

The Effects of Consuming Dietary Supplement at Young Age Among Students in Shah Alam

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Abstract

There has been a rising trend of dietary supplements intake among Malaysians over the last decade. Furthermore, dietary supplements use is relatively widespread in some countries. However, knowledge of dietary supplements consumption in Malaysia is still limited, especially among students. This study is aimed to investigate the health concern, addiction and social influence of consuming dietary supplement among students in Shah Alam. A questionnaire survey is utilised in collecting the data from 150 students and a descriptive approach is used in analysing them. Statistical Package for Social Science (SPSS) software is used to analyse the data, and the results are documented. Most of the students (71.3%) agree on the importance of consuming dietary supplements. They also believe that consuming dietary supplements can effectively increase immunity. However, consuming various dietary supplements can harm the body in which 90.6% of the students are aware of the consequence. The findings also indicate that consuming dietary supplement among the students is influenced by the concern of their health, addiction and social influence such as family and social media. The findings of this study can be useful for developing health communications and awareness on supplement use, which are targeted to young age and their parents.

Keywords: Dietary Supplement; Young Age; Students

1.0 Introduction

Nowadays, health problems have been discussed by all level of societies regardless of age and the issues are considered important. It is observed that the number of mortalities is increasing, which is caused by chronic diseases such as diabetes, hypertension and heart problem. Due to this reason, today's society is over-obsessed with supplements without knowing its real functions and consequences to the body. Thus, most people are vulnerable to take supplements such as vitamins, which is believed to boost the immunisation system and to protect themselves from various diseases. Usually, vitamins are needed to support the internal processes in human body to function. Besides, vitamins are beneficial and have essential role in the process of regulating metabolism in the body. Some of the current vitamins have specific function in

assisting the process of maintaining health, growth and development in human bodies. Over the last decades, dietary supplements in Malaysia have seen tremendous growth as far as varieties and numbers are concerned. Furthermore, the current situation indicates that most of the diseases are caused by unhealthy lifestyle practices where many Malaysians practice an unhealthy way of life since childhood. Many young generations today, especially the teenagers do not appear to take care of their health, which consequently led to various health issues.

Nevertheless, recently, the awareness about obesity has been exposed and society tend to begin to consume dietary supplements in maintaining a balanced weight to keep themselves fit and active. Unknown to them, many supplements contain active ingredients that can have substantial adverse effects to the body. Dietary supplements consumption has risen in the Western world in all age groups, as a strategy for disease prevention, for the correction of poor lifestyle habits, and the improvement of physical performance (Del Balzo et al., 2014). Numerous surveys have reported about health-related characteristics of supplement users, finding that supplement use is associated with a variety of habits or features considered to be components of a healthy lifestyle (Foote et al., 2003).

Supplements most likely cause harm or adverse side effects when a person consumes them without specific prescription from the experts. Consuming excessive dose of a diet supplement or combining supplements can be extremely hazardous and harmful. Blood pressure to dangerously high levels, risk of a heart attack or stroke can happen due to an overdose of stimulant products. Furthermore, taking fat-blocking supplements along with laxatives or diuretics could cause diarrhoea and an electrolyte imbalance. Furthermore, consuming multiple dietary supplements may expose to severe body malfunctions.

In addition, dietary supplement addiction has become a severe and frequent issue among young age. The young age group begin to take dietary supplements for many reasons and in the beginning they plan to use them in a proper way. Unfortunately, the young age group of people who consume dietary supplements over the limit mostly starts taking them with the recommended dosage, but the outcome does not meet their expectation. Due to that reason, some of them will begin consuming different types or multiple dietary supplements if the current dietary supplements that they take fail to give the outcomes that they expected.

According to Dorsch & Bell (2005), adolescents are getting their information regarding dietary supplements from strength coaches, friends, fellow athletes, physical trainers, family members, the media, the Internet, physicians, and dietitians. Few studies examine what physicians are telling or asking their patients about dietary supplements (Gardiner et al., 2014). For example, the diet quality of high-risk internet users is weaker than that of potential-risk internet users and no risk internet users. Kim et al. (2010) found that the diet of high-risk internet users lacks in nutritional value, though it may meet their energy requirements, and may therefore not support the growth spurt during adolescence as well as causing nutrition-related health problems. Besides, high fat and simple sugar intake increase the chance of being overweight or obese. Hence, this study aims to examine the relationship between health concern, addiction and social influence on consuming dietary supplements at a young age among students in Shah Alam.

2.0 Research Framework

Based on the above argument, a model is formed that relates health concern, level of addiction and social influence on consuming dietary supplements. Figure 1 illustrates the conceptual framework of this study.

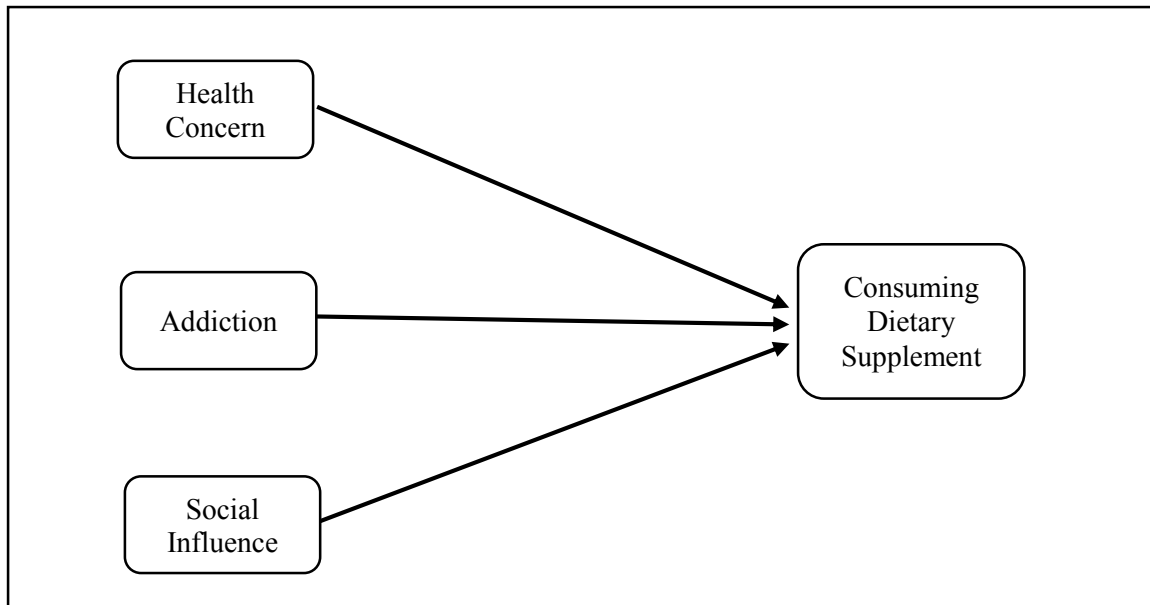


Figure 1: The Proposed Research Framework

3.0 Method

This study utilises a quantitative research approach, which is a descriptive and cross-sectional study. According to Regoniel (2015), quantitative methods are those research methods that use numbers as its basis for making generalisations about a phenomenon. A quantitative approach is a scientific method, and its grounds can be identified in the positivist paradigm (Grinnell & Unrau, 2005). The quantitative approach seeks regularities in human lives, which generally using deductive logic. This approach separates the social world into empirical components called variables which can be represented numerically as frequencies or rate, whose associations with each other can be explored by statistical techniques, and accessed through researcher-introduced stimuli and systematic measurement (Rahman, 2017; Payne & Payne, 2004).

In this study, a survey questionnaire is developed for data collection within a period of March-April 2018. The questionnaires have been distributed to 150 respondents, which have been chosen randomly consisting of male and female students in Shah Alam area. The researchers choose Shah Alam due to the existence of many schools, public and private higher institutions, and it is considered as a city, which is attractive to people of young age. At a young age, mostly, students are the one who is active consumers of dietary supplement.

The questionnaire consists of two parts. The first part contains demographic background including age, gender, race and marital status. The second part consists of 20 items of consuming dietary supplements, health concern, addiction and social influence. A 5-point Likert scale was used to measure all the variables. The respondents of this study were requested to indicate their level of perceptions on a 5-point Likert Scale, ranging from strongly disagree (1) to strongly agree (5). Many previous studies have used the 5-point Likert Scale to measure the consuming dietary supplements issues (Arulprakash & Umaiorubahan, 2018; Sung & Choi, 2017; Owens, et al., 2014). Thus, it is considered as a valid and appropriate measurement.

The data were analysed using SPSS version 22, and descriptive analyses were conducted to analyse the demographic. Analysis of variance (ANOVA) was used to compare the two groups in terms of their health concern, addiction, and social influence related to a specific feature of consuming dietary supplement products. Finally, multiple regression was run to determine which factors could lead to consuming dietary supplements.

4.0 Results

4.1 Demographic Analysis

The respondents were males and females in the range of 13 to 30 years old. Table 1 shows the demographic characteristics of the respondents in which 38% of them is male, and 62% are female. The respondents include students that are from age 13-17 (7.3%), 18-25 (87.3%) and 26-30 (7.3%). The respondents that participated in this research are 68.7% Malay, 18.7% Indian and 12.7% Chinese. Most of the respondent are 90% single, and 10% of them are married.

Table 1: Demographic Characteristic of Respondent (N=150)

Characteristics		Frequency	Percentage (%)
Gender	Male	57	38.0
	Female	93	62.0
Age	13-17	11	7.3
	18-25	131	87.3
	26-30	8	7.3
Race	Malay	103	68.7
	Indian	28	18.7
	Chinese	19	12.7
Marital	Single	135	90.0
	Married	15	10.0

4.2 Consuming Dietary Supplements

Questions were asked on 5-point Likert scales to measure the consuming dietary supplement (Table 2). Five questions regarding consuming dietary supplements were asked. The overall statement shows that the average of consuming the dietary supplement is in the range of 3.87 to 4.27. The students most believe that consume various dietary supplements can harm the body (M - 4.27, SD – 0.71). It is followed by the statement of dietary supplements that can be consumed to substitute nutrients from natural food (M - 4.15, SD – 0.92). The students also believe that consuming dietary supplements can effectively increase the immune system and health (M - 3.99, SD – 1.02). Furthermore, consuming dietary supplements can increase the confidence level and essential for young age people.

Table 2: Items of Consuming Dietary Supplement

Items	N	Mean	Std. Deviation
1. Dietary supplements can be consumed to substitute nutrients from natural food.	150	4.1533	0.92495
2. Consuming dietary supplements are important for a young age.	150	3.8733	1.08866
3. Consume various dietary supplements can harm the body.	150	4.2733	0.71322
4. By consuming dietary supplements, it can increase the confidence level.	150	3.9400	0.99144
5. Consuming dietary supplements can effectively increase the immune system and health.	150	3.9933	1.02647

4.3 Health Concern

Table 3 shows the items of health concern on consuming dietary supplements and they were asked on 5-point Likert scales while five questions of health concern were asked. The overall items indicate the health concern in the average range of 3.96 to 4.12. The students agreed that consuming dietary supplements are influenced by health concern, including increased energy levels, helps the body system works consistently, reduces the risk of developing health problem (M – 4.12, SD – 0.85; M – 4.96, SD – 0.99; M – 4.03, SD – 0.93) respectively. Besides, supplements can be used to ensure that the body is getting adequate specific nutrients.

Table 3: Health Concern Items

Items	N	Mean	Std. Deviation
1. Dietary supplements can increase energy levels, which helps you burn more calories during exercise.	150	4.1200	0.85074
2. By taking dietary supplements, it helps your body systems work consistently.	150	3.9667	0.99270
3. Dietary supplements can support health or reduces the risk of developing a health problem.	150	4.0333	0.93706
4. A supplement or multivitamin can help fill the nutrients gaps in your diet.	150	4.0200	0.93025
5. Dietary supplements are best used to ensure that you are getting adequate specific nutrients.	150	4.0067	0.87083

4.4 Addiction

The findings in Table 4 shows the items of addiction in consuming dietary supplements. Five questions of addiction were asked on 5-point Likert scales. The overall items denote the addiction in the average range of 3.50 to 3.94. The students agreed that addiction influenced

consuming dietary supplements. The students were prone to consuming the dietary supplements in reducing stress and maintain the level of the stamina, (M - 3.94, SD – 0.98) and they consume it more than one types daily (M - 3.92, SD – 0.87). Dietary supplements are taken each time after meals, i.e. breakfast lunch, tea-time and dinner. Taking and consuming dietary supplements is considered as a must and cannot start daily routines without taking it. Thus, consuming dietary supplements is influenced by the level of addiction that will affect the daily routines and activities of the users.

Table 4: Items of Addiction

Items	N	Mean	Std. Deviation
1. Diet can cause a person to take dietary supplements.	150	3.9267	0.88307
2. Young age person consumes more than one types of dietary supplements daily.	150	3.9267	0.87544
3. Young age person cannot start their daily routines without taking any dietary supplements.	150	3.5000	1.06658
4. Young age person needs to consume dietary supplements each time after their meals include breakfast, lunch, tea-time and dinner.	150	3.7333	1.05338
5. Young age person relies on dietary supplements to reduce stress and maintain the level of their stamina.	150	3.9400	0.98465

4.5 Social Influence

Five questions of social influence were asked on the 5-point Likert scales. The findings in Table 5 exhibit the items of social influence that affect dietary supplements consumption. The overall items show that social influence has a significant impact on consuming dietary supplements, which is in the average range of 3.63 to 4.33. Social influence such as mass media, family members, testimonial of the products, packaging, promotion and public figure have high power in convincing others to consume dietary supplements. A public figure is the most influenced factors that a person will consume dietary supplements (M – 4.33, SD – 0.78). Mass media, packaging and promotion are another social influence that is able to convince and attract people to buy dietary supplements (M – 4.28, SD – 0.64; M – 4.25, SD – 0.76) respectively. Testimonial of the products and family members also play a significant influence in consuming dietary supplements (M – 4.10, SD – 0.93; M – 3.63, SD – 1.26).

4.6 Multiple Regression Analysis

The results of the multiple regression analysis ($F = 93.263$, $p < 0.05$) in Table 6 shows that health concern ($\beta = 0.492$, $t = 7.553$, $p < 0.05$), addiction ($\beta = 0.234$, $t = 3.730$, $p < 0.05$) and social influence ($\beta = 0.233$, $t = 2.966$, $p < 0.05$) influence the consumption of dietary supplements. Consumers agreed that consuming dietary supplements is influenced by their concern on health, the addiction in their daily routines and social influence, especially public figure such as actors, singers, etc. Hence, health concern, addiction and social influence significantly influences the consumption of dietary supplements among the students young age.

Table 5: Items of Social Influence

Items	N	Mean	Std. Deviation
1. Mass media give sufficient information about the dietary supplements that convince people to consume it.	150	4.2800	0.64631
2. My family members encouraged me to consume dietary supplements.	150	3.6333	1.26606
3. Testimonial of the products from previous consumers influenced me to consume dietary supplements.	150	4.1000	0.93227
4. The packaging and promotion of dietary supplements products attract people to buy it.	150	4.2533	0.76137
5. I trust public figure that consumed certain brands of the dietary supplements.	150	4.3333	0.78293

Table 6: Multiple Regression Results of Consuming Dietary Supplements

Predictors	β	SE	t-statistics
Constant	1.074	1.289	0.833*
Health Concern	0.492	0.065	7.553*
Addiction	0.234	0.063	3.730*
Social Influence	0.233	0.078	2.966*

Note: $F = 93.263$; $*P < 0.05$

5.0 Discussion

The findings of this study indicate that a significant influence of health concern, addiction and social influence affects the consumption of dietary supplements at a young age. The researchers believe that the respondents know about the effects of consuming dietary supplement at a young age. Some consumers tend to get positive or negative effects by consuming dietary supplements depending on the type and how they consume the supplement. Some of them know the supplements even though they did not consume them. With the full of knowledge that they have, they will think wisely whether they should take the supplements or otherwise.

Our study shows that there is significantly higher usage of supplements among females than males, and this is consistent with previous studies (Burnett et al., 2017; Anders & Schroeter, 2017; Dickinson & Mackay, 2014). However, the survey done by Sien et al. (2014) found that there is a significantly higher usage of supplements among male than female. Sirico et al. (2018) establish that there were no significant sex differences in the use of the dietary supplement.

The health concern is one of the factors of consuming dietary supplements among the young age group of people. The result of this study indicates that there is a positive relationship between health concern and dietary supplements consumption. It is consistent with the research conducted by Sirico et al. (2018). In addition, the level of addiction in consuming supplement is influenced by several factors. Mostly the respondents consume supplement because of

the needs of their body health and to maintain good stamina while supplement users are also more likely to possess a better health status. At the same time, some respondents consider that taking the supplement is not necessary for maintaining health since it can be gained by doing other means such as practising regular exercises. The researchers also find that there is a positive relationship between social influence and consuming diet supplement at a young age. The social influence through the promotion of product and families influence that the most factors are affecting the adolescents in taking supplement. It is consistent with the research done by Sien et al. (2014) and Sirico et al. (2018).

6.0 Conclusion

The use of the dietary supplement is prevalent among Malaysian adults, which is associated with the adoption of other healthy habits that are usually encouraged as part of a healthier lifestyle. However, consumers take dietary supplements not only their health concern but also with the expectation of a specific outcome. This study adopts a convenience sample derived from students' population in Shah Alam, which may not necessarily reflect that of the general population in Malaysia, for instance. In this study, the most important factors concerning dietary supplement are analysed through a survey of students in the area of Shah Alam. However, it can be seen that there are lots of other factors that influence the usage of a dietary supplement by adolescents.

From a research perspective, there is a need exists for greater understanding about the social, cultural and behavioural factors that predict an adolescent decision to use dietary supplements. Research efforts in this area should distinguish among factors influencing uses of different classes of dietary supplements to determine whether there is a collective mind-set regardless of the supplement used or whether there are differences that exist in the orientation, knowledge-based or sources of information for these groups. Based on these findings, it would be fruitful to undertake long-term studies on the consumption pattern of dietary supplements among all ages and inclusive of all regions in Malaysia. Further research regarding consuming dietary supplement should include lifestyles with psychological issues in detail and focus on understanding the intakes of supplements, including distinguishing long term intake.

References

- Anders, S., & Schroeter, C. (2017). The impact of nutritional supplement intake on diet behavior and obesity outcomes. *PLoS ONE*, *12*(10), 1–17. <https://doi.org/10.1371/journal.pone.0185258>
- Aruprakash, N., & Umaiorubahan, M. (2018). Universal health coverage - There is more to it than meets the eye. *Journal of Family Medicine and Primary Care*, *7*(6), 1248–1252. <https://doi.org/10.4103/jfmpe.jfmpe>
- Burnett, A. J., Livingstone, K. M., Woods, J. L., & McNaughton, S. A. (2017). Dietary supplement use among Australian adults: Findings from the 2011–2012 national nutrition and physical activity survey. *Nutrients*, *9*(11), 1–12. <https://doi.org/10.3390/nu9111248>
- Del Balzo, V., Vitiello, V., Germani, A., Donini, L. M., Poggiogalle, E., & Pinto, A. (2014). A cross-sectional survey on dietary supplements consumption among Italian teen-agers. *PLoS ONE*, *9*(7), 1–6. <https://doi.org/10.1371/journal.pone.0100508>
- Dickinson, A., & Mackay, D. (2014). Health habits and other characteristics of dietary supplement users: A review. *Nutrition Journal*, *13*(1), 1–8. <https://doi.org/10.1186/1475-2891-13-14>

- Dorsch, K. D., & Bell, A. (2005). Dietary supplement use in adolescents. *Current Opinion in Pediatrics*, 17(5), 653–657. <https://doi.org/10.1097/01.mop.0000172819.72013.5d>
- Foote, J. A., Murphy, S. P., Wilkens, L. R., Hankin, J. H., Henderson, B. E., & Kolonel, L. N. (2003). Factors associated with dietary supplement use among healthy adults of five ethnicities: The multiethnic cohort study. *American Journal of Epidemiology*, 157(10), 888–897. <https://doi.org/10.1093/aje/kwg072>
- Gardiner, P., Dvorkin, L., & Kemper, K. J. (2014). Supplement Use Growing Among Children and Adolescents. *Pediatric Annals*, 33(4), 227–232. <https://doi.org/10.3928/0090-4481-20040401-08>
- Grinnell Jr, R. M., Unrau Y. (2005). Social work research and evaluation: Quantitative and Qualitative Approaches. Oxford: Oxford University Press
- Kim, Y., Park, J. Y., Kim, S. B., Jung, I. K., Lim, Y. S., & Kim, J. H. (2010). The effects of Internet addiction on the lifestyle and dietary behavior of Korean adolescents. *Nutrition Research and Practice*, 4(1), 51–57. <https://doi.org/10.4162/nrp.2010.4.1.51>
- Owens, C., Toone, T., & Steed-Ivie, M. (2014). A Survey of Dietary Supplement Knowledge, Attitudes, and Use in a Rural Population. *Journal of Nutrition & Food Sciences*, 4(5). <https://doi.org/10.4172/2155-9600.1000304>
- Payne, G. & Payne, J. (2004). Key concepts in social research. London: Sage.
- Rahman, M. S. (2017). The Advantages and Disadvantages of Using Qualitative and Quantitative Approaches and Methods in Language “Testing and Assessment” Research: A Literature Review. *Journal of Education and Learning*, 6(1), 102. <https://doi.org/10.5539/jel.v6n1p102>
- Regniel, P. A. (2015). Conceptual Framework: A Step by Step Guide on How to Make One. In *SimplyEducate.Me*. Retrieved from <https://simplyeducate.me/2015/01/05/conceptual-framework-guide/>
- Sien Y. P., Sahril, N., Mutalip, M. H. A., Zaki, N. A. M., & Ghaffar, S. A. (2014). Determinants of Dietary Supplements Use among Adolescents in Malaysia. *Asia Pacific Journal of Public Health*, 26(5_suppl), 36S-43S. <https://doi.org/10.1177/1010539514543681>
- Sirio, F., Miressi, S., Castaldo, C., Spera, R., Montagnani, S., Di Meglio, F., & Nurzynska, D. (2018). Habits and beliefs related to food supplements: Results of a survey among Italian students of different education fields and levels. *PLoS ONE*, 13(1), 1–11. <https://doi.org/10.1371/journal.pone.0191424>
- Sun, Y., & Choi, J. (2017). Protein Supplement Usage Among Male University Students: Comparisons Between Current and Previous Users. *Journal of the American College of Nutrition*, 37(2), 127–132. <https://doi.org/10.1080/07315724.2017.1370618>