjective health. It is an individual's perceived state of wellness. A person's claim of poor health means a perception that one's physical well-being is unwell, damaged, or ill (Green Facts, 2016). Perceived health status is also an indicator of an individual's future health outcomes, along with other socioeconomic factors (Landefeld et al., 2014). If adequate health literacy leads to favorable health outcomes, then knowing their perceived health status could serve as the validation of how healthy or unhealthy a person could be.

The internet and social media use play relatively vital roles as easy sources of adolescents' health information since health-related information could be retrieved online (Parisod, Axelin, Smed, & Salanterä, 2016). Adolescents often rely on their gadgets to explore different concepts, health topics included (Lenhart, 2015). A part of their knowledge is based on what they can find with the use of the internet and that they might choose it over the help of an established health professional. They look up varying illnesses, sets of symptoms, and treatments online. Thus, adolescent health literacy levels are largely influenced by the use of technology (Parisod et al., 2016).

Health literacy can be divided into different types: functional literacy, critical literacy, and interactive literacy (Suri et al., 2015). Functional health literacy pertains to the sufficient basic reading and writing skills a person needs in order to absorb health information (Nutbeam, 2008) and understand one's own health issues (Health Literacy Centre Europe [HLCE], 2015). Interactive health literacy encompasses a person's social skills that would help when socializing and extracting health information from different sources (Nutbeam, 2008). It includes the individuals' ability to ask questions and discuss their health problems (HLCE, 2015). Lastly, critical health literacy covers a person's urge to take social, individual and political actions to change the determinants of health in the community (Nutbeam, 2008). It concentrates on how that information can be applied in order to make informed health decisions (HLCE, 2015).

The Centers for Disease Control and Prevention (2015) stated that health literacy helps in the prevention of health problems, protect health conditions, and even help in the management of untoward emergency situations should they arise. Inadequate rates of health literacy could lead to unwanted health outcomes such as the lowering quality of care, higher care costs, and lower health status (Jeong & Kim, 2016).

Liang and Brach (2017) reported that only 12% of adults exhibit proficient health literacy rates. Low health literacy leads to a series of negative health situations such as skipping preventive measures which would ultimately help in avoiding chronic diseases, unnecessarily increasing hospital rates due to lack of knowledge, and decrease in overall health status. The Philippine Council for Health Research and Development (PCHRD, 2014) stated that one major reason

behind the suffering of Filipinos from illnesses is the country's low health literacy. A common practice among Filipinos is the act of consulting health officials like doctors when their illness is already chronic and critical. Adequate health literacy levels could provide mitigations against such instances.

Adolescents are individuals in the process of maturing in all developmental domains toward adulthood (Sawyer, Azzopardi, Wickremarathne & Patton, 2018). Physically, they experience a growth spurt and achieve fertility as their reproductive system starts to fully function (Hopkins, 2014). Cognitively, adolescents manifest advanced reasoning skills, abstract thinking skills, and a greater capacity to think about thinking, otherwise known as "metacognition" (Berk, 2016). Emotionally, they hone their emotional intelligence and regulation skills while socially, adolescents take on more social roles as they interact with peers and adults (Berk, 2016). Hence, adolescence is the age group that would ideally have the least worries, health-wise. They have become old enough to not be affected by childhood diseases but have yet to be touched by illnesses which plague the older population through aging (World Health Organization [WHO], 2013). Whenever adolescents encounter health problems, particularly in the Philippines, they are mostly centered on their primary health and physical injuries brought about by violence (WHO, 2013). Approximately 50 percent of the Philippine adolescent population have engaged in a physical fight at least once within a span of a year. However, it has been reported that it gradually decreases with age. Most Filipino adolescents consult with their school physicians or private physicians for medical check-ups and minor illnesses (Department of Health, 2001). There are public and/or private health facilities, rural health facilities, and barangay health stations for physical injuries incurred due to their risky behaviors (Department of Health, 2017).

The low health literacy levels in the country reflect the possible decline in health outcomes (PCHRD, 2014). This study addressed that issue, particularly among the adolescents, and analyzed the possible factors that could contribute to the health literacy levels of their age group. Adolescent health literacy has been crucially low world-wide despite the free-flowing information brought about by the advancement of technology (Lenhart, 2015). There are few studies about it as compared with assessment of adult health literacy (Dewalt and Hink, 2009) and there have not been studies which pertain to the said issue here in the Philippines. The findings from this study can pave way for innovation programs by schools or other institutions that will enhance adolescent health outcomes.

Thus, the study aimed to determine adolescent health literacy levels and its associations with sociodemographic characteristics, social media exposure, and perceived health status. It is hypothesized that the sociodemographic characteristics of adolescents, their perceived health status, and their social media exposure scores are independent from their health literacy levels.

Methodology

This is a quantitative study using a cross-sectional research design. Respondents were Grades 7 to 10 students of two urban private high school institutions in the southern part of Metro Manila. These educational institutions were established approximately 20 years ago, have recently implemented the K-12 curriculum, and use English as their medium of instruction. There were 314 participants aged 12-18 (142 females and 172 males). Complete enumeration was done. Permission of the school heads were obtained along with the informed consent of the participants. They were given the questionnaire to answer in their classroom which took approximately 10 minutes to accomplish.

The self-administered questionnaire was constructed with 4 parts. The first part gathered the socio-demographic characteristics of the respondents (age, sex, grade level, weekly allowance and their parents' educational attainments). The second part pertained to social media exposure where they were asked about the social media sites they often visit, what technological devices they own, and how much time they allot for their social media accounts per day. The third part comprised of the health literacy tool called FCCHL Scale by Ishikawa, Takeuchi and Yano (2008). It featured 14 questions, divided into the three types of health literacy, all of which were answered with a given Likert scale (Never-Often). There were five items for Functional Health Literacy, asking about the individual's ability to read health information. Another five items, for Communicative/Interactive Health Literacy, focused on the individual's capacity to extract information from different sources and what s/he does in order to obtain them. The four items for Critical Health Literacy pertained to a person's ability to distinguish the validity of health information and how s/he would apply it. For Interactive and Critical Health Literacy, the higher the scores, the higher their respective health literacy types. The trend was reversed for Functional Health Literacy where the higher the score, the lower the respondent's FHL. The fourth part had five questions adapted from the Short Form Survey of the Medical Outcomes Study (Hays & Shapiro, 1992) to measure the respondent's perceived general health status. High scores translate to better perceived health.

After data encoding, Spearman's Correlation was utilized to determine the correlations between the different types of health literacy and their age, weekly allowance, parents' educational attainment, social media exposure scores, and perceived health status scores. Kruskal-Wallis test was utilized for the relationship of sex and the different health literacy types. After the correlation analyses, Logistic Regression Analysis was done to analyze the influences of the variables concerned to the different health literacy types. The working equation for this was: $Y_{\text{x health literacy}} = b_{\text{coefficient constant}} + DX_1$ (variable coefficient)

This study did not directly address the effects of parents on the health knowledge of the adolescents. Also, the indicator of their income class is limited to their weekly allowance. It also does not give explanations for other possible factors such as academic performance or self-efficacy which could contribute to health literacy levels of the respondents.

Results and Discussion

Socio-demographic Characteristics of the Respondents

Among the 314 high school respondents, a quarter each were 14 and 15 years old (Table 1). More than half were males and half had allowances which ranged from 500-1,000 pesos/week. This shows that majority of the respondents come from middle-class families. Nearly half of the mothers and fathers finished college education which implies that these significant adults are well-adept with knowledge regarding general health and human well-being.

Table 1: Sociodemographic Characteristics of the Respondents

Characteristics	Frequency	Percentage (N=314)
Age		
12	12	3.82%
13	62	19.75%
14	81	25.80%
15	78	24.84%
16	67	21.33%
17	13	4.14%
18	1	0.32%
Sex		
Female	142	45.22%
Male	172	54.78%
Weekly Allowance		
Less than 500	144	45.86%
500 to 1,000	160	50.96%
1,001 to 1,500	7	2.23%
1,501 and up	3	0.96%
Fathers' Education Attainment		
No EA	3	0.96%
Pre-school	1	0.32%
Elementary	7	2.23%
High School	36	11.46%
College	142	45.22%
Graduate Studies	125	39.81%
Mothers' Education Attainment		
No EA	1	0.32%
Pre-school	0	0.00%
Elementary	8	2.55%
High School	52	16.56%
College	125	39.81%
Graduate Studies	128	40.76%

Social Media Exposure (SME)

Most Visited Social Networking Sites

Facebook is the most visited social networking site among the respondents, with 99% of them having Facebook accounts (Table 2). Other social networking sites/applications garnered a

significant number of responses as well. Other mentioned websites were Wattpad, Ask.fm, and Omegle.

Table 2: Social Media Exposure of the Respondents

Component	Frequency	Percentage (N=314)
Most visited site		
Facebook	311	99.04%
Twitter	183	58.92%
Snapchat	133	42.36%
Instagram	109	34.71%
Ownership of smart phone		
With smart phones	286	91.08%
Without smart phones	28	8.92%
No. of hours/day of usage		
1-4 hours	73	25.52%
5-8 hours	109	38.11%
9 hours and above	104	36.36%
Frequency of SM visits		
Low	31	9.87%
Moderate	77	24.52%
High	206	65.61%

Number of Smart Phone Users. Majority of the respondents owned smart phones (Table 2). Most of those who do not own one were Grade 7 students. Their parents may not have permitted them to have one yet. When asked how they access social networking sites, they answered that they use laptops instead or they go to computer shops.

Number of Hours of Social Media Usage in a Day. When asked how many hours/day they allot for social media, the mean hours garnered was approximately 7.59, with 1 as the lowest number and 24 as the highest. Table 2 shows that three-fourths of the adolescents allocate five hours or more for their social media usage.

How Often They Visit Social Media Sites. When asked to rate on a scale of 1 to 10 how often they use social media, the adolescents had a mean scale score of 7.5. Table 2 indicates that two-thirds observe a high frequency of social media usage.

Social Media Exposure Scores. Majority of the adolescents have been found to be highly exposed to social media usage. The mean of all the SME scores is 7.36, with 2 as the minimum and 12 as the maximum. Approximately 67% of the students scored 7 and higher (Table 3), which is the higher half of the range. These figures support Lenhart's (2015) study, stating that adolescents are enthusiasts of the technologies of today.

Table 3: Distribution of the Social Media Exposure Scores of the Adolescents

Scores	Frequency	Percentage (N=314)
1	0	0.00%
2	7	2.23%
3	5	1.59%
4	21	6.69%
5	21	6.69%
6	49	15.61%
7	50	15.92%
8	61	19.43%
9	49	15.61%
10	41	13.06%
11	8	2.55%
12	2	0.64%

Perceived Health Status (PHS)

The PHS scores of the adolescents were found to be at the higher end of the score range. The mean score was 65.71 and the maximum and minimum scores are 100 and 5, respectively (Figure 1). The respondents have relatively positive perspectives about their health. This could possibly be due to the fact that adolescents are not as worrisome about their health as other age groups. With their bodies at the peak of development (WHO, 2013), adolescents are not as prone to severe diseases as older or younger people.

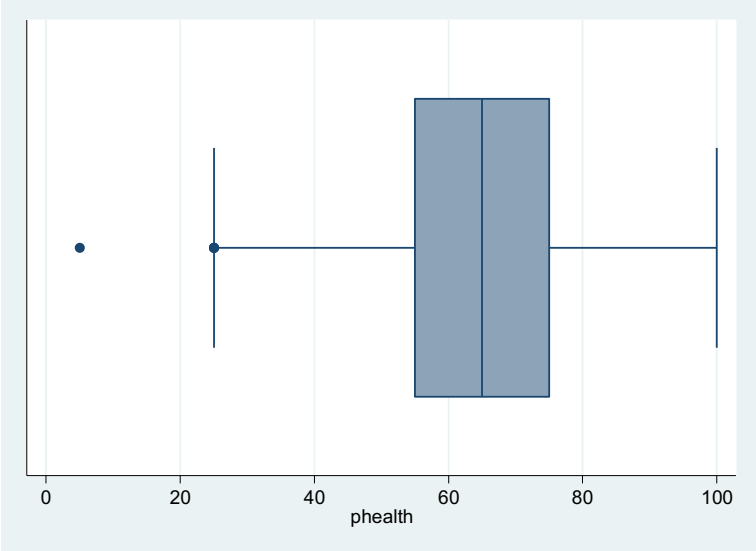

Figure 1. Boxplot representation of the perceived health status scores of the respondents.

Functional (FHL), Interactive (IHL), and Critical (CHL) Health Literacy Scores of the Respondents

The mean FHL score is 1.36, part of the lower half of the score range. Based on the reverse scoring, having a lower score is better (Table 4). More than half of the adolescents have a good FHL level. They are able to absorb health information properly and easily, and they know how to process such information for their own benefit. A possible contributor to this could be the education they receive from their respective schools. With basic literacy skills being taught to students, reading and comprehension are enhanced as they go through their schooling. These skills are also enhanced in their Science and Health subjects.

Table 4: Adolescent Health Literacy Scores of the Respondents

Categories of HL	Frequency	Percentage (N=314)
Functional HL		
High scores	137	43.64%
Low scores	177	56.37%
Interactive HL		
High scores	248	78.98%
Low scores	66	21.02%
Critical HL		
High scores	273	86.94%
Low scores	41	14.06%

With a mean score of 1.84, the respondents' IHL levels are relatively high with more than three-fourths having high IHL scores (Table 4). They are able to converse with significant adults like their parents, teachers, or health practitioners, interact with different sources of health information, and know where to look for them.

Lastly, the mean CHL score garnered is 1.98. CHL scores of the respondents are high with majority having high scores (Table 4). This means that the adolescents have a relatively large capacity to apply the health knowledge they know, should the need for it arise in certain health situations (HLCE, 2015).

Relationships of the Socio-demographic Characteristics of the Adolescents to their Functional, Interactive and Critical Health Literacy Levels

Functional Health Literacy (FHL)

Age vs. FHL. The relationship of age to adolescent functional health literacy was found to be significant with a low but positive degree of association at p=0.058 (Table 5). As the age of the adolescents increase, so do their FHL scores. Higher FHL scores, however, mean less adequate FHL. Thus, age as a variable is inversely proportional to the adolescent's ability to absorb and process health information.

Jeong and Kim (2016) found that older age groups tend to have lower health literacy levels than those who are younger. Their findings showed that the mean age of those with adequate health literacy (40.10 y/o) was relatively lower than the mean age of those with inadequate levels (49.92 y/o). Their study claims that the relationship between age and health literacy are

not always directly proportional. A person could have impressive basic literacy skills but still be poorly knowledgeable when it comes to health information and outcomes. There were similar observations found for decreasing FHL as age increases (Baker, Gazmararian, Sudano, & Patterson, 2000; Von Wagner, Knight, Steptoe & Wardle, 2007). It seems that decreasing cognitive functions may be a factor in this trend. Moreover, they deduced that other external factors may contribute as well such as frequency in reading newspapers, health status, and visual acuity.

For adolescents, a possible reason for this trend could be the existence of barriers to their health-information seeking practices such as having no proper access to health practitioners, being the main dependents in their households, and having no means to access expensive literary materials (Jeong & Kim, 2016). Moreover, younger adolescents may not be as health-conscious as the older ones due to the fact that they may not fully understand the consequences of their actions and are not prepared to avoid risks (Sanders, 2013). Their priorities and self-image also change as they grow older. Adolescents are known to have more priorities pertaining to their material interests and have an "I am invincible" mentality until their late teen years (Sanders, 2013). Thus, their attitude towards health literacy may not be as keen as older adolescents transitioning to adulthood.

Sex vs. FHL. The relationship between sex and FHL was found to be positive with an almost negligible degree of association (p-value=0.155) and the relationship was not significant. Moreover, the Kruskal-Wallis test indicated that there were no significant differences between the FHL scores of the male and female students. The mean FHL scores of males was 1.36 and for females, it was 1.35.

Similarly, Toci et al. (2014) stated that sex does not hold a significant influence over the health literacy of individuals. The findings on its impact have been varied and there have been no apparent trend among previous works which tackled this variable. Jeong and Kim (2016) also stated that gender has no significant effect on those who have adequate and inadequate health literacy levels.

Still, there could be merit in looking into the relationship of sex and FHL. Girls and boys have varying interests when it comes to what they read (Merisuo-Storm, 2006). Females were more into adventure-themed books, whereas the males often chose reading materials with expansive visuals (e.g. comics, funny books). These findings may inform future representations or formats of the health information sources of adolescents.

Table 5: Association of Functional, Interactive, and Critical Health Literacy to the Sociodemographic Characteristics of the Adolescents

Socio-demographic Variables	FHL	IHL	CHL
Age	p = 0.058*	p = 0.173	p = 0.676
Sex	p = 0.155	p = 0.276	p = 0.991
Weekly Allowance	p = 0.609	p = 0.472	p = 0.798
Father's Educational Attainment	p = −0.059*	p = 0.424	p = 0.062*
Mother's Educational Attainment	p = −0.033*	p = 0.321	p = 0.380

* significant at alpha 10% using Spearman's Rho

Weekly Allowance (WA) vs FHL. Weekly allowance and their FHL scores were found to observe a positive very weak relationship. As their WA increases, their FHL levels decrease. However, the association of WA to FHL is insignificant. This supports the claims made by Nutbeam (2008) which stated that basic literacy skills are still the major influence over one's health literacy, among other factors.

However, a possible explanation for the positive relationship is that the adolescents are healthy, especially those coming from the higher income families due to their access to health services and capability to afford nutritious food items from numerous sources. This could affect their need to understand health information.

Father's Educational Attainment (FEA) and Mother's Educational Attainment (MEA) vs. FHL. The correlation between FEA and FHL appeared as significant with a p-value=0.0594 ($p < 0.1$) but the degree of association was negative and low. The same goes for the relationship of MEA to FHL. As parental educational attainment increase, FHL scores of adolescents increase.

Parents are the children's first teachers and role models. When they finish education levels that are beyond high school, they tend to be more hands-on and become better teachers to their children, given a higher level of knowledge (Gratz, 2006). Because of this, children may become more informed and their literacy skills are enhanced. They have better knowledge on and absorption of health information (Alseraty, 2015).

Interactive Health Literacy (IHL)

Age vs. IHL. The relationship between age and IHL appear to be positive with an almost negligible association (Table 5). This implies that as adolescents get older, their ability to voice out their opinions on health and ask questions gets better.

Their communication capacities and their social skills become key roles that they must hone. Adolescents become more socially flexible as they grow older (Hopkins, 2014). Instead of having just one peer group which they interact with and conform to, they explore more genres and fields according to their interests. They also become more exposed to adults like teachers, coaches, and school health officials. This widens their social groups and ultimately develops their ability to interact and communicate with different types of people. Hence, as they progress through adolescence, they would become more comfortable to approach health practitioners to garner the health information they need.

Sex vs. IHL. The sex of the adolescents and their IHL scores were found to have a positive relationship though almost negligible. Sex does not have much impact towards the IHL of an individual. This can also be observed in the mean IHL scores of the male respondents (1.841) and female respondents (1.836). These findings parallel the claims made by Toci et al. (2014) and Jeong and Kim (2016) that sex does not have a clear relationship with health literacy.

However, when looking at the social skills of each gender, some differences could be observed. Females are more socially adept than males (Abdi, 2010). Girls have more social skills, whereas boys concentrate their efforts more on action-based behaviors and externalizing what they feel. Pecjak, Melita, Milena, Jana, and Cirila (2009) stated that female students have more social capacities than male students. With these in mind, it can be seen that both genders have different ways of socializing and gaining experience through interpersonal communication. But

in their health-seeking behaviors, they become similar, making their genders insignificant for comparison (Jeong & Kim, 2016).

Weekly Allowance (WA) vs. IHL. The correlation between weekly allowance of the adolescents and their IHL levels was found to be positive but almost negligible and insignificant. This means that WA has little effect over their IHL scores.

Communication among adolescents is found to be influenced more by external concepts such as forming and maintaining emotional bonds among peers, common interests, and trust formation (Lenhart, 2015). They may discuss health concerns over their purchased snack items and hygiene products but it may not be a top priority at this time.

Father's Educational Attainment (FEA) & Mother's Educational Attainment (MEA) vs. IHL. The IHL scores of the adolescents have a positive relationship with the FEA, however, their association remains negligible and insignificant. There were similar results for the relationship of MEA with IHL.

This could be explained by the greater health knowledge that parents have and communicate to the adolescent about concerns like pregnancy, sexually transmitted infections, and diseases. However, these concerns may not be relevant to the adolescent or they may not be comfortable discussing such with their parents.

Critical Health Literacy (CHL)

Age vs. CHL. The age of the adolescents and their CHL levels have a significant positive but negligible relationship. Age, as a variable, does not have much impact on CHL levels of the adolescents.

This could be due to the decision-making of adolescents since they are still guided by significant adult figures. Adolescents are more inclined to act on impulse and engage in risky behaviors. This entails the need for adult guidance, especially when it comes to their health behaviors (American Academy of Child and Adolescent Psychiatry, 2016).

Sex vs. CHL. The Kruskal-Wallis test indicated that sex and CHL scores do not have a significant association with each other (p-value = 0.9911; $p < 0.1$). They can be considered as independent from one another since their degree of association was almost negligible.

These findings are possibly due to sex as a biological distinction and something internal to an individual (Parisod et al., 2016). Hence, a clear relationship between sex and CHL cannot be seen. This result coincides with the claims made by Toci et al. (2014) and Jeong & Kim (2016). In their studies done on different and older age groups, they also found that sex was not a significant determinant of individuals' health literacy levels. Regardless of sex, individuals will apply health information and decide towards better health outcomes when the need arises.

Weekly Allowance vs. CHL. The weekly allowance of adolescents did not have a significant relationship with their CHL scores. The test for their correlation produced a p-value=0.7977 at $p < 0.1$ and their association is almost negligible.

According to Goldstein and Vo (2012), income classes spend relatively the same amount when it comes to healthcare and health insurance. Hence, income class does not significantly influence health-related decisions of individuals. This notion is amplified by the fact that the

respondents for this study are adolescents, individuals who give priority to things other than their health (McNeely and Blanchard, 2009).

Father's Educational Attainment (FEA) vs. CHL. The relationship between FEA and the CHL scores of the adolescents was positive and significant with a p-value= 0.0621 ($p < 0.1$). An increase in the FEA induces an increase in the adolescents' CHL levels.

Fathers have a direct impact on their children's health (Rosenberg & Wilcox, 2006). Their education has a relatively larger effect on the children compared to the mother's education (Ermisch & Pronzato, 2010) since this paves the way for the application of health information the adolescent would come to know or be taught. Jocson (2012) stated that Filipino fathers have more authority over their children. This could contribute to the amount of impact they have over adolescent health, thus, decreasing their life risks (Yogman & Garfield, 2016).

Mother's Education Attainment (MEA) vs. CHL. The relationship between MEA and CHL scores was positive but negligible with a p-value=0.3798 ($p < 0.1$). Their relationship is insignificant.

A probable reason for this is that educated and working mothers may spend more time at their occupations instead of at home (Ermisch & Pronzato, 2010) and thus, are not much of a resource of health information that the adolescents can use when necessary. Also, they may be dependent on their mother's nurturance and thus, feel there is no need to apply what they know since there is a significant person nurturing them.

Relationships of Social Media Exposure of the Adolescents to their Functional, Interactive and Critical Health Literacy Levels

SME vs FHL

FHL and adolescents' SME scores have a positive but negligible relationship with a $p = 0.7414$; $p < 0.1$ (Table 6). This implies that higher SME corresponds to lower FHL levels and does not have a strong impact on the adolescents' FHL.

A possible explanation for this could be in the degradation of the literacy skills of adolescents with the amount of social media they digest on a regular basis. Woods (2014) opined that the syntax used in social media communication such as word/phrase shortcuts and complete misuse of complex words, and the self-centered perspectives by social media users contribute to the downgrading process of literacy skills. On the other hand, Rheingold (2014) argues that the effect of social media usage, whether it will be positive or negative, solely depends on what the individual knows about it. With these contrasting claims, social media, as a variable, is worth looking into in future studies.

Table 6: Association of Functional, Interactive, and Critical Health Literacy to the Social Media Exposure and Perceived Health Status of the Adolescents

Variables	FHL	IHL	CHL
Social Media Exposure	p = 0.741	p = 0.004*	p = 0.080*
Perceived Health Status	p = 0.250	p = 0.223	p = 0.019*

***** *significant at alpha 10% using Spearman's Rho*

SME vs IHL

Adolescents' SME scores were found to be positively associated with their IHL scores ($p=0.0035$; $p < 0.01$). This implies that higher SME associates with higher IHL levels.

IHL focuses on one's ability to converse about health problems (HLCE, 2015) and communication is a key element. Given that, the benefits of social media can be seen. Moorhead et al. (2013) reported that patients use social media to share health messages and information through chat rooms, discussion fora, instant messaging, and online consultations with medical professionals. According to the Healthcare Information and Management Systems Society (2016), social media as a medium can increase patient-physician communication. Through it, patients become more encouraged to inquire, ask questions, and actually converse with their health practitioners online. They may even converse with peers who have similar health concerns or ask adults they trust about certain health issues. It is in this way that their IHL increases through social media usage.

One of the strongest aspects of social media is its capacity to practice viral social marketing – the ability to maximize the number of people being advertised and informed with a minimal amount of cost. Should this be applied to the spreading of health information, social media would acquire a vital role in health education, promotion and outreach programs (Gosselin & Poitras, 2008). An example of this is the increase in awareness in condom usage in Turkey through viral marketing and other social media techniques (Purdy, 2011). Hence, social networking sites have the capacity to increase the frequency of peer-to-peer communication, peer-to-adult communication; and ultimately enhance an individual's IHL levels.

SME vs CHL

The adolescents' SME scores and CHL levels have a significant positive relationship with a p-value=0.0798 ($p < 0.1$). The more exposed the adolescents are to social media, the higher their CHL levels become.

Social media has the capacity to augment health education, health promotion, and health-related outreach programs through viral social marketing (Gosselin & Poitras, 2008). It can provide health and exercise information that adolescents need in order to carry out proper health-related behaviors. Their health education at school can be augmented through images, uploaded videos and stories about good nutrition and fitness programs.

Centola (2014) stated that social media is viewed as a new component which can be utilized in the field of medicine and health. Its existence has actually helped in the development of more medical research opportunities. With the use of social media sites as carriers of health information, a novel and modern method of spreading valid information was created. Many are aided in knowing the health facts they need to maintain their good health (Centola, 2014). Social networking sites like Facebook and Twitter have been found to induce positive changes in health-related behaviors and outcomes (Laranjo, Arguel, Neves, Gallagher, & Kaplan, 2014).

Relationships of Perceived Health Status of the Adolescents to their Functional, Interactive and Critical Health Literacy Levels

PHS vs FHL

The relationship between the adolescent's PHS and their FHL was found to be a negative negligible association with a p-value=0.2504 ($p < 0.1$), with the degree of their association at r=-0.065. PHS does not have a significant impact on the adolescents' FHL.

The result could be due to the adolescents' positive perception of their health and thus, they do not see the need to understand health information or they may feel that they have adequate information already. However, Amoah, Phillips, Gyasi, Koduah and Edusei (2017) found that if the street youth perceive themselves as being in poor health, they also have low health literacy and vice versa.

PHS vs IHL

The adolescents' PHS scores have a positive weak relationship with their IHL scores. The p-value=0.2228 ($p < 0.1$) and the relationships is not significant.

Their relatively high PHS scores imply that they view themselves as generally healthy. They do not see the need to inquire about and discuss their health status with their peers, adults and health professionals since they feel there is no reason to do so.

PHS vs CHL

The adolescents' PHS scores have a significant positive correlation to the CHL scores with a p -value=0.019 ($p < 0.01$). The higher the PHS, the higher the CHL scores.

In a study for adults and elderly, Furuya, Kondo, Yamagata and Hashimoto (2013) found the same trend between PHS and CHL since CHL refers to the capacity to improve or maintain the health of individuals. Through proper health education, health status would relatively increase. They become more aware of the degree of their well-being and their behaviors change accordingly, taking into account just how much they have to do in order to maintain being healthy by their standards. Adolescents are healthy and they may wish to maintain their good health in order to reach their future goals by applying appropriate health information.

Regression Analysis

The correlation analyses made for FHL, IHL and CHL and the corresponding variables paved the way for its logistic regression analysis. A mathematical model was made which could ideally predict health literacy. When future quantitative values are plugged into the model, the equated FHL/IHL/CHL score would then range from 0 to 1, indicating 0 as the lowest possible score and 1 as the highest.

Logistic regression analysis for functional health literacy. In the case of adolescent FHL, the only significant variable which made it to the model was age (Table 7). Participants' predicted FHL is equal to -2.440 + 0.150AGE (years). Their FHL increased 0.150 for each year in age. Age of the adolescents is a key predictor when determining their FHL levels. Future quantitative values pertaining to age would be the eligible data for the prediction of the FHL levels of adolescents.

Table 7: Effect of Age on the Functional Health Literacy of the Adolescents

Variable	Coefficient
Age	0.150 (.091)*
Constant	-2.440
R^2	0.006
n=314	

*p<.05

Logistic regression analysis for interactive health literacy. For adolescent IHL, social media exposure came out as a significant variable (Table 8). The adolescents' predicted IHL is equal to -0.130 + 0.204SME. Their IHL increased 0.204 for each increase in SME. Hence, SME is deemed as an indicator of or a component when predicting the IHL levels. SME scores would be the most essential quantitative data required in order to make the IHL regression model work in future research endeavors.

Table 8: Effect of Social Media Exposure on the Interactive Health Literacy of the Adolescents

Variable	Coefficient
SME	0.204 (.067)*
Constant	- 0.0130
R^2	0.029
n=314	

*p<.05

Logistic regression analysis for critical health literacy. In the case of CHL, there were no significant variables which made it to the model. This is due to the correlation coefficients not being strong enough to conjure a p-value significant enough to become an indicator. Hence, for this study, no logistic regression model for CHL was derived.

Conclusion and Recommendations

A total of 314 respondents from two private high schools completed a self-administered questionnaire. Results showed that the respondents' exposure to social media was relatively high. The adolescents perceived their health status as good. They had high FHL scores while their IHL and CHL levels are adequate. FHL had significant relationships with age and educational attainment of both parents. IHL had a significant association with social media exposure. Lastly, CHL was found to be significantly correlated with the educational attainment of fathers, social media exposure, and perceived health status.

The study extends the findings on adolescent health literacy by looking into the specific types of health literacy in junior high school students in a developing country. It was able to present the influences of age, parental educational attainment, social media exposure and perceived health status to the specific health literacy types. Further, logistic regression reiterated the effect of age on functional health literacy and the effect of social media exposure on interactive health literacy.

The study does not directly address the effects of parents on adolescent health literacy. Moreover, the indicator of their income class is limited to their weekly allowance. It also does not give explanations for other possible factors, such as academic performance and self-efficacy, which could contribute to the health literacy levels of the respondents. Lastly, this study only features selected respondents from two schools to represent adolescents.

Future research on adolescent health literacy may include other variables such as parenting styles, socioeconomic class, peer influence, and school influence to expound associations with the different types of health literacy. Also, specifying health literacy content (e.g. mental health literacy, sexual health literacy) could help in understanding adolescent health priorities. A qualitative approach may be included to enrich the data on perceived health status and social media exposure. It is also recommended that other forms of measurement for perceived health status be considered.

Educational and health institutions should propagate health literacy to high school students since this can enhance their health-related behaviors as they mature. Intervention and education programs in various forms and platforms on various health literacy content relevant to the youth would contribute to their awareness and readiness for various types of health situation.

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Do Newer Antidepressant Drugs *Really* Have Reduced Side Effects? Examining a Random "Real World" Sample of 300+ Receivers of Medications

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Abstract

Newer antidepressant drugs are frequently cited as having reduced side effect profiles to that of their older counterparts. However, recent studies have begun to dispute this claim, citing selective sampling, short clinical trials, and clinical trial environments as influencing reported outcomes. At present, little research on antidepressant side effects draws on RWD (Real-World Data). Despite this, interest in examining RWD samples for antidepressant drug side effects is increasing as of 2020. The reported study asked a random sample of 300+ individuals taking a variety of different antidepressant medications to complete online drug side effect self-report scales with previously high validity. Newer antidepressants belonging to the atypical antidepressant drug class were reported as having only slightly reduced side effects of weight gain compared with older SSRI-class medications. No reduced side effects of increased depression, anxiety, sexual dysfunction (SD), sleepiness, or suicidal ideation (SI) were found for the newer atypical-class medications vs older SSRI-class agents. Medication adherence did not differ significantly between SSRI and atypical classes. No evidence for reduced side effects was found for newer SSRI and atypical antidepressants vs older same-class drugs when comparing six new and old medications drawn from atypical and SSRI classes. However, atypical antidepressants were associated with increased use of adjunct medications to bolster primary treatment.

Keywords: Antidepressant tolerability, Non-clinical study, RWD (Real-World Data), Social P v, SSRI-atypical side effects comparison

Introduction

Antidepressant medications are some of the most prescribed groups of drugs in the developed world (Corponi et al. 2020). Their therapeutic use is defined as treating disorders involving prolonged or chronic episodes of low mood. The British National Formulary (BNF) group antidepressants into four main classifications, based upon proposed pharmacological mechanism of action (MOA). Classifications are: Monoamine-oxidase inhibitors (MAOIs); Tricyclic and related (TCAs); Selective serotonin re-uptake inhibitors (SSRIs) and a final, newer class defined as "atypical". Notable is that proposed MOAs for the "atypical" group can vary significantly between drugs (Nelson, 2019). While all classes of established and newer antidepressants may successfully treat depression, negative side effects remain the most serious historic and contemporary barriers to medication compliance (DePetro, 2020).

In the UK, the most commonly prescribed medications for depression now belong to the SSRI and atypical medication classes. Less frequently are older TCA or (rarely) MAOI medications prescribed, due to concerns of safety and tolerability (Stahl, 2011). Pharmaceutical companies research and development goals now focus on developing new SSRI and atypical medications for reasons of reduced side effects, while maintaining established treatment efficacy (Krystal et al. 2020). While it is periodically claimed some newer antidepressants achieve this goal (Witkin, 2020), some scholars argue it remains unclear whether many specific newer drugs, or newer classes of drugs are any better tolerated than previously existing medications in a real-world setting independent of controlled trials (Healy, 2018; Healy & Cattell, 2003; Montejo et al. 2019). While newer-class SSRI and atypical antidepressants are often proposed to have reduced side effects vs older medications, troubling side effects of depression, anxiety, sexual dysfunction, sleepiness, weight changes, and suicidal ideation are regularly still reported as leading causes of treatment discontinuation in real-world studies (See DePetro, 2020; Healy, 2018; Jacobsen et al. 2020; Montejo et al. 2019).

The widest body of evidence for reduced side effects in common newer vs older antidepressant medications comes from clinical trials. For example, the newer atypical drug Desvenlafaxine (2007) proposes fewer side effects and greater tolerability than its atypical predecessor; Venlafaxine (1993). A manufacturer-affiliated review (Reddy et al. 2010) demonstrated Desvenlafaxine as highly effective for depression, whilst carrying a low incidence of side effects. However, the side effects reported for Desvenlafaxine were comparable to profiles of other SNRI (atypical) drugs, with no differences found for side effects such as weight gain and anxiety. Several studies illustrate Desvenlafaxine has favourable outcomes when compared with placebo in depressed individuals (DeMartinis et al. 2007; Liebowitz, Yeung & Entsuah, 2007; Septien-Velez et al. 2007). However, for some studies (i.e. DeMartinis et al. 2007) primary endpoints of depression scales (HAM-D17) are powered to measure a reduction in depression scores only and not the >50% selective improvement measure uniformly recommended for antidepressant drug research (See Koda-Kimble et al. 2004). By explanation, Desvenlafaxine's response rate appears 40-60% – lower than common benchmarks for acceptable antidepressants, which typically score between 65-75% (See Healy, 2018). The study lasted only eight weeks, despite National Institute for Clinical Excellence (NICE) prescription guidelines indicating acute phase of MDD (Major Depressive Disorder) typically lasts at least 12 weeks (See Clark, 2011). While some research exploring anxiety-response in mice has been conducted recently (Patil et al. 2020), no independent human head-to-head studies examining Venlafaxine and Desvenlafaxine presently exist, making it difficult to evidence any suggestions of improved tolerability for the newer atypical antidepressant.

Similarly, the newer SSRI Escitalopram is often suggested as more tolerable that its older SSRI counterpart Citalopram. Trkulja (2010) conducted a meta-analysis of existing head-to-head clinical trials comparing efficacy and tolerability of older SSRI Citalopram vs the newer SSRI Escitalopram, noting many studies of treatment tolerance concluded at the eight-week mark. In reviewing drop-out and discontinuation rates due to intolerable side effects in seven double-blind studies – where treatment ranged for four-weeks to twenty-four-weeks – Trkulja (2010) found no statistically significant difference in side effects between patients treated with either Citalopram or Escitalopram. A similar analysis by The Cochrane Group also concluded no significant differences in both total adverse effects and individual adverse effects in a head-to-head comparison (Santilli et al. 2009). Trkulja, (2010) highlights the problematic methodological underpinnings of many same-class drug tolerability studies. For example, an oft-cited study by Yevtushenko et al. (2007) upholds clear benefits of reduced side effects for Escitalopram vs Citalopram. However, Escitalopram tolerability was determined by recording of patient adverse events raised in interview with investigators. This is despite study design otherwise utilising robust and established quantitative scales in a six-week outpatient setting to measure aspects of efficacy.

Other studies position contradicting findings; researchers often suggesting newer atypical-class antidepressants may overall have improved medication adherence compared with SSRIs, due to their predicted reduced side effect profiles. Foley, DeSanty & Kast (2006) found the newer atypical antidepressant Bupropion to have a very low incidence of sexual dysfunction as a side effect, when considering the well-documented sexual side effects of SSRI medications. Similarly, scholars highlight atypical drugs Bupropion and Venlafaxine, and the newer-SSRI Escitalopram as particularly side effect sparing (See Cipriani et al. 2009; Sanchez et al. 2003). Others have claimed Escitalopram (2003) presents reduced side effects of anxiety/stimulation and insomnia compared with Citalopram (1989) (See Cipriani et al. 2009; Einarson, 2004). However, converse findings are also available. Montejo et al. (2001) found the atypical drug Venlafaxine had a higher incidence of sexual dysfunction compared with same-class drugs, and even some SSRIs (Sertraline, Fluvoxamine). Similarly, the atypical medication Mirtazapine has been well-evidenced as an appetite stimulant (Stahl, 2011), and the same-class atypical Bupropion shown to be an appetite suppressor (Stahl, 2011), suggesting conflicting claims regarding blanket reduced incidence of weight-change side effects for the newer atypical drug class.

Some scholars suggest clinical trial study design and methodologies lend to selective results that inflate increased tolerability claims (See Healy, 2018; Healy & Cattell, 2003). Such thinking highlights that enduringly positive "low-side effect" data presented in clinical trials for newer-class and newer-medications often comes with the caveat of being difficult to replicate, with trial subjects often displaced from their regular routines, interactions and environments. Sometimes, clinical examinations run only for a short time. Healy (2018) and Lorenz (2019) question whether clinical trials run long enough to define between short and long-term, mild, and severe side effects. They argue short drug trials recurrently highlight mild antidepressant side effects, due to not allowing time for lasting side effects to manifest to a recognisable, or reportable level. This is opposite to evaluating side effects when medication receivers have continued treatment over a longitudinal timeframe, during their everyday lives (Jacobsen et al. 2020; Montejo et al. 2019). Such debate represents a prominent research gap, highlighting the rarity of impartial self-report studies that examine random "real world" samples. This study's novel design collected antidepressant side effect data directly from participants already taking antidepressants, using side effect scales previously showing high validity in clinical settings. Reported data exceeded the "low-limit" of 8-weeks and "upper-

limit" of 24-weeks commonly seen in side effect trials, with most participants taking primary medication for at least 6 months. This promoted accurate self-reporting of data, increasing reliability and validity of outcomes by examining first-hand, real-world antidepressant experiences.

Method

Primary research and data-collection was conducted in June-August of 2013. All ethical approvals were sought and secured through the appropriate institutional channels[1]. An internet-based self-report questionnaire "combined measure of antidepressant side effects" was developed for participant completion. Scales drew on the most prevalent side effects highlighted in existing analysis literatures and utilised the most recent, and reliable short-form measures evidenced in existing studies of medication adherence. Six short-form scales were used to measure side effects of increased depression, anxiety, sexual dysfunction, sleepiness, weight change, suicidal ideation. A measure of medication compliance was also included, and participants were asked to record any additional medications or therapy received alongside their primary antidepressant. Finally, participants were asked to record their subjective attitudes towards any side effects experienced.

Participants

The target group was any individual, taking antidepressant medication, over the age of eighteen who was not currently being treated for alcohol dependence, drug dependence or as a psychiatric inpatient - factors which may influence antidepressant effectiveness, adherence and tolerability (Stahl, 2011). A total of 517 participants began the survey (117 males, 231 females, 168 not specified). However, 172 did not fully complete the survey and these results were discarded. Of the 345 remaining completed surveys 116 (34%) participants were male (Mean: 28.30, SD+/- 8.07) and 228 (66%) were female (Mean: 26.51, SD+/- 7.49). Overall mean age of the sample was 27.11 years (SD+/- 7.71).

Side effect Measures

Depression – Beck Depression Inventory (BDI)

Depression was measured using the *Beck Depression Inventory (BDI-1A),* a 21-item self-report inventory validated for measuring depression severity in healthy populations (Beck, Steer, Garbin, 1988). The Beck Depression Inventory was selected for ease of participant completion as a short, self-administered, and reliable depression measure. The BDI holds long-standing use as a depression diagnostic tool which can be easily adapted to self-administer. It is frequently used in depression research (Faro & Pereria, 2020). Scoring ranges from a minimum of 0 to a maximum of 63. Scores over 15 indicate depression. The inventory comprised of depression symptom items including: sadness, failure, guilt and disappointment as well as measures of physical changes such as weight and fatigue. Items were scored using 4-point Likert scales (e.g. I can sleep as well as usual; I don't sleep as well as usual; I wake-up 1-2 hours earlier than usual and find it hard to get back to sleep; I wake-up several hours earlier than I used to and cannot get back to sleep). Higher overall scores indicated greater levels of depression (1-10: These ups and downs are considered normal; 11-16: Mild mood disturbance; 17-20: Borderline clinical depression; 21-30: Moderate depression; 31-40: Severe depression; Over 40: Extreme depression). Validity of the BDI is well established in literature with samples from different populations. The BDI showed adequate reliability estimates scoring a coefficient

[1] Ethical approval was secured at the institution where primary data collection was conducted.

alpha of 0.81 for non-psychiatric subjects, with a Cronbach's alpha value greater than .70 indicating reliability.

Anxiety – Beck Anxiety Inventory (BAI)

The *Beck Anxiety Inventory (BAI)* (Beck, et al. 1988) was used to measure anxiety. The BAI had twenty-one questions. Scoring ranged from a minimum score of 0 to a maximum score of 63. Responses were chosen from a 4-point Likert scale presented as a grid matrix (e.g. Not at all; mildly – but it did not bother me much; moderately – it was not pleasant at times; severely – it bothered me a lot). Questions explored physical and psychological symptoms of anxiety such as: heart pounding/racing, numbness or tingling, inability to relax, fear of dying. Higher scores indicated higher anxiety (A total of between 0-21 was indicative of very low anxiety, a grand sum of 22-35 indicated moderate anxiety, and a total exceeding 36 showed cause for concern, indicating persistently high anxiety). The BDI showed reliability and consistency when measuring anxiety, with a coefficient alpha of .94 in normal populations. A coefficient alpha greater than .70 indicated reliability (Clark et al. 2016).

Sexual Dysfunction – The PRSexDQ-SALSEX scale

The *Psychotropic-Related Sexual Dysfunction Questionnaire* (PRSexDQ-SALSEX) (Montejo & Rico-Villabemoro, 2008) was used to measure sexual side effects. The scale scored participants on DSM-IV measures of SD using six-question scales. Scores ranged from a minimum total score of 0 and a maximum total score of 15, with each of the 5 questions scoring between 0-3. Total scores of 0-5 indicated of mild sexual dysfunction, scores of 5-10 showed moderate sexual dysfunction and scores of 10-15 indicated severe SD. Scale questions were preceded with a single polar choice question (Yes/No). For example: "Have you observed any decrease in your desire for sexual activity or interest in sex?" (No problem, mild decrease; somewhat less interest, moderate decrease; much less interest, severe decrease; almost none or no interest). The PRSexDQ-SALSEX had evidenced reliability with a coefficient of .70 for individuals treated with psychiatric medications. Coefficients of .70 or greater indicated reliability. The PRSexDQ-SALSEX scale (Montejo & Rico-Villabemoro, 2008) was selected due to scoring markers highlighting specific changes in sexual function, shown to be the most reliable predictor of SD as an antidepressant side effect. Wording was viewed as more clinical, and impersonal than alternative scales considered, while remaining short and easy to complete. Such factors minimise participant embarrassment, encouraging honest responses in an area notoriously difficult to measure accurately.

Sleepiness – Epworth Sleepiness Scale

Sleepiness was measured using the *Epworth Sleepiness Scale* (Johns, 1991). A four-point Likert scale allowed participants to rate likelihood of "dozing off" in different situations. The scale contained eight questions with a minimum score of 0 and a maximum score of 24 possible. Participants scored each of the eight questions from 0-4 on a numerical scale depicting likelihood of dozing: No chance, slight chance, moderate chance, and high chance. Items (e.g. "sitting and reading") measured fatigue levels per time of day and activity. Higher scores indicated higher levels of daytime fatigue and sleepiness. In general populations, Johns, (1991) reported a coefficient alpha of .82, coefficients of .70 or greater indicating reliability.

Weight change - Short Measure Weight Change (A-SMWC)

A specific Short Measure Weight Change (A-SMWC) scale was developed purposely for this study as a short, reliable, self-completed measure of weight-change, specific to individuals taking psychiatric medications. Previous scales were long and non-specific (See Burke, Wang, Sevick, 2011). A-SMWC items were based on studying existing, longer scales of weight and appetite change. Questions were tailored to be short, concise, and narrowly descriptive while remaining rational indicators of weight changes in individuals taking antidepressants. At establishment of theoretical context, the scale item pool initially had fourteen items. Scale items were removed to increase internal consistency during inter-scale reliability analysis. The scale was reduced to six items and tested on a heterogeneous sample representing the target population as an initial pilot survey. Test-retest reliability remained high when six-item questions were randomised over three pilot studies. Scale internal consistency and inter-reliability within an initial ten-person sample showed a Cronbach's alpha of .73, a second larger sample showed a Cronbach's alphas of .71, Cronbach's alpha of .70 or greater indicating scale reliability.

The Short Measure of Weight Change (A-SMWC) asked participants to self-rate subjective experience of weight and appetite change across six questions using a 5-point Likert scale. Scores ranged between a minimum of 0 and a maximum of 24. Questions related to current perceptions of weight loss/gain and appetite increase/decrease, that is, "my current medication increases my enjoyment of food, causing me to eat more", "my current medication makes me feel so nauseous that I find myself eating a good deal less". Question four was a single measure of severity: "there are times where the weight change side effects of my medication make me want to stop taking it, despite my knowledge that the medication has been prescribed to treat symptoms of depression/anxiety". Question 1 was an initial marker of weight change: "my current medication does not affect my weight". Higher scores indicated greater incidence of weight change. The direction of weight change can be further calculated by measuring scores on questions two and six (where higher scores indicated weight gain) and questions three and five (where high score indicated weight loss). On reverse-scoring questions three and five, higher total scores indicate weight gain, low scores indicate weight loss. A-SMWC scored a Cronbach's alpha of .71 with an alpha of .70 indicating acceptable reliability.

Suicidal Ideation – Kessler Psychological Distress Scale (K10)

SI was measured using the *Kessler Psychological Distress Scale (K10)* (For a comprehensive overview see Tanhaye, 2020). The K10 consisted of ten questions with a possible minimum score of 0 and a maximum score of 40, higher scores indicating greater SI. Choices were rated on a 5-point Likert scale (e.g. none of the time, a little of the time, some of the time, most of the time, all of the time). Questions measured frequency of negative physical and mental symptoms of distress (e.g. How often did you feel tired out for no good reason? How often did you feel nervous? About how often did you feel so restless you could not sit still? About how often did you feel worthless?). Scoring of 0-15 (Group 1) indicated remote chance of a suicide attempt and a quarter of the population risk for meeting criteria of anxiety or depressive disorders; Scores between 16-21 (Group 2) indicate 1% chance (medium risk: three times the population risk) of attempting suicide and 1 in 4 chance (three times the population risk for depression disorder or anxiety disorder; Scores of 22-29 (Group 3) indicate a 6% suicide chance (high risk: twenty times the population risk) and a 3 out of 4 chance of depression and anxiety diagnosis. Scoring further decodes as: Group 1 comprise 78% of the population, their score is low: It is likely they do not require medical help. Group 2 comprise 20% of the

population: Discretion is suggested, individuals may require medical help. Group 3 comprise of 2% of the population: They require immediate medical help (Tanhaye, et al. 2020). The K10 is a reliable indicator of suicidal ideation (95%). A coefficient alpha of .91 indicated high reliability, with an alpha of .70 or greater indicating reliability.

Medication Adherence

Medication adherence was measured using the *Medication Adherence Rating Scale (MARS)* (See Thompson, Kulkarni, Sergejew, 2000), a short 10-question scale. All MARS ten questions presented as an exclusive disjunction with only a polar choice (Yes / No). Questions 2, 6, 9 and 10 were worded negatively (e.g. Are you careless at times about taking your medication; Medication makes me feel tired and sluggish?) with the remainder of questions worded positively (e.g. My thoughts are clearer on medication?). Negative questions were reverse scored. "No" scores on questions 1-6 and "yes" Scores on items 7-8 indicate compliance. Scoring was re-coded numerically in accordance with established guidance for use. A minimum total score of 10 and a maximum score of 20 was possible. 10-14 indicated poor medication compliance, 14-18 indicated moderate medication compliance, 18-20 indicated excellent medication compliance. The MARS showed a coefficient alpha of .75 in a sample of individuals taking psychiatric medications, with .70 or greater indicating reliability.

Side effects overall contribution to depression

A final question asked: "I feel the side effects caused by my medication significantly contributes to my overall feelings of depression". Responses were measured on a five-point Likert scale (Totally agree, somewhat agree, neither agree nor disagree, somewhat agree, totally disagree), the minimum total score possible was 0 and the maximum score 5. Higher scores indicated medication side effects had lower contributions to depressive feelings, while lower scores indicated side effects had greater influence on overall depression.

Procedure

A web-link to the questionnaire portal was posted on a popular social networking site, after obtaining permission from the social media organisation to share the link. The questionnaire remained online for approximately three weeks. Following this, all data was downloaded and analysed.

Analysis

Mean differences in side effects and medication adherence between participants taking SSRI vs. atypical antidepressants was examined using independent samples t-tests. Mean differences between individual antidepressant side effects were compared using one-way ANOVA. Where effect reached significance at the 5% ($p = <0.05$) level, F or t ratios and significance levels are recorded. A further Post-Hoc analysis was carried out using Fisher LSD at the 5% significance level. Chi square tests were used to compare mean differences in side effects for individuals taking SSRI vs. atypical who were taking adjunctive medication, adjunctive therapy and both adjunctive medication and adjunctive therapy. All data were analysed using SPSS.

Results

Overview Statistics

A total of 517 participants began the survey, however incomplete data was excluded leaving 345 complete responses. A further six participants were excluded due to recording multiple

contraindicated primary medications, leaving a total of 339 participants. *Table 1* illustrates the breakdown of the total sample per medication class, gender, and age.

Table 1: Breakdown of participants according to antidepressant class, gender and age.

Total Number of participants taking SSRI medications.	%age of total sample (339)	Number of Male SSRI participants	Male %age of SSRI sample	Number of Female SSRI participants	Female %age of SSRI sample	SSRI participants mean age (years)
220	64.90%	76	34.55%	144	65.45%	26.81 (SD+/- 7.68)
Total Number of participants taking atypical medications.	**%age of total sample (339)**	**Number of Male atypical participants**	**Male %age of atypical sample**	**Number of Female atypical participants**	**%age of Female atypical sample**	**Atypical participants mean age (years)**
119	35.10%	34	28.57%	85	71.43%	27.53 (SD+/- 7.82)

Five participants (three from the SSRI class, two from atypical class) listed gender as "not specified". The mean age of the total sample (345 individuals) was 27.11 years (SD+/- 7.71). An independent samples t-test showed age difference between self-identified groups was not significant: $t(337) = .86$, $p = .60$, $d = .10$.

Time on current primary medication was compared between SSRI and atypical classes. 339 participants completed the question (SSRI: 220, atypical: 119). *Table 2* illustrates responses for time taking current antidepressant medication per class.

Table 2: Time taking current antidepressant medication according to class.

Time taking current antidepressant	Less than 6 months	6 months to 1 year	2-3 years	4-5 years	Longer than 5 years	Total no. of participants
SSRI	79	74	33	16	18	220
atypical	31	46	28	11	3	119

Note: Numbers reflect participants belonging to this category.

A Chi-Square test showed time taking antidepressants did not differ significantly between SSRI and atypical groups: $\chi^2 = 10.45$. df = 5, p = 0.63.

Individuals were also asked to rate effectiveness of their primary, current antidepressant: "how good do you feel your current antidepressant is overall at treating your depression?" 339 individuals completed the question (SSRI: 220, atypical 119). In both classes, mean scores indicated overall effectiveness was rated as "good".

Table 3: Shows the breakdown of participant responses and mean scores per category and class.

Table 3: Participant effectiveness rating of current medication according to class.

Participant rating for effectiveness of current antidepressant	Very Good	Good	Barely Acceptable	Poor	Very Poor	Total no. of participants	Total Mean Score
SSRI	35	113	46	17	9	220	2.34 (SD+/- .97)
atypical	21	64	23	6	5	119	2.24 (SD+/- .95)

Note: Numbers reflect participants belonging to this category.

An independent samples t-test showed the mean difference in effectiveness rating between the SSRI and atypical groups was not significant: t (337) = .76, p = .41, d = .12.

Participants were also asked how many antidepressants they had been prescribed before their current medication. 252 participants (74.34%) – 151 from the SSRI group (68.64%) and 91 from the atypical group (76.47%) – out of the 339 total sample completed the question, with 97 (28.61%) skipping the question. *Table 4* shows the breakdown of responses for number of previous antidepressants taken according to class. Total mean score reflects the number of previous antidepressants taken.

Table 4: Responses for number of previous antidepressants taken according to class.

Number of previous antidepressant medications taken	None	1	2	3	4	More than 4.	Total No. of participants	Total Mean Score
SSRI	21	48	37	18	9	18	151	2.00 (SD+/- 1.52)
atypical	3	21	31	10	8	18	91	2.82 (SD+/- 1.61)

Note: Numbers reflect participants belonging to this category.

The mean score for the SSRI class indicated participants had taken three previous medications. The atypical class mean score indicated closer to four previous antidepressants. An independent samples t-test showed the mean difference in previous medications taken between the SSRI and atypical groups was significant: t (250), p = .03, d = .52. A further independent samples t-test showed the difference between scores as significant: t (250) = 4.06, p = .04, d = .52.

To summarise: SSRI and atypical groups did not significantly differ on measures of participant *age, time on current medication or effectiveness ratings, however, the atypical group had taken a higher number of previous antidepressants.*

Side Effect Comparison According to Antidepressant Class (SSRI vs Atypical)

SSRI and atypical classes were compared for their scores on side effects measures. *Table 5* shows mean and standard deviations for SSRI and atypical drug class side effects and medication adherence.

Table 5:
Means and Standard Deviations for SSRI and atypical drug class side effects and medication adherence.

Side Effect	Medication Class	Means	*SD*	*n*
Depression	SSRI	17.58	12.76	220
	Atypical	19.11	12.69	119
Anxiety	SSRI	21.52	15.20	220
	Atypical	22.80	15.73	119
Sleepiness	SSRI	7.17	5.11	220
	Atypical	7.51	5.12	119
Weight Change	SSRI	14.50	3.84	189
	Atypical	13.90	3.42	105
Suicidal Ideation	SSRI	15.35	10.10	220
	Atypical	16.36	9.36	119
Sexual Dysfunction	SSRI	4.87	4.21	220
	Atypical	5.03	4.16	119
Medication Adherence	SSRI	15.03	1.50	194
	Atypical	15.10	1.53	109

Note: *SD* = Standard Deviation. *n* = number of participants.

Results breakdown are as follows:

Depression. On the *Beck Depression Inventory (BDI-1A)* higher scores indicated higher levels of depression. Mean scores for both SSRI (17.58, SD+/- 12.76) and atypical (19.11, SD+/- 12.69) groups indicated only mild depression was present. An independent samples t-test showed no significant difference between depression results of the two classes: $t(337) = 1.06$, $p = .29$, $d = -.12$.

Anxiety. On the *Beck Anxiety Inventory (BAI)* higher scores indicated higher levels of anxiety. Mean scores for anxiety in the SSRI group (21.52, SD+/- 15.20) was indicative of low anxiety, while mean scores in the atypical group (22.8, SD+/- 15.73) indicated moderate anxiety. However an independent t-test showed the difference between anxiety scores was not significant: $t(337) = .73$, $p = .47$, $d = .41$.

Sleepiness. On the *Epworth scale of sleepiness* higher scores indicated a higher chance of dozing off. Mean scores for sleepiness in both the SSRI group (7.17, SD+/- 5.11) and atypical group (7.51, SD+/- 5.12) indicated low incidence of sleepiness. An independent samples t-test showed the difference between the SSRI and atypical class for sleepiness was not significant: $t(337) = .58$, $p = .93$, $d = .07$.

Weight Change. On the *Short Measure of Weight Change (A-SMWC)* higher scores indicated greater incidence of weight change. Mean scores for both the SSRI (14.50, SD+/- 3.84) and atypical (13.90, SD+/- 3.42) groups both indicated low incidence of weight change, with atypical class scoring a lower incidence of weight change side effects. An independent samples t-test showed the difference between SSRI and atypical medication class was significant: $t(292) = 1.35$, $p = .05$, $d = .17$.

Suicidal Ideation. On the *Kessler Psychological Distress Scale (K10)* higher scored indicated a higher incidence and severity of suicidal ideation. Mean scores for both SSRI (15.35, SD+/- 10.10) and atypical (16.36, SD+/- 9.36) groups indicated a 1% chance of attempting suicide (three times standard population risk) classified as medium risk. While the atypical group recorded a higher incidence of suicidal ideation as a side effect, an independent samples t-test showed the difference between the two classes was not significant: $t(337) = 9.07$, $p = .20$, $d = .10$.

Sexual Dysfunction. On the *Psychotropic-Related Sexual Dysfunction Questionnaire* (PRSexDQ-SALSEX) higher scores indicated a higher incidence of sexual dysfunction. The mean score for the SSRI group was 4.87 (SD+/- 4.21) indicating mild sexual dysfunction. The mean score for the atypical group was 5.03 (SD+/- 4.16) indicating moderate sexual dysfunction. An independent samples t-test showed the difference in sexual dysfunction between the SSRI and atypical groups was not significant: $t(337) = .32$, $p = .67$, $d = .04$.

Medication Adherence. A total of 303 participants completed the education adherence question, 36 individuals skipped the question. On the *Medication Adherence Rating Scale (MARS)* higher scores indicated higher levels of medication adherence. Mean scores from both groups indicated "moderate" medication compliance: SSRI (Mean: 15.0, SD+/- 1.50) vs. atypical (Mean: 15.1, SD+/- 1.53). An independent t-test showed the difference between SSRI and atypical class for medication compliance was not significant: $t(301) = .41$, $p = .68$, $d = .05$.

The only significant reduction in side effects for atypical drugs compared with SSRIs was lower incidence of weight change. Results suggest atypical drugs may have weight change sparing compared with SSRIs. However, overall findings did not support reduced atypical side effects.

Side effect Comparison Between Newer and Older SSRI and Atypical Antidepressant Drugs

Side effect scores from six antidepressant medications from the SSRI and atypical class were compared (Citalopram, Escitalopram, Fluoxetine, Venlafaxine, Desvenlafaxine and Bupropion). Table 6 illustrates a breakdown of means and standard deviation scores for specific drugs according to side effects.

Table 6: Number of participants, Means and Standard deviation scores for specific antidepressant drugs according to side effects.

Side Effect	Antidepressant Drug and Class	Means	*SD*	*n*
Depression	Citalopram (SSRI)	16.93	13.13	46
	Escitalopram (SSRI)	16.48	12.28	52
	Fluoxetine (SSRI)	20.65	14.04	46
	Venlafaxine (atypical)	19.41	13.47	27
	Desvenlafaxine (atypical)	15.25	13.25	12
	Bupropion (atypical)	18.41	12.14	35
Anxiety	Citalopram (SSRI)	20.52	15.90	46
	Escitalopram (SSRI)	21.13	16.60	52
	Fluoxetine (SSRI)	20.67	12.83	46
	Venlafaxine (atypical)	20.48	14.34	27
	Desvenlafaxine (atypical)	20.08	15.13	12
	Bupropion (atypical)	20.49	13.77	35
Sexual Dysfunction	Citalopram (SSRI)	4.48	4.05	46
	Escitalopram (SSRI)	4.60	4.12	52
	Fluoxetine (SSRI)	5.61	4.46	46
	Venlafaxine (atypical)	5.33	4.34	27
	Desvenlafaxine (atypical)	4.83	3.64	12
	Bupropion (atypical)	4.80	4.22	35
Sleepiness	Citalopram (SSRI)	6.52	5.36	46
	Escitalopram (SSRI)	6.84	5.64	52
	Fluoxetine (SSRI)	7.70	4.14	46
	Venlafaxine (atypical)	7.26	5.90	27
	Desvenlafaxine (atypical)	9.42	6.01	12
	Bupropion (atypical)	7.40	4.05	35
Weight Change	Citalopram (SSRI)	14.69	4.22	39
	Escitalopram (SSRI)	14.68	3.88	41
	Fluoxetine (SSRI)	14.45	3.42	44
	Venlafaxine (atypical)	13.77	4.02	22
	Desvenlafaxine (atypical)	14.91	3.11	11
	Bupropion (atypical)	14.03	3.28	32
Suicidal Ideation	Citalopram (SSRI)	14.59	9.85	46
	Escitalopram (SSRI)	12.92	10.40	52
	Fluoxetine (SSRI)	18.72	9.80	46
	Venlafaxine (atypical)	14.15	8.96	27
	Desvenlafaxine (atypical)	16.08	9.85	12
	Bupropion (atypical)	16.86	8.92	35
Medication Adherence	Citalopram (SSRI)	15.00	1.52	39
	Escitalopram (SSRI)	15.27	1.32	44
	Fluoxetine (SSRI)	15.20	1.50	45
	Venlafaxine (atypical)	14.88	1.73	24
	Desvenlafaxine (atypical)	15.35	1.36	11
	Bupropion (atypical)	15.44	1.32	32

Note: *SD* = Standard Deviation. *n* = number of participants.

A one-way ANOVA was used to examine side effects of the six antidepressants. No significant differences were found between side effects for each of the six drugs: Depression – $F(5, 212) = .99$, $p = .43$; Anxiety – $F(5, 212) = .06$, $p = 1.00$; Sexual Dysfunction – $F(5, 212) = .47$, $p = .80$; Sleepiness – $F(5, 212) = .76$, $p = .58$; Weight Change – $F(5, 183) = .32$, $p = .90$; Suicidal

Ideation – $F(5, 212) = 2.07$, p = .07. Further, no differences were found in medication adherence: MARS – $F(5, 189) = .60$, p = .70. When suicidal ideation was shown to approach significance further analysis was carried out. Post-hoc comparison using Fisher LSD illustrated SI differences at the .05 level of significance for Fluoxetine when compared with Citalopram ($p = .04$) and Escitalopram ($p = .00$) but not for Venlafaxine ($p = .60$), Desvenlafaxine ($p = .31$) or Bupropion ($p = .65$). Results suggested atypical drugs did not have reduced SD as a side effect. Results showed no significant benefits of reduced side effects from any of the six antidepressants over another, despite some being new and some old. Surprisingly, post-hoc tests suggested atypical drugs had increased SI compared to some SSRIs.

Comparison of Participants Receiving Adjunct Medications and Therapy

Within both drug classes (SSRI and atypical) there were individuals taking adjunctive medications. Table 7 shows a total and percentage summary of individuals taking adjunctive medications by name of adjunctive drug and primary medication class.

Table 7:
Total and percentage summary of individuals taking adjunctive medications by adjunct drug and primary medication class.

Adjunct medication name	Number of SSRI group participants taking medication	% of total SSRI group taking adjunct medication	Number of atypical group participants taking medication	% of total atypical group taking adjunct medication
Mood Stabilizer	10	4.55%	9	7.56%
Buspirone	3	1.36%	5	4.20%
Mirtazapine	0	0%	1	0%
Bupropion	4	1.82%	4	3.36%
Benzodiazepine	28	12.73%	14	11.76%
Antipsychotic	7	3.18%	1	0.84%
Multiple Adjunct	8	3.64%	12	10.08%
Agomelatine	0	0%	1	0.84%
Total	60	27.27%	47	39.50%

Note: The category 'Multiple Adjunct' referred to individuals taking more than 1 adjunctive medication, for example: Mirtazapine and Benzodiazepine.

A greater percentage of individuals within the atypical class **(nearly 40%)** were taking medication to supplement their primary drug compared to the SSRI class (27%). A Chi-Square test showed the difference as significant: $\chi^2 = 17.35$, df = 8, $p = .03$. Results showed the atypical antidepressants were more strongly associated with adjunct medications. Within both groups a Benzodiazepine adjunct was the most common. Of note is that a higher percentage of multiple adjuncts medications were seen in the atypical group compared to SSRI.

Within both drug classes there were individuals receiving adjunctive therapy alongside antidepressants. Table 8 shows total and percentage summary of individuals receiving adjunctive therapy by adjunctive therapy type and primary medication class.

Table 8:
Total and percentage summary of individuals receiving adjunctive therapy by type of adjunct therapy and primary medication class.

Type of adjunct therapy	Number of SSRI group participants receiving therapy	% of total SSRI group receiving therapy	Number of atypical group participants receiving therapy	% of total atypical group receiving therapy
CBT	72	32.73%	36	30.25%
Light Therapy	3	1.36%	2	1.68%
Dialectical Behaviour Therapy	1	0.45%	2	1.68%
Talk Therapy of Counselling	6	2.73%	5	4.20%
Psychotherapy	0	0%	5	4.20%
Multiple Adjunct	7	3.18%	4	3.36%
Total	89	40.45%	54	45.38%

Note: The category 'Multiple Adjunct' referred to individuals participating in more than 1 adjunctive therapy, for example: CBT and Light Therapy.

The percentage of individuals receiving adjunct therapy was greater in the atypical class (45.38%) compared with the SSRI class (40.45%). A Chi-Square test showed the difference as not significant: $\chi^2 = 11.61$, df = 6, $p = .07$, the result however, approaching significance.

CBT was the most popular adjunct therapy within both groups. Results suggested requirements for adjunct therapy were comparable in SSRI and atypical antidepressants.

Several participants (n=55) were taking both adjunct medication and receiving adjunct therapy. *Table 9* illustrates a summary of individuals taking both adjunctive medications and adjunctive therapy according to medication/therapy combination and primary medication class.

Table 9:
Summary of individuals taking both adjunctive medications and adjunctive therapy summarised by medication/therapy combination and primary medication class.

Description of Adjunct medication and therapy.	Number of SSRI group participants undergoing adjunct therapy and taking adjunct medication	% of total SSRI group participants undergoing adjunct therapy and taking adjunct medication	Number of atypical group participants undergoing adjunct therapy and taking adjunct medication	% of total atypical group participants undergoing adjunct therapy and taking adjunct medication
Benzodiazepine + Psychotherapy	1	0.45%	1	0.84%
Buspirone + CBT	2	0.91%	2	1.68%
Mirtazapine + CBT	0	0%	2	1.68%
Wellbutrin + CBT	3	1.36%	0	0%
Benzodiazepine + CBT	12	5.45%	5	4.20%
Benzodiazepine & Mood Stabiliser + CBT & Light Therapy	1	0.45%	2	1.68%
CBT + Mood Stabiliser	5	2.27%	2	1.68%
Agomelatine + Psychotherapy	0	0%	1	0.84%
Benzodiazepine + DBT, CBT & Psychotherapy	3	1.36%	1	0.84%
Benzodiazepine & Mood Stabiliser + CBT	1	0.45%	4	3.36%
Benzodiazepine + Light Therapy	1	0.45%	1	0.84%
Benzodiazepine & Buspirone + Light Therapy	0	0%	1	0.84%
Benzodiazepine + Talk Therapy/Counselling	1	0.45%	0	0%

Wellbutrin + Talk Therapy/Counselling	0	0%	1	0.84%
Benzodiazepine & Stimulant (Adderall) + CBT	0	0%	1	0.84%
Buspirone + DBT	1	0.45%	0	0%
Total	31	14.09%	24	20.17%

Note: CBT = Cognitive Behavioural Therapy. DBT = Dialectical Behavioural Therapy.

Results varied in terms of primary and secondary medication and therapies combinations. Combined CBT and Benzodiazepine therapy was the most common adjunct in both SSRI and atypical groups. A higher percentage of individuals within the atypical group (20.17%) were receiving both adjunct medication and adjunct therapy compared to the SSRI group (14.09%). A Chi Square test showed the difference as not significant: $\chi^2 = 17.70$, df = 15, $p = .28$. Findings suggest atypical drugs do not have reduced requirements for combined adjunctive medications and therapy compared to SSRIs.

Antidepressant Side Effects Overall Contribution to Depression

A final question asked individuals to rate the extent participants felt side effects of current antidepressant medication contributed to overall feelings of depression. 290 individuals completed the question from the total sample of 339 (85.55%): 185 from the SSRI group (84.09%) (Mean: 2.83, SD +/- 1.24) and 105 from the atypical group (88.24%) (Mean: 2.63, SD +/- 1.29), with 49 participants (14.45%) skipping the question. Mean scores from both the SSRI and atypical groups indicated participants neither agreed nor disagreed with the statement. Results are summarised below in Table 10 by question choice and medication class.

Table 10:
Summary of responses for 'I feel the side effects caused by my medication significantly contributes to my overall feelings of depression'.

Question: I feel the side effects caused by my medication significantly contribute to my overall feelings of depression	Number of SSRI group participants responses	Number of atypical group participants responses
Totally agree	7	8
Somewhat agree	28	15
Neither agree nor disagree	33	20
Somewhat disagree	38	27
Totally disagree	79	35
Total	185	105

An independent samples t-tests showed no significant differences in ratings between the SSRI and atypical groups: $t(288)$, $p = .61$, $d = .16$. Results may suggest side effects which contribute to depression are not sufficiently reduced in atypical medications compared to SSRIs, with both groups reporting neutral responses. Results may be reflective of previous measures highlighting only weight change as a benefit for atypical antidepressants.

Discussion

This section breaks down the key findings of this research as related to side effect differences between newer and older antidepressant medications.

Depression

No differences were found in side effects of depression when comparing SSRI and atypical medication groups. Both SSRI and atypical medications groups reported only "mild" depression. A possible explanation may be that most participants had taken medication for over 6 months, allowing for side effect adjustment. However, participants rated an average of "neither agree nor disagree" on a measure of side effects contribution to depression, suggesting side effects were still bothersome. Adjunctive medications and adjunctive therapies which may reduce side effects were also common in both groups. Results failed to suggest atypical antidepressants carry reduced depression side effects vs SSRI medications.

Anxiety

For anxiety side effects, results showed no significant differences between SSRI and atypical classes, despite the SSRI class scoring anxiety as "low" and the atypical class "moderate". Findings suggested atypical agents did not possess reduced anxiety side effects from SSRIs. Results may be reflective of participants from both groups having high adjunct medication rates, most which were anti-anxiety treatments (benzodiazepines).

Sexual Dysfunction

Results indicated no difference in sexual dysfunction side effects between SSRI and atypical classes, with "mild" SD present in the SSRI group and "moderate" SD in the atypical group. A possible explanation is that only 5.88% of the atypical sample was taking the atypical medication Mirtazapine and 0% Moclobermide; antidepressants suggested as having the least SD (Montejo & Rico-Villademoros, 2008). However, Foley, DeSanty & Kast (2006) found the atypical Bupropion improved sexual function. As 29.41% of the atypical sample was taking Bupropion, the absence of SD sparing results is unexpected. Notably, high numbers of both SSRI and atypical groups were taking adjunctive medications which actively minimise SD side effects. Also, of note is that within the SSRI group, 21.82% of participants were taking Citalopram, 22.73% Fluoxetine and Paroxetine 8.18%; antidepressants shown to be high in SD (Montejo et al. 2001). Montejo et al. (2001) found the atypical drug Venlafaxine had a higher incidence of SD compared with same-class drugs, and even some SSRIs (Sertraline, Fluvoxamine). As 22.69% of the atypical sample were taking Venlafaxine, this may have influenced atypical results. Results failed to demonstrate SD sparing for atypical antidepressants, despite high numbers of the SSRI group taking medications most strongly associated with SD. Findings suggest atypical drugs by default may not carry reduced SD effects over SSRIs.

Sleepiness

No significant differences were found between SSRI and atypical groups, both reporting low sleepiness side effects.

Weight Change

Weight change was the only significant factor to differ between SSRI, and atypical class medication groups. While both groups reported low incidence of weight changes, atypical drugs showed significantly less change compared to SSRIs. This was unexpected, as the atypical drug Mirtazapine is well-evidenced as an appetite stimulant (Stahl, 2011), and the atypical Bupropion shown to be an appetite suppressor (Stahl, 2011). SSRIs were shown to be relatively weight neutral by comparison, with Paroxetine the exception (Stahl, 2011). However, only 8.18% of the SSRI sample was taking Paroxetine. Results may be due to the atypical sample having a low number of participants taking weight-gain associated medications such as Mirtazapine (5.88%), but a relatively high number taking weight-loss associated medications such as Bupropion (29.41%). Kivimäki et al. (2010) discuss how weight loss in antidepressant therapy is commonly framed positively by patients and discussed as a desirable side effect. Serretti & Mandelli (2010) suggest individuals prefer to attribute weight loss to personal effort as opposed to medication effects, highlighting potential self-report anomalies within the atypical sample. A further possibility is that the SMWC scale, which was purposely developed for this study may have influenced findings. While the scale evidenced satisfactory reliability in several small samples, reliability may be increased by further clinical and empirical testing, particularly within additional large real-world samples.

Suicidal Ideation

Findings showed no significant differences between the SSRI and atypical classes for SI, with both showing medium risk.

Summary

In summary, side effect comparison of atypical vs. SSRI class found reduced incidence of weight change as the only reduced side effect benefit of atypical medications. Characteristics of the sample and scale measures may not be discounted as influencing factors.

Medication Adherence

Some studies suggest atypical-class antidepressants have greater medication adherence compared with SSRIs due to their predicted reduced side effect profiles. Results found medication adherence did not significantly differ between atypical and SSRI classes. Neither group scored higher than "moderate" medication adherence, suggesting over 300 participants had difficulty adhering to their antidepressant. Explanations for results may be related to novel study design – with most participants taking current medication for at least 6 months – as well as having taken at least two previous medications. This may have allowed participants to find their "comfort level" through trial-and-error antidepressant switching, while adjusting to side effects and finding compatible adjunct treatments. While overall antidepressant effectiveness was rated as "good", adjunctive treatment and therapy was common in both classes. As depression was found to be "mild", the purpose of additional treatments may have been to counter side effects of primary medication, for example "moderate" anxiety in the atypical group. This is further supported by both groups' neutral rating of medication side effects contribution to depression with the response of "neither agree nor disagree", as well as SI scores for both groups indicating "medium" suicide risk.

Newer Antidepressant Drugs Within Both Classes

It may be expected that within both SSRI and atypical classes, newer antidepressant drugs have reduced side effect profiles compared with older antidepressants. Some studies highlight Bupropion, Venlafaxine and Escitalopram as particularly side effect sparing (See Cipriani et al. 2009; Sanchez et al. 2003). However, side effect comparison of Citalopram (old-SSRI; 1989), Escitalopram (new-SSRI; 2003), Fluoxetine (old-SSRI; 1987), Venlafaxine (old-atypical; 1993), Desvenlafaxine (new-atypical; 2007) and Bupropion (new-atypical; 2000) did not support this, with no significant differences in side effects of depression, anxiety, sexual dysfunction, sleepiness, weight change, suicidal ideation or medication adherence found.

Some studies (Cipriani et al. 2009; Einarson, 2004) have claimed Escitalopram (2003) presents reduced anxiety/stimulation and insomnia compared with Citalopram (1989). However, in direct comparison of old vs new same-class agents, Escitalopram vs Citalopram showed no significant differences on scores of anxiety and sleepiness. Similarly, Desvenlafaxine (2007) has been upheld as carrying reduced weight change and anxiety over Venlafaxine (1993) (Reddy et al. 2010). However, no side effect differences were found. Others have asserted that Bupropion (2000) has reduced side effects of weight gain, daytime sleepiness, and SD (Foley, DeSanty & Kast, 2006). However, Weight change, sleepiness and SD scores for Bupropion did not differ from that of other antidepressants.

While suicidal ideation did not differ significantly between medications, scores approached significance. The older SSRI Fluoxetine (1987) rated highest for suicidal ideation. Fluoxetine was followed by the atypical Bupropion (2000), atypical Desvenlafaxine, Citalopram (1989), Venlafaxine (1993) then Escitalopram (2003). Post-hoc analysis of SI scores illustrated significant differences for Fluoxetine against the two other SSRIs, but not the three atypical drugs. Findings position that atypical drugs do not have decreased SI, tentatively suggesting some atypical agents may increase SI risk compared with some SSRIs.

Overall results may be reflective of the sample, SI was previously shown as medium within both atypical and SSRIs, while other side effects were low (except for "moderate" anxiety in the atypical sample). Effects of adjunctive medication and therapy may have influenced tolerability reporting across all six antidepressants. For example, participants taking Escitalopram with the adjunctive anxiolytic medication Buspirone may rate anxiety as lower than participants taking Escitalopram with Mirtazapine, due to the anxiolytic effect of Buspirone (See Stahl, 2011). While several individuals were taking only primary medication, most participants were receiving adjunctive therapy, medication or both; with medication adherence also not significantly different between SSRI and atypical antidepressant classes.

Adjunctive Treatments

It could be expected participants taking the older class of medications (SSRI) would have a greater need for treatment with adjunctive medications, adjunctive therapies, or both. Studies suggest adjunctive medications are primarily utilised to manage side effects from SSRI drugs (See Atmaka et al. 2011). Other scholars suggest reduced side effects of atypical antidepressants may minimise requirements for adjunctive treatments (See Wade et al. 2011). Surprisingly, results found a significantly higher percentage of the atypical sample were taking adjunct medication compared with the SSRI group.

A benzodiazepine adjunct (an anxiolytic) was the most popular in both groups. Anxiety scores of "moderate" for the atypical group and "mild" for SSRIs may suggest anxiety as either a comorbid condition or a side effect of medications. Further, low sleepiness scores for both classes may highlight on-going sleep problems. Fava et al. (2006) has discussed sleepiness as a SSRI side effect which does not resolve in long-term treatment. Benzodiazepine therapy is common in initial antidepressant treatment to minimise "start-up" effects of anxiety and insomnia (Stahl, 2011), however participants had largely been taking primary medication for over 6 months, possibly highlighting on-going side effects in both classes.

Findings may be for several reasons. Participants taking atypical medication may have more severe depression that the SSRI group, suggesting a higher need for adjuncts. While depression ratings were "mild", this may only reflect relative success of current medication regime, not baseline diagnosis. Members of the atypical group may also have previously taken SSRI medication, finding inadequate efficacy or tolerability; this thinking is supported by the atypical group having a significantly higher total of previous antidepressant medications compared with the SSRI group. NICE (Clark, 2011) guidelines dictating first treatment with an SSRI followed by an atypical drug further support this. NICE also asserts adjunctive medication may be combined with atypical drugs in cases of treatment resistant depression (Middleton et al. 2005).

Comparison of SSRI vs. atypical participants receiving adjunct therapy showed no differences between groups; however, differences approached significance, with a greater percentage of atypical participants receiving adjunct therapy. Of note is that over a third of both samples were receiving CBT, where other therapy totals did not exceed 5%. Some evidence suggests adjunctive CBT is associated more strongly with SSRIs (See Semple & Smyth, 2013; Stahl, 2011). However, findings failed to support this, indicating atypical antidepressants did not have reduced adjunctive therapy requirements. Of note is that results approached significance, with higher rates of adjunct therapy in atypical participants. By explanation, members of the atypical group may have initially been receiving combination SSRI and therapy treatment, choosing to continue therapy when switching to an atypical antidepressant. The atypical group rating "moderate" and the SSRI group "low" for anxiety is also a possible consideration.

When individuals receiving both adjunct medication and therapy were compared by class no differences were found. Results indicated atypical antidepressants did not have reduced incidences of combined adjunct medication and therapy. Findings may indicate that primary medication side effects are on-going, requiring additional treatments; however, factors such as anxiety and sleeplessness could equally be characteristic of individual illness presentation. Results failed to support notions that participants taking older SSRI-class antidepressants have a de facto greater need for treatment with adjunctive medications, adjunctive therapies, or both.

Limitations

A general point regarding use of self-report measures is that participant bias is difficult to control for. Efforts were made to mitigate bias by including reverse-scoring within scales (A-SMWC, BDI, and BAI). However, participant bias may be an inherent presence for self-report measures that can influence inflated (or reduced) reporting of side effects. A notable observation is that within both medication classes, adherence was found to be "moderate". This may have influenced side effect reporting, with perfect medication compliance frequently highlighted as key to achieving antidepressant tolerability and efficacy (Stahl, 2011). The data for this study is also historic, gathered in 2013. However, despite any limitations, this study presents interesting findings that are important to document in the immediate 2020 climate of interest surrounding real world sampling studies. Research contributes to a recently emerging body of literature examining antidepressant tolerability and side effect comparison in random samples independent from clinical trials.

Conclusion

This study concludes that, in a comparison of +300 individuals taking a variety of different antidepressant mediations – for atypical vs. SSRI antidepressant side effects, the only clear reduced side effect of atypical antidepressants compared with SSRIs was a lack of weight change. No atypical drug benefits were found for side effects of depression, anxiety, sleepiness, suicidal ideation, sexual dysfunction, and medication adherence over SSRIs. On comparing side effects of six new and old atypical and SSRI antidepressants, no reduced side effects or medication adherence was found for newer drugs. In examining adjunctive medications and therapy, atypical antidepressants were linked to greater need for adjunct medication, a finding which may be surprising, and resists some claims of superior tolerability. Adjunct therapy rates were found not to differ significantly from atypical and SSRI groups, although this approached significance for increased atypical adjuncts, suggesting a lack of atypical superiority and possible shortcomings of ongoing atypical treatment. Measures of combined adjunct medication and therapy found no significant differences between atypical and SSRI groups. While weight change side effects were found to be improved for newer medications, it was discussed how this may be reflective of scoring measures used. Aside from weight change, this study concluded no benefits of reduced side effects could be found for newer antidepressants when examining a random sample of individuals taking a variety of common antidepressant medications. This study provides evidence to support arguments that the reduced side effects and improved tolerability often claimed as characteristic of newer antidepressants may be overstated when exploring non-clinical "random" samples (Healy, 2018). As many emerging studies now uphold, examinations of "real-world data" provides a valuable avenue of exploration to clarify how drug side effects manifest and present in everyday life, as opposed to the controlled environments of clinical trial settings. The "real world" is, after all, the natural environment within which most humans taking antidepressants exist day-to-day.

Note of Interest

The research paper documents primary data from a study conducted for my past MSc dissertation at Brunel University London (2013). Primary research was conducted, and data collected for this research purpose.

Declarations

No funding was received, or conflict of interest exists for this research.

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Efficacy of Behaviour Modification Therapy on the Internet Gaming Disorder of the Selected Filipino High School Students

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Abstract

The excessive use of Internet in online gaming afflicted several adolescent students in such a way that they found it hard to control their gaming behaviour anymore. There were a lot of studies done as to the causes of this modern-day addiction but there was scarcity on the therapy program that will address the problematic thoughts and feelings associated with this behaviour. This study aimed to devise a Behaviour Modification Therapy (BMT) program that will reduce the frequency, intensity, and duration of their online gaming. In developing the therapy, a mixed method of quantitative and qualitative research using sequential explanatory design was utilized. This was composed of collection and analysis of quantitative data through pre-test on Internet Gaming Disorder (IGD) 20-Test; compilation of qualitative data through related literatures and studies, Focused Group Discussions (FGD) and Training Needs Analysis (TNA). The data were used as bases in designing the eight (8) sessions of BMT. The respondents included in this research were the 11-19 years old public high school students who experienced excessive internet gaming. After the therapy sessions the post test on the (IGD) 20-Test was administered and the *t*-Test was used to find the difference. The Behaviour Modification Therapy was helpful and efficacious in reducing the IGD symptoms of the respondents. This can be adapted as psychotherapy for IGD.

Keywords: behaviour modification therapy, internet gaming disorder, adolescent students

Introduction

The excessive use of the Internet in online gaming is an addictive behaviour that afflicts adolescent students in such a way that they find it hard to stop playing virtual games. Online games were bestsellers for the young people. In the Philippines, there were 18% males and 10% females from the bracket of 10-20 years old who were virtual gamers in 2017 (Sanchez, 2019). There were different kinds of online games which drew curiosity among them that they would like to try it once or twice, until it became their source of leisure, then it became an excessive habit. They wanted to control their gaming behaviour, but they cannot do it by themselves. This negatively impacted their health, way of thinking, social life, family relationships, academic performance and state of wellbeing.

This type of modern day addiction was termed as "Internet Gaming Disorder" (IGD) by the Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM 5) (American Psychiatric Association, 2013) and described in the 11th Revision of the International Classification of Diseases (ICD-11) (World Health Organization, 2018) as a "pattern of gaming behaviour (digital-gaming or video-gaming) characterized by impaired control over gaming, increasing priority given to gaming over other activities to the extent that gaming takes precedence over other interests and daily activities, and continuation or escalation of gaming despite the occurrence of negative consequences".

DSM 5 (American Psychiatric Association, 2013) described the IGD as persistent and recurrent use of Internet to engage in games alone or with other players which leads to clinical impairment or distress. IGD is considered clinically significant if there will be the presence of five or more symptoms in a 12-month period. The nine (9) IGD symptoms can be: 1) preoccupation with Internet Games; 2) withdrawal symptoms like irritability, anxiety and sadness; 3) tolerance or the need to increase time in gaming; 4) unsuccessful attempt to stop gaming; 5) loss of interest in other activities; 6) psychosocial problems due to excessive gaming; 7) deceived family members, therapist or others on the amount of time in gaming; 8) use of Internet gaming to escape or relieve negative mood; and 9) jeopardized or lost significant relationship, educational, job or career opportunities because of online gaming. The severity of Internet Gaming Disorder can be classified as mild, moderate, or severe. The online gamers, who have greater problems in relationships, school performances or career or opportunities because of longer hours spent on virtual gaming, were the ones considered to have the severe level of IGD.

According to King and Delfabbro (2016), the population considered to have the higher risk of developing Internet gaming disorder (IGD) are those in the adolescent stage. Those who spent more than 30 hours per week in playing online games were included to those who have maladaptive behaviour described in IGD. The students in the high school level were considered in the adolescent stage. Allen and Waterman (2019) described the stages of adolescence as early adolescence (ages 10 to 13); middle adolescence (ages 14 to 17); and late adolescents (ages 18 to 21). Cochiti and Cowen (2002) cited that adolescence had been characterized as a period of "storm and stress" (Hall, 1904) wherein at this stage, adolescents experienced mood disruptions, risk behaviours, and conflict with parents (Arnett, 1999); and this particular span in developmental stages generated more turmoil than either childhood or adulthood (Resnick et al., 1997). The high school students had conflict with parents especially when they were reprimanded about their excessive online gaming which was considered a risky behaviour. As adolescents, they would like to explore and experience new things for themselves. They were focused more on about themselves and what they wanted. They did not consider the

consequences that they may suffer after long hours of online gaming. Watson (2013) stated that the use of Internet in online gaming has the potential to be addicting to number of players especially the adolescents who were vulnerable. The adolescents' vulnerability to addiction was due to their developing nature of the brain. Thus, at this developing stage, they still needed the guidance from their parents. If they would not heed to the guidance of their parents and other stakeholders to adhere to a program that may help them in processing their thoughts and modifying their behavior, then the intervention would not be feasible.

Pawlikowski et al. (2018) mentioned that there were adolescents who were very shy in the real world and found the virtual world as the avenue in expressing the wild side of their personality wherein they could be confident especially if they gained high scores and had the approval of the online friends. Anderson et al. (2016) noticed that cyber gamers were more willing to create cyber personality to reach out to other virtual characters in the computer-generated world.

Previous researchers elaborated that when the virtual gamers experience boredom and overwhelming problems, they used online gaming as a mood modification strategy and virtual escape. Cross et al. (2016) revealed that they play virtual games to escape from negative feelings and the cycle of escapism turned to become obsessive passion. Those with IGD showed deficits in making decisions and tend to search for immediate gratification or reward (Seok & Sohn, 2018; Wang et al., 2017). This caused troubles in their cognition and psychological distress. Adolescents with IGD have a distinctive set of maladaptive beliefs and these maladaptive beliefs include the adherence to inflexible and maladaptive rules about behaviours during online gaming; positive expectation about the sure reward that they will receive from winning or levelling up in the game; recognition as best online players to gain social acceptance; and over-confidence to online gaming as an instrument to satisfy their need for self-esteem (King & Delfabbro, 2016).

The persistent cyber gaming activities had negative health consequences to the players. Rehbein et al. (2015) reported that students with IGD complained about lack of sleep and other sleep problems more often; they usually spent a lot of time gaming that they already forgot to eat (Young, 2009); and had decreased auditory and visual and functioning (Kuss, et al., 2018). They cannot control their behaviour because according to Kuss and Lopez (2016) gaming fanatics have poorer emotion regulation and reduced response-inhibition because their cognitive control and working memory had decreased its capacity.

Kim et al. (2017) pointed out that what leads to the impairment particularly of addiction disorders were what feed the adaptive behaviour. Orbatu et al. (2019) pointed out that internet gaming disorder can be handled within the framework of a behavioural dependency. The cyber-formulated rewards of online games caused a malfunction in the normal reward circuits of the brain. Lim, et al. (2016) confirmed that IGD patients had more symptoms of higher levels of distress, higher degrees of impulsiveness, anger or aggression, depression and anxiety, impaired response inhibition and poorer quality of life. The program of the games was problematic and chaotic that brought disturbance to the mind of the adolescents because it deals more on horror and violence. Teigland and Power (2013) stressed out if the player was already aggressive and was exposed also in an aggressive environment and violent games, the aggressive temperament may level up.

When they tried to lessen the frequency and intensity of their gaming, they experienced the negative emotional impacts of withdrawal. They felt more anxious about the game, sad when not gaming and became aggressive to people around them. The negative impact of IGD on

their emotional state created problems and conflicts. Kiraly et al. (2015) stated that those who usually spend a lot of hours playing online game did not have interest in wholesome activities and neglected their responsibilities to their family, their studies and had frequent disagreements with the family members and friends. This situation led to the poor academic performance, inactive social life, and dissatisfaction on one's well- being (Wallace, 2014). As explained by Weinstein (2017), those with IGD experienced withdrawal symptoms and tolerance similar with substance use addictions. Griffiths (2014) observed that addictions share more on similarities. The sameness of their actions can be in mood, tolerance, modification, conflict, salience, withdrawal symptoms and relapse.

The increasing number of adolescents afflicted by Internet Gaming Disorder was of great concern. These youth needed assistance to help them change their excessive online gaming. The psychotherapy that could address their problematic thoughts and feelings associated with their excessive virtual gaming could be a great support for them. Hence, the main purpose of this research was to develop and implement a Behaviour Modification Therapy (BMT) program that would reduce the frequency, intensity, duration, and symptoms of their online gaming.

That Behaviour Modification Therapy (BMT) developed in this research was anchored on the Cognitive Behaviour Therapy (CBT) principles and techniques of Meichenbaum's Cognitive Behavior Therapy (CBT). Fernandes and Sadhana (2016) confirmed the effectiveness of CBT in treating several behavioural and emotional problems and it was affirmed by many therapists. CBT was effective in treating individuals who acquired psychological distress from virtual gaming addiction (Kuss & Lopez-Fernandez, 2016; Lindenberg, et al., 2017; Vasiliu &Vasile, 2017). CBT treatment offers corrective measures in cognitive processing, identifying, and correcting irrational thoughts to a more rational one. The experiences of the adolescents on their excessive virtual gaming needed a supportive intervention. Pearcy et al. (2016) stated that studies and interventions for virtual gaming were very relevant and timely for this case. Woog (2016) recommended the treatment intervention focusing on behavioural management method which involved the gradual decrease in time spent in virtual gaming. The facilitation of BMT techniques could promote productive activities; improvement on the school performance; harmonious relationship with the family and the community; and enhancement of the well-being of the participants. Figure 1 presents the conceptual design of the research.

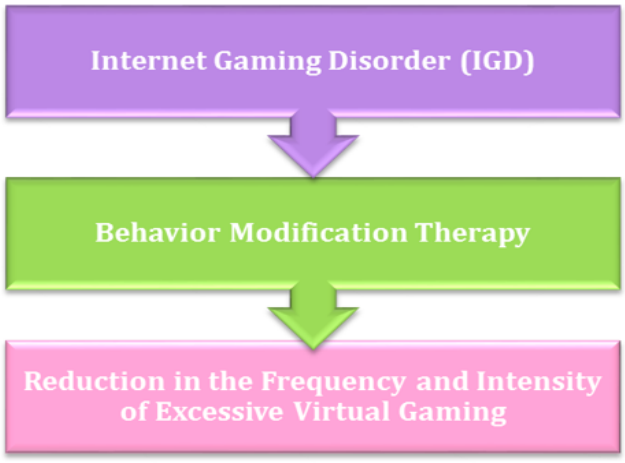

Figure 1: Research Conceptual Framework

The figure showed the conceptualization of the experiences of the respondents in terms of Internet Gaming Disorder (IGD) that according to Beck sprung out from their negative and irrational thought processes (Corey, 2013). This also illustrated the Behaviour Modification Therapy (BMT) designed for the cognitive restructuring, proper emotion handling and modification strategies for the respondents. There were a lot of studies done as to the causes of Internet Gaming Disorder but there was scarcity on the therapy program for high school students that will address their problematic thoughts and feelings associated with this excessive online gaming. This study followed the protocols in devising and implementing the BMT program. This could serve as a model in developing a group therapy for the participants with IGD. The BMT could reduce the IGD symptoms of the participants.

There were two most important objectives of this research. The first objective was to reduce the frequency and intensity of excessive online gaming of the respondents and the second objective was to develop and implement a Behaviour Modification Therapy based on the result of the IGD-20 Test, Thematic Analysis from Literatures and Studies, FGD and the Training Needs Analysis (TNA).

The main problem of this study was on the development and implementation of Behaviour Modification Therapy after the assessment of the Internet Gaming Disorder symptoms of the participants.

The following hypothesis was tested at 0.05 alpha level of significance.

H1. There is a significant difference between the pre-test and post-test result on the Internet Gaming Disorder (IGD-20 Test) of the experimental group after the implementation of the Behaviour Modification Therapy program.

To answer the main problem, the following five questions were posed in this study. First, what is the pre-test mean score and standard deviation value of the experimental group according to the Internet Gaming Disorder (IGD-20 Test)? Second, what are the components in the development of Behaviour Modification Therapy (BMT) on the Internet Gaming Disorder of the selected students in the public schools through the: a) Predominant themes from Related Literature and Studies; b) FGD; and c) TNA, conducted to the participants? Third, what is the post-test mean score and standard deviation value of the experimental group according to the Internet Gaming Disorder (IGD-20 Test)? Fourth, is there a significant difference between the pre-test and post-test mean result on the Internet Gaming Disorder (IGD-20 Test) of the experimental group? Fifth, what is the extent of the efficacy of the Behaviour Modification Therapy (BMT) in reducing the excessive online gaming of the selected high school students?

The collection of the necessary data based from the questions posited above was anchored to the Cognitive-Behavioural orientation. Grohol (2019) explained that the Cognitive-Behavioural Theory emphasized the cognitions or thoughts a person had. This showed how people developed and how they got a psychological disorder; such was the case of those with IGD. The assessment of Internet Gaming Disorder symptoms through the Internet Gaming Disorder (IGD-20 Test) provided the quantitative data necessary for the numeric configuration of the IGD experiences of the respondents. The qualitative data from the Related Literature and Studies; FGD conducted to the participants; and TNA led to the more comprehensive understanding of what the participants have gone through having IGD. These data gathered and analysed were instrumental in developing the Behaviour Modification Therapy (BMT).

The Cognitive behaviourists generally believed in the role of social learning in childhood and adolescent development, and the ideas of modelling and reinforcement (Grohol, 2019).

Methodology

This study utilized a mixed method of quantitative and qualitative research using sequential explanatory design. The IGD-20 Test was used in collecting the quantitative data while the related literatures and studies, FGD and TNA were used in gathering the qualitative data.
The predominant factors from IGD-20 Test and the consolidated qualitative themes were used in developing the Behaviour Modification Therapy sessions.

Participants

The purposive sampling technique was employed in selecting the participants of this research. The respondents included were the 43 students whose age was from 11-17 years old and from Grade 7 to Grade 12 of public high schools. There were 28 males which was 62.12% and 15 females which was 34.88% of the respondents. 6 or 13.95 % of the participants were 12 years old; 6 or 13.95 % were 13 years old; 6 or 13.95 % were 14 years old; 5 or 11.62 % were 15 years old; 3 or 6.97% were 16 years old; and 10 or 23.25% were 17 years old. There were more participants whose age was 17 years old. This also indicated that the respondents of this study were adolescents.

Instruments of the Study

For Phase 1, the Internet Gaming Disorder (IGD)-20 Test was used in the study to find out the clinical score of the participants.

The Internet gaming disorder test (IGD-20 Test). The IGD-20 Test was the first psychometric tool that became standardized according to the nine Internet Gaming Disorder (IGD) criteria in assessing Internet Gaming Disorder (IGD). The psychometric properties of this research included the validity which are criterion-related validity and concurrent validity; and the reliability which included the internal consistency. The "the criterion-related validity" was assessed by the association between weekly game play and the IGD-20 Test scores ($rs(1003)=.77$, $p<.001$)." One IGD indicator for excessive online players is when they spend at least 30 hours per week or dedicate their time between 8 to 10 hours or more per day just to be able to play virtually. The "concurrent validity" associated with this was assessed using IGD-20 Test with the nine IGD criteria from the DSM-5 ($rs(1003)=.82$, $p<.001$). There was a strong correlation between the six IGD-20 Test dimensions and the corresponding IGD criteria. For reliability, as measured by the Cronbach's alpha, the "internal consistency" of the IGD-20 Test's was .88 (Pontes et al., 2014). The IGD 20-Test was originally developed by the authors with 1, 003 online gamers as samples from 57 different countries including the Philippines. Those who were diagnosed with IGD were respondents who were 12-20 years old.

The participants shaded the rating scale which was described as strongly disagree (1), disagree (2), either disagree or agree (3), agree (4) and strongly agree (5). The sample IGD-20 Test items were: "I have significantly increased the amount of time I play games over last year; and I tend to get anxious if I cannot play games for any reason." To obtain the total scores of the participants, the 20 items in the test must be summed up and to compute the scores in specific factors, the average of the items should also be calculated specifically those that represent a particular factor. The IGD-20 Test cut-off score is 71 points. The IGD factors were: Salience (Factor 1): items: 1, 7, and 13; Mood Modification (Factor 2): items: 2 Reverse (R) scoring, 8, and 14; Tolerance (Factor 3): items: 3, 9, and 15; Withdrawal Symptoms (Factor 4): items: 4,

10, and 16; Conflict (Factor 5): items: 11, 17, 19 Reverse (R) scoring , and 20; and Relapse (Factor 6): items: 6, 12, and 18.

Focus group discussion guide. For Phase 2 – the FGD guide questions were designed to discuss the experiences of the selected high school students. The 7-item guide questions were validated by experts in psychology before it was facilitated. The questions focused on the virtual games they played, factors in playing online games and the help they need in reducing the frequency and intensity of their virtual gaming.

Training needs analysis. The training needs of the participants which were mentioned from the FGD were coded thematically and ranked according to the priority of the respondents.

Literatures and studies thematic analysis. The related literatures and studies about the virtual gaming of the participants were consolidated, analysed and thematically presented after the application of Deductive Analysis Method for the general IGD themes and the Inductive Analysis Method for the specific codes.

Evaluation of behaviour modification therapy sessions. The BMT sessions were evaluated using the researcher-made evaluation form which were validated by experts in psychology. For every session, they checked the column that was appropriate to their assessment depending on the level of how much the BMT helped them. This was rated as follows: 1= It did not help me. 2= It slightly helped me. 3= It moderately helped me. 4= It helped me. 5= It helped me a lot. The Scale for Interpretation were the following: .05-1.4 = no efficacy, 1.5-2.4 = slight efficacy, 2.5-3.4 = moderate efficacy, 3.5-4.4=efficacious; and 4.5-5.0=very efficacious.

Data Gathering Procedures

This research was approved by the University of Santo Thomas Graduate School Ethics Review Committee. In gathering the research data, requests for permission to conduct the study were given to the Superintendent and the Principals of the different public schools of the Department of Education in Bulacan, Philippines.

The participants were selected according to the recommendations of the guidance counsellors, advisers, and subject teachers. The parents of the selected participants were oriented on the procedures of the research and intervention program and their consent were also solicited.

Before the administration of the IGD-20 Test, the participants were oriented about the test. They were encouraged to honestly answer the test and assured of its confidentiality. They were instructed to read each item carefully and double check and count if they have shaded a total of 20 circles before they return test. Then for Phase 1- The IGD-20 Test was administered. During the submission of the finished test the researcher checked the test to see to it that there were no items left unshaded and that the data needed were complete. The IGD-20 Test scores were computed and interpreted. For Phase 2- Those who have the IGD-20 Test clinical mean score of 71 and above were encouraged to join the FGD.

The quantitative and qualitative data were collected and processed which served as the bases in designing the Behaviour Modification Therapy. Then the BMT was facilitated to the participants. For the Phase 3- After the therapy sessions, the post-test on IGD- 20 Test was administered again and during the submission of the finished test, the researcher once again checked the test to see to it that there were no items left unshaded and the data were complete. The participants also evaluated the BMT.

The possibility of Common Method Variance (CMV) arising from the administration of IGD-20 Test was dismissed ex-ante, by implementing preventative measures at the research design stage and data gathering procedures of this study. Some of the ex-ante procedures implemented to reduce the threat of CMV were applied here. Before the administration of the test, the participants were assured of the confidentiality of the data gathered, that it would be protected and aggregated only by the researcher for research purposes, development, and facilitation of the BMT program. They were encouraged to answer the test honestly and reminded them that there would be no incorrect answers. This was to prevent "the respondent's reluctance to self-disclose and apprehension about being evaluated" (Ardura & Artola, 2020).

The participants were oriented carefully about the IGD-20 Test. Some identified items with word complexity were explained comprehensively. They were instructed to read each item one at a time and double check and count if they have shaded a total of 20 circles before they return test. During the submission of the finished test the researcher checked if there were missing shaded data to be sure of the completeness of the information needed.

Other preventative measures implemented by this study was to have other sources of data. This did not concentrate only to gathering of quantitative data about IGD but also to the collection of qualitative data through Thematic Analysis of Literatures and Studies, facilitation of FGD and doing TNA. This research employed the mixed method of gathering data from the different information sources.

Data Processing

The experiences of the students in terms of IGD-20 Test Symptoms were presented through tables and quantified and analysed using Mean and Standard Deviation. The literatures and studies, FGD and TNA were coded thematically and shown through textual presentation. The difference between the IGD-20 Test pre-test and post-test mean of the experimental group were analysed using the dependent *t*-Test. The evaluation of the BMT was presented in a table and quantified and analysed using the Mean and scale interpretation.

Results and Discussions

Part 1: IGD 20- Test Pre-test Results

This was the pre-test result on Internet Gaming Disorder-20 Test of the participants. This showed the IGD Symptoms, Mean, Interpretation and Standard Deviation. The item number 3 on IGD symptoms had the highest mean of 4.07 which stated as "I have significantly increased the amount of time I play games over last year." On the other hand, the item number 16 had the lowest mean of 3.42 which stated as "I tend to get anxious if I cannot play games for any reason." Both items 3 and 16 were interpreted as "Agree" which meant that the participants confirmed their experiences about these IGD symptoms. The standard deviation is 0.78 and the over-all mean of the respondents is 3.78 with the scale interpretation of agree. This indicated that generally, the respondents experienced the IGD symptoms stated in the test.

Zhang et al. (2016) characterized Internet Gaming Disorder (IGD) as a higher level of desire for virtual gaming. The addiction-related cues induced intensification of desire to play online more in the brain areas involved in motivational and reward processing. Rehbein et al. (2015) reported that the excessive virtual gamers complained about lack of sleep and other sleep problems more. They often crave for virtual gaming and when they play, they consume most of their time on virtual activity. Müller et al. (2014) pointed out that by meeting the measures

of craving, withdrawal indications, tolerance and of report of daily use of the Internet and excessive online times can be characterized addicted.

Part 2a: Thematic Analysis on Qualitative Data

Table 1 presented the themes from the analysis of qualitative data. This showed the consolidated themes about IGD from Literatures and Studies from forty (40) authors within a decade, from 2009 to 2019. The data gathered from the related literatures and studies were analysed applying the Deductive Analysis Method for the general IGD themes and the Inductive Analysis Method for the specific codes. The FGD on factors in playing online games, and Training Needs Analysis (TNA) of the participants was thematically coded as well. The participants mentioned two or more factors in playing online games and training needs.

Consolidated Theme	*Literatures' Theme (LT)*	*Factors (F) in Playing Online Games*	*Training Need Analysis (TNA)*
Significant IGD Data	LT6: Brain Effects of Online Gaming (15 authors) LT2: Excessive Online Gaming and Tolerance (10) LT6: Missing Sleep (1)	F3: Intensity and Preoccupation in Online Gaming and Tolerance (8 participants)	TN8: Resolution of Thought Issues (3 participants) TN1: Reduction of Intensity in Online Gaming (26) TN4: Sleep Regulation (13)
Tolerance in Excessive online Gaming	LT2: Excessive Online Gaming And Tolerance (10)		
Mood Modification through Escapism	LT3: Escapism and Virtual Self Identity (9)	F1: Mood Alteration (26) F7: Escape (7)	TN3: Handling Emotions (16) TN9: Learning Life Lessons (2)
Negative Emotional Impact of IGD Withdrawal	LT5: Withdrawal and Aggression (8)	F6: Difficulty to Stop Online Gaming (5)	
Recurrence of Excessive online Gaming	LT7: Relapse in Playing Online Games (4)	F7: Failure to Stop Online Gaming (4)	TN1: Reduction of Intensity in Online Gaming (26)
Relational Dissonance	LT3: Problems and Conflicts in Social Relationships (10)	F4: Gaming Activity with Peers (7) F6: Alternative Solution (3) F8: Financial Gain (1)	TN2: Conflict Resolution and Management of Responsibilities (23) TN7: Proper Allowance Allocation (3)
Health Issues	LT6: Skipping Meals, Missing Sleep and Health Risks (6)		TN5: Giving Importance to Meals (11) TN6: Reduction of Physical Consequences (4)

Table 1: Consolidated Qualitative Themes

This table showed the consolidated themes on the significant Internet gaming data; tolerance in excessive online gaming; mood modification through escapism; negative emotional impact of IGD withdrawal; recurrence of excessive online gaming; and the relational dissonance. The other related theme was on health issues. This also presented the seven (7) themes analysed from the different authors of literatures and studies; eight (8) factors from FGD on playing online games; and nine (9) training needs of the participants which were ranked in descending order.

This manifested that when the respondents experience boredom and overwhelming problems, they used a mood modification strategy and virtual escape through online gaming which

became excessive and turned out to become an addiction. The participants spent a lot of time in playing online games, missed their sleep and skipped their meals. When they tried to lessen the frequency and intensity of their gaming, they experienced the negative emotional impacts of withdrawal and so they continued to play online games until such a time that they cannot control themselves anymore and suffer the physical and psychological effects of IGD. Their excessive virtual gaming affected their family and social aspects, and especially their academic performance in the school.

Wang et al. (2017) explained that IGD showed deficits in making decisions and tends to search immediate gratification. The essential method came from the deficient capacity in evaluating between delayed incentive, immediate fulfilment, and the impaired ability in urge inhibition. This was considered related to the dysfunction of the prefrontal stimulation. As a result, respondents with IGD were unstoppable in playing online games even though they have faced the severe undesirable consequences of their excessive gaming behaviour. Therefore, the behaviour modification strategies were needed to assist the participants in their training needs.

Part 2b: The Behaviour Modification Therapy Sessions

Table 2 presented the Behaviour Modification Therapy sessions facilitated to the selected high school participants. The specific time frame for the first (1st) and eighth (8th) sessions was 90 minutes, and the second (2nd) up to seventh (7th) sessions was 60 minutes.

Behaviour Modification Therapy		
Session	***Theme/Activity***	***Objectives***
1	Getting to Know Activity and Orientation on the Behaviour Modification Therapy	Welcome the participants and facilitate a getting to know activity. Orient them on the coming sessions that will be facilitated. Ask them to also write their own expectation from the therapy. Explain the importance of joining in therapy sessions.
2	Psychological Effects of IGD; Irrational and Rational Thoughts; and Maintaining Mental Hygiene	Discuss with them the result of the IGD 20 Test. Let them assess the effects of online gaming on their thoughts. Explain on the importance of rational, optimistic thoughts in maintaining mental hygiene. Let the participants talk about their good thoughts.
3	Emotional Effects of IGD and Positive Emotion and You	Enlighten the participants on the emotional effects of IGD. Let them describe their experience of having positive emotion. Elaborate on the influence of positive emotion to one's life. Let them draw a symbol of positive emotions that they want.
4	Behavioural Effects of IGD and Behaviour Modification on IGD (Part 1)	Let them identify their learned attitudes from playing online games. Expound on the effects of IGD on one's behaviour. Let them list the times during the day when they play online games. Let them write the ways to lessen their online gaming.
5	Modification on IGD (Part 2) and Reducing Computer Gaming Through Productive Activities	Explain the behaviour modification in application to IGD. Let them rank the gaming schedule they can give up. Let them choose activities in exchange of online gaming. Let them plan a weekly schedule to manage their time and their activities that can help in regulating their virtual gaming.
6	Skipping Meals and the Right Eating Habits; and Missing Sleep with IGD and Importance of Sleep	Tackle about the effects of skipping meals while online games. Talk about the food and its importance. Analyse with them the effects of missing sleep. Let them plan a sleep schedule and list ways to have a good sleep.
7	Psychosocial Effect of IGD and Mending Relationships	Emphasize on the psychosocial effects of IGD on one's relationship. Illuminate on the value of mending relationships as essential aspect towards their recovery from IGD. Let them role play social ways that can improve their relationships.
8	Youth Productive Lifestyle; Closure and Evaluation	Expound on the worth of one's time and youth productive lifestyle. Remind them on self-management to prevent the recurrence of IGD. Let them write and share their plan for the future. Explain the session closure and let them evaluate the therapy sessions.

Table 2: The Behaviour Modification Therapy

This showed the eight (8) Behaviour Modification Therapy sessions facilitated to the participants with the themes, activities, and objectives. The 1st session was on Getting to Know Activity and Orientation on the Behavior Modification Therapy. The 2nd session was on Psychological Effects of IGD; Irrational and Rational Thoughts and Maintaining Mental Hygiene. The 3rd session was Emotional Effects of IGD and Positive Emotion. The 4th session was on Behavioral Effects of IGD and Behavior Modification on IGD (Part 1). The 5th session was on Modification on IGD (Part 2); and Reduction of Computer Gaming through Productive Activities. The 6th session was on Skipping Meals with IGD and the Right Eating Habits; and Missing Sleep with IGD and Importance of Sleep. The 7th session was on Psychosocial Effect of IGD and Mending Relationships; and the 8th session was on Youth Productive Lifestyle; Session Closure and Evaluation.

The proposed eight (8) sessions of Behavior Modification Intervention was anchored from Meichenbaum's Cognitive Behavior Therapy (CBT). The focus of this intervention was to change the irrational thoughts of the participants by starting a new internal dialogue, produce a desired affect and learn new skills to have a well- adjusted behavior. It was time-limited, present-centered, and an educational intervention program targeted on particular problems to be solved (Corey, 2013).

Part 3: IGD- 20 Test Post-test Results

This presented the post-test result on Internet Gaming Disorder-20 Test of the participants. This also showed the IGD Symptoms, Mean, Interpretation and Standard Deviation after the facilitation of Behaviour Modification Therapy sessions. This demonstrated that the item number 11 on IGD symptoms had the highest mean of 2.49 which stated as "I have lied to my family members because the amount of gaming I do." On the other hand, the item number 1 had the lowest mean of 2.05 which stated as "I often lose sleep because of long gaming sessions." Both items 11 and 1 were interpreted as "Disagree". The standard deviation was 0.96 and the over-all mean of the respondents was 2.32 with the scale interpretation of disagree. This meant that the respondents disagreed on the IGD symptoms stated in the test. This has proven the reduction in IGD symptoms.

Kuss and Lopez-Fernandez (2016) stated that to treat Internet addiction especially online gaming the most common applied psychological therapy was CBT. It facilitated a behaviour modification technique in reducing the time spent in online gaming and promoted good activities that enhance the well-being of individuals with IGD. The reduction of excessive online gaming was achieved, and the helpful activities were introduced that led to the improvement on the school performance of those with IGD. These strategies were proven effective in treating IGD.

Part 4: *t*- Test on the IGD-20 Test Pre-test and Post-test

This presented the *t*- test on the IGD-20 Test pre-test and post-test. This showed the over-all mean of the respondents' pre-test and post-test, standard deviation, degree of freedom, alpha level of significance, critical *t* and the *t*-Test result, interpretation and decision.

The over-all mean of the respondents' pre-test was 3.78 with the scale interpretation of disagree; the over-all mean of the post-test was 2.32 with the scale interpretation of disagree; and the standard deviation was 0.75. Meanwhile, the degree of freedom was 42; the alpha level of significance was 0.05; the Critical *t* was 2.021; and the *t*-Test was 3.165. This manifested that there was a significant difference in the result of the IGD- 20 Test pre-test and post-test.

The hypothesis that there is a significant difference between the pre-test and post-test result on the Internet Gaming Disorder (IGD-20 Test) of the experimental group after the implementation of the Behaviour Modification Therapy program was supported by the result.

Vasiliu and Vasile (2017) used CBT for cognitive restructuring and coping skills-focused approach. They found out that CBT paradigm was effective in treating behavioural addiction especially in the case of excessive online gaming.

Lindenberg, et al. (2017) mentioned that the first priority in both educational policies and public health was on the reduction on the rate of prevalence of the excessive Internet use especially in online gaming; and the identification of the treatment that will be effective in reducing this phenomenon, training emotion regulation skills, and problem solving. This therapy program benefitted more on the male participants since the treatment seekers were more on males (Müller et al., 2014) and they were those who had more IGD negative impacts than on female population (Chen, 2018).

Part 5: The Extent of the Efficacy of the Behavior Modification Therapy

This presented the evaluation on the sessions done after the facilitation of behaviour modification therapy. This included the topics and activities, mean, scale description and interpretation. The Session 5 with the topic: Modification on IGD (Part 2) Reducing Computer Gaming through Productive Alternative Activities had the highest mean of 4.44, with a scale description of "It helped me." which was interpreted as efficacious.

The overall mean was 4.28 with a scale description of "It helped me." which was interpreted as efficacious. This showed that the number one training need of the respondents which was provided by the Behaviour Modification Therapy (BMT) was successfully facilitated. The mean of the other seven (7) sessions were also interpreted as efficacious.

Woog (2016) recommended the treatment intervention focusing on behavioural management method which involved the gradual decrease in time spent in virtual gaming. The reinforcing activities could be their school activities, skills development, and bonding with family members and friends.

The facilitation of (BMT) techniques promoted productive activities; improvement on the school performance; harmonious relationship with the family and the community; and enhancement of the well-being of the participants. For possible experience of relapse in excessive online gaming, the participants were encouraged to communicate to the school guidance personnel. Then they could request for follow-up intervention from the facilitator.

Conclusion

The main purpose of this research was to develop and implement a Behaviour Modification Therapy (BMT) program that would reduce the frequency, intensity, duration of the excessive online gaming of the adolescent participants. The BMT addressed a part of the increasing number of adolescents afflicted by Internet Gaming Disorder which was a great concern of the Philippine society. The Filipino youth needed assistance to help them change their excessive online gaming which was provided for them through the BMT program.

The participants in this study were adolescent high school students and their pre-test on the Internet Gaming Disorder (IGD-20 Test) showed that they experienced the IGD symptoms stated in the test. At this stage, they were at the period of experiencing mood disruptions and engaging in risky behaviour. Their persistent and recurrent use of Internet to engage in games alone or with other players led to their clinical impairment or distress (American Psychiatric Association, 2013). Their curiosity about online gaming turned out to become an Internet Gaming Disorder, a behavioural addiction.

The components in the development of Behaviour Modification Therapy (BMT) for the selected students were based on the factors of the IGD-20 Test pre-test and the predominant themes from related literatures and studies; Focus Group Discussions; and Training Need Analysis. The predominant themes from the related literatures and studies was on the brain effects of online gaming; and from FGD were the types of games the respondents play, factors why the respondents play online games, and the training they need to change their excessive online gaming behaviour. The greatest factor why the respondents excessively played online games was on Mood Alteration, they used this activity to modify their mood or change their feelings as they had gone virtual. This was the reason why their highest priority in receiving intervention was on the Reduction of Frequency and Intensity in Online Gaming.

After the facilitation of the BMT, the post-test administered on the Internet Gaming Disorder (IGD-20 Test) showed that the experimental group respondents disagreed on the IGD symptoms. The BMT program made a significant difference in reducing the symptoms of Internet Gaming Disorder (IGD) of the participants.

The limitations of this study were on the selection of the respondents and on the use of the IGD-20 Test. This research focused only on the adolescent public high school participants and used only the mean of the symptoms of the IGD-20 Test in finding the difference.

The future researchers may conduct the same research with students from the private high school. The IGD experiences of the respondents from the private high school was predicted to be similar to the excessive online gaming activities of those students in the public high school. They could also find the difference of IGD-20 Test factors.

The protocols followed by this study in creating and implementing the BMT program can serve as a model in developing a therapy for the respondents with IGD. The BMT can be adapted as group psychotherapy for IGD. The future researchers could facilitate the Behaviour Modification Therapy to test its effectiveness.

This research had proven the efficacy of Behaviour Modification Therapy (BMT) that made a significant difference in reducing the symptoms of Internet Gaming Disorder (IGD) of the selected Filipino high school students.

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journal of psychology & the behavioral sciences

ISSN: 2187-0675