



## Career Preference amongst Year 10 Students in Malaysia: A Pilot Study

Seo Yiie Huern<sup>1\*</sup>, Khairul Anwar Khairuddin<sup>2</sup>, Amalina Ismail<sup>3</sup>  
and Somsubhra De<sup>1</sup>

<sup>1</sup>Department of Obstetrics and Gynecology, Melaka Manipal Medical College, Jalan Batu Hampar,  
Bukit Baru, Melaka 75150 Malaysia.

<sup>2</sup>Department of Obstetrics and Gynecology, Melaka Manipal Medical College, Melaka, Malaysia.

<sup>3</sup>Melaka Manipal Medical College, Hospital Serdang, Selangor, Malaysia.

### Authors' contributions

This work was carried out in collaboration between all authors. All authors read and approved the final manuscript.

### Article Information

DOI:10.9734/BJESBS/2015/14621

#### Editor(s):

(1) Satu Uusiautti, University of Lapland, Rovaniemi, Finland.  
(2) Eduardo Montero García, Department of Electromechanical Engineering, Polytechnic School, University of Burgos, Spain.

#### Reviewers:

(1) George Whitehead, Salisbury University, Salisbury, USA.  
(2) Anonymous, Tanzania.  
(3) Joseph Attiah Seniwoliba, General Administration, University for Development Studies, Tamale, Ghana.  
(4) Yongbo Lai, Department of E.E. Jiangsu College of Information Technology, China

Complete Peer review History: <http://www.sciencedomain.org/review-history.php?iid=819&id=21&aid=7504>

Original Research Article

Received 9<sup>th</sup> October 2014  
Accepted 12<sup>th</sup> December 2014  
Published 26<sup>th</sup> December 2014

### ABSTRACT

Career choice exerts a profound influence on an individual's life. In Malaysia, a Year 10 student has to decide whether to take up arts or science stream and this in turn influences their career aspirations. It is believed that during these formative years, this decision is influenced by various factors.

**Objective:** The present pilot study was conducted to determine the influences of various factors like age, gender, location, maternal and paternal occupation and their education levels on the career preferences of Year 10 students in Malaysia.

**Methods:** This analytical cross-sectional study was carried out by using the questionnaire method. The career preferences were categorised into arts or science pathways depending on the interests showed by students. These career preferences were then compared with the various factors and

\*Corresponding author: E-mail: [yiehuernseo@hotmail.com](mailto:yiehuernseo@hotmail.com);

correlation and regression analysis was performed. The differences were analysed by chi square test and independent T-test using Epi Info Version 7.0.

**Results:** This study involved forty seven Year 10 students. Age and maternal education level were found to be significantly influencing the preference towards the Arts or Science career pathway. The younger students preferred the Science stream ( $P = 0.0002$ ). The children, whose mothers were highly educated showed more preference towards Arts stream ( $P = 0.035$ ). The other factors were not statistically significant in their association.

**Conclusion:** It is likely that children at a younger age are influenced towards the science stream due to social attitude towards people with technical background. Mothers with higher education level might be discouraging their children towards the more technical career choices due to occupational stress.

*Keywords: Career; students; Year 10; preference; education; social.*

## 1. INTRODUCTION

Career choice exerts a profound influence on an individual's life. Oxford Dictionaries define career as an occupation undertaken for a significant period of a person's life and with opportunities for progress [1]. The Malaysian education system comprises of students from Year 1 to Year 6 for primary school level and Year 7 to Year 12 for secondary school level. Year 10 students are the equivalent of the 'O' level qualification in the British Education System. These students are at the crossroads of their career because they have to choose their preferred subjects whether to study in the Arts stream or Science stream [2]. It is a pivotal decision as most students will follow careers related to their field of interest in the respective streams.

Career aspirations are influenced by various socio-demographic factors such as age, gender and area of residence. The parents' occupation and education level may also influence gender choices across a variety of context [3]. It is important for parents to give students support and encouragement to explore the many options available regarding career preferences. Counsellor and educators may play a vital role in assisting adolescents to explore their career options [4]. A study done by Lent et al. showed that vocational interests are essential to guide career choices and development [5]. Students can also merely get influenced by various television programs when it comes to deciding their career preference [6]. Meanwhile, a study by De et al. which compared the ideology or perception of students from East Malaysia and Peninsular Malaysia showed that there was no difference in terms of location of residence when it comes to choosing a career [7].

Even though many studies have been done trying to establish a correlation between the various factors on career aspirations [8,9] the data in the Malaysian setting is sparse and there is no consensus. Students should have the opportunity to evaluate all of the aspects available in order to make a complete, logical and educated plan while choosing a career pathway. Therefore, the present study was conducted to determine the career preferences of Year 10 students in Malaysia and to compare the effect of influences like age, gender, location of residence, and parental occupation and education levels on their career preferences.

## 2. METHODS

The study design was an analytical cross-sectional study. The researchers chose a reputed international school as the research study area which offers 'O' level. This school is located in a suburb setting of Melaka, Malaysia. Students attending this school were from Year 1 to the Year 13 from the age of 7 to 20 years. The Year 10 class comprising of 47 students was chosen as the population group for the study. This group was of particular importance because they were yet to decide on the various streams of studies like medical, engineering, arts & communication, business sciences and public services. Written informed consent was obtained from the School Principal and the participating students. It was clearly explained before the exercise that this was a voluntary survey and students can refrain from giving details if they wished to. Clearance was also obtained from the Institutional Ethics and Research Committee of the researchers.

The career interest survey questionnaire was adapted from School-to-World. School-to-World is an organization who has formulated the

questionnaire to determine the career pathway apt for a given student. The questionnaire was modified by reorganising it into two parts. The first part of the survey established the socio-demographic information. The second part of the questionnaire was divided into three major sections and this was done to avoid bias amongst the students about their final choice. Anonymity of the students and the institution was maintained in the questionnaire. Section I dealt with the activities of interest, Section II was about personal qualities that relates to the students and Section III was about preferred hobbies. There were 33 items in Section I, 24 items in Section II and 18 items in Section III. The students were instructed to mark the items which they would prefer in each of the given Section. Items marked in section I, II and III by the students were added and the score obtained indicated the career preferred by the students based on their interests, personal qualities and preferred hobbies. All students were categorized into six career options. These options were then compared to determine the correlation between various socio-demographic factors with the career preferences of these students. The questionnaire used age, gender, location of residence, parental occupation and education level as the socio-demographic factors.

All the Year 10 students who gave consent and submitted a complete questionnaire were included in the study whereas those who refused to give consent and incomplete questionnaires were excluded from the study. The statistical analysis was carried out using Epi Info Version 7.0 using correlation and regression analysis and the differences were analysed by chi square test and T-Test to look for the association between the various factors on the career choices of these students.

### 3. RESULTS

#### 3.1 Demographics

There were 47 students in the Year 10 class. All students had given their consent and agreed to participate in the research. Out of the 47 questionnaires, 44 were found to be complete as per inclusion criteria while 3 questionnaires had missing data and therefore were not included in the study. This resulted in a 93.6% successful return rate. The age distribution of the students in the class ranged from 14 to 20 years. The mean age of the participants was 16.16 +/- 1.58. The gender of students in the class consisted of 50%

males and 50% females. Almost 75% of the students were from an urban residential area while the rest were from a rural setting (Table 1). Nearly 91% of the fathers and 59% of mothers of the students had a white-collar occupational status. White-collar occupation denotes professional careers or the people who work in an office setting or other professional environment like doctors, lawyers and teachers. The blue-collar occupation denotes work related to manual or physical work or workers in factories or industries. Occupations that came under the category 'Others' were those that did not fit into the white-collar or blue-collar definition, which included homemakers. As for the education levels, 45% of the students' fathers had level 1 education while 47% of the mothers had level 2 education. Level 1 education denoted those with Master or Doctoral education status or their equivalents. Level 2 education denoted those with Bachelor Degree education status or their equivalents while level 3 educations were those having an education level of secondary school or less (Table 2).

**Table 1. Demographic data of the Year 10 students**

Variable	Frequency N = 44	Percentage (%) 100
<b>Age</b>		
14	6	13.64
15	12	27.27
16	10	22.73
17	6	13.64
18	6	13.64
19	3	6.82
20	1	2.26
<b>Sex</b>		
Male	22	50
Female	22	50
<b>Residence</b>		
Urban	32	72.73
Rural	12	27.27

From the items marked in the questionnaire, the students were then categorised into six career choices. These career choices were Health and Medicine, Agriculture and Sciences, Engineering and Technology, Arts and Communication, Business and Management and Public Service (Table 3). From these six career choices, they were grouped under either Arts Stream or Science Stream. The career choices in the Science stream were Health and Medicine, Agriculture and Sciences, and Engineering and Technology while in the Arts stream they were Arts and Communication, Business and

Management and Public Service. About 65% of the students in the class opted for the Arts stream while the rest chose the Science stream. Nearly 33% of the students in the Science stream chose Health and Medicine as their choice of career. In the Arts stream, 59% of the students chose Arts and Communication. It should be noted that 10 of the students in the class (23%) had conflicting interests when it comes to choosing among the Arts or Science stream. This means that when calculating the total score to determine their career choice based on the items marked in the questionnaire, they have more than one choice of career having the maximum score and hence cannot be categorised into the 6 career choices provided.

**Table 2. Demographic data for parental occupation and education of the Year 10 students**

<b>Father occupation</b>		
White collar	40	90.90
Blue collar	2	4.55
Others	2	4.55
<b>Mother occupation</b>		
White collar	26	59.09
Blue collar	1	2.27
Others	17	38.64
<b>Father's education level</b>		
Level 1	19	43.18
Level 2	14	31.82
Level 3	11	25
<b>Mother's education level</b>		
Level 1	16	36.36
Level 2	20	45.46
Level 3	8	18.18

**Table 3. The career interest of the year 10 students**

<b>Career interest</b>	<b>Frequency percentage (%)</b>	
Health & medicine	4	9.09
Agriculture & sciences	3	6.82
Arts & communication	13	29.55
Engineering & technology	5	11.36
Business & management	4	9.09
Public service	5	11.36
Conflicting interests	10	22.73

### 3.2 Age and Career Preference

From the analysis, there was a significant correlation found between age and career preference of the Year 10 students. The students of the younger age group were found to be more inclined towards the science subjects. By using

the T-test analysis, we found that the t value obtained was 4.03 and the P value obtained when analysing age against career choice is  $P=0.00002$  (Fig. 1).

### 3.3 Maternal Education and Career Preference

From the analysis, there was significant correlation between maternal education and career preference of the Year 10 students ( $P = 0.035$ ). The students whose mother had a higher education level (Level 1) preferred the Arts subject (Fig. 2).

## 4. DISCUSSION

Career selections must be brought into a clearer focus, beginning with students in elementary school and continuing beyond. The students of Year 10 are at the edge of making a big decision. Career choice is an ever-evolving procedure that includes trial and error, experimentation, decision-making and ultimately culminating into a judgment. Career development is gaining more attention from various organisations as an effort to improve job satisfaction and organisational commitments. There are a lot of perspectives from which this decision can be approached. A number of external factors had been found to influence adolescents' career aspirations, including age, gender, parental influence, socioeconomic status, and vocational interest [10,11,12].

Various studies had been done and established a significant correlation between the factor of age and its influence on deciding a career [13,14,15]. When comparing arts or science careers in the western setting, one study had shown that the younger age group were more likely to choose arts careers [15]. However, our study showed that the younger age group preferred science careers. This may be due to the difference in the upbringing of a child when comparing a western and an eastern background. In a Malaysian setting, a young child will likely be influenced by their parents to take up specialized science careers such as Medicine or Engineering due to a high social regard among the community for these professionals. There is also a communal perception that these professionals in the science stream earn more than their counterparts in the arts stream and hence that might influence the children to consider a Science career [16]. However, the older students were more likely to choose their career path based on their own

interest and passion and hence may opt for the Arts stream.

The role of gender in adolescent occupations had been given much attention [17]. Women enter the workforce in lower-status, lower-paying jobs, and remain clustered to a limited number of conventional careers [18]. This discrepancy can be partially attributed to the disparity between traditionally male and traditionally female occupations. For example, women are less likely to be employed in science or engineering jobs, as these are considered conventionally male occupations [19]. This pattern of preference may be traced back to their schooling days where girls are less likely than boys to choose math and science related subjects and courses in school [13,20]. Girls are more likely to aspire for arts career than science [21]. Our study showed no difference in preferences amongst the genders for their career choice. This may be due to an increasing number of girls willing to take up science careers as they realise the importance of science and technology in today's era of globalization and modernization. The difference in location of the students also showed no correlation in their preference of career.

Parents may influence their adolescent's occupational interests in many different ways. Parents act as career role models [22,23]. Without suitable parenting skills and knowledge, parents are unable to efficiently guide their child in shaping their future and assisting them in making decisions pertaining to their future career choices. Student's perception of the value of education may increase based on their parental education level [20,24]. Both parents' education level had a strong impact on career picks of their daughters [25]. However, two studies showed father's occupation was less significant when compared to that of the mother's occupation [20,26]. Our study also corroborated the findings on the role of fathers' occupation in their children's preference of career path. Our study also showed no positive correlation between paternal education and occupation on the career choice of the year 10 students. This may be attributed to the fact that mothers exhibit a greater presence in many households. With regards to mother's occupation and education level, various studies done have found strong positive correlation with the career choices made by their children [24,25,26,27,28]. Likewise, our study has also noted a positive relationship between an adolescent's career aspirations and their mothers' educational achievement. It was

noted that mothers with higher education levels are more likely to influence their children towards the Arts career. This may be due to the mothers in the professional or science career have experienced the high level of stress and pressure associated with their field of work. This would have made them discourage their children from taking the same career path. Our study corroborated with other studies to reiterate the importance of mothers as role models in the development of their children's career goals and aspirations. The mother's occupation can be credited with impacting children's aspirations since children frequently attended work with their mother and hence were probably more informed on what their mother does for a living compared to their father. Among females in particular, career choice was strongly influenced by the mother's occupation [20,26]. However our pilot study found no correlation between maternal occupation and career choice of year 10 students. This may be because of the limited sample size of the study conducted.

Our study corroborated with the other studies showing that there is a decline in the interest of students in pursuing scientific careers [29,30]. When comparing the interest of the students, 75% of the respondents chose Arts career. The reason for this decline may be due to the perceived difficulty of living their professional lives surrounded by technical complexity. Financial incentives or scholarships may pave the way to lure more students to the field of science and technology in an effort to curb this worrying trend. Still, there is an observed differing trend over the cohorts for the different fields of science. While the fraction of youth obtaining degrees in physical sciences has declined, the proportion completing degrees in computer sciences has exponentially increased. The increase of women in life sciences and engineering work force is also noticeable [31].

The process of choosing a career is a complicated one and is an area that requires extensive research. While some studies have been conducted with regards to Malaysian students' interest in the field of medicine and entrepreneurship [32,33], the data linking socio-demographic factors and career choice in a Malaysian setting is sparse. On conducting this present study, it can be noted that there are limitations involved with this study and that there are other approaches that could be considered in the process of choosing our life's work. Being a pilot study, the size of the study (44 subjects)

was not large enough to provide conclusive findings. In the future, we may acquire a larger study population of Year 10 students from

secondary schools in the various states of Malaysia to ensure a more comprehensive and conclusive analysis.

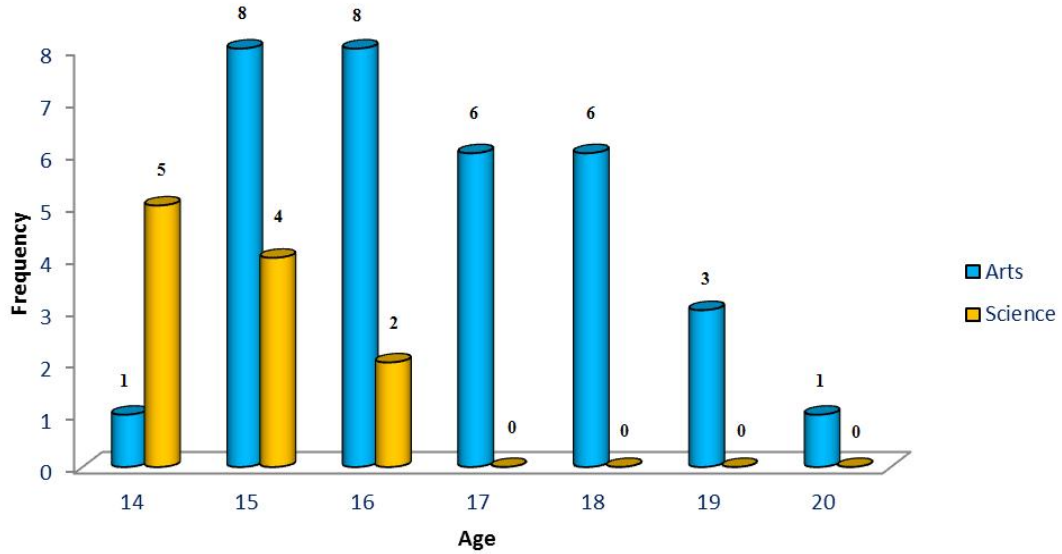


Fig. 1. Age and career preference

T-test	Age Mean +/- SD	t	P-value
Arts	16.636 +/- 1.473	4.030	0.0002
Science	14.727 +/- 0.750		

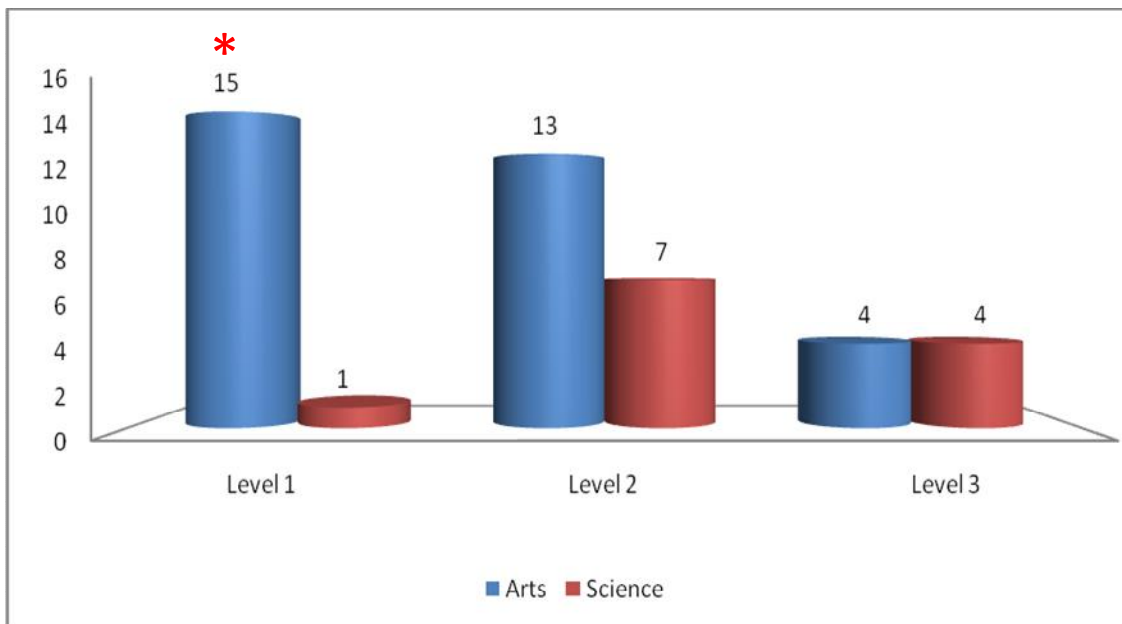


Fig. 2. Maternal education and career preference

## 5. CONCLUSION

The preference of Year 10 students in Malaysia on Arts or Science careers was significantly influenced by the factors of age and mother's education level. It is possible that younger students are influenced by their parents towards the science stream. Mothers with higher education status might be discouraging their children towards science orientated careers.

## CONSENT

Informed and written consent was obtained from the institution and the students.

## ETHICAL APPROVAL

The ethical and research committee of the institution of the researchers went through the study proposal and approved the same.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Anonymous. Career: Definition 1. Oxford Dictionaries, Oxford University Press. n.d. Accessed 21 August 2014. Available:<http://www.oxforddictionaries.com/definition/english/career>
2. Anonymous. Secondary Education. Ministry of Education Malaysia. n.d. Accessed 21 August 2014. Available:<http://www.moe.gov.my/en/pelajaran-menengah>
3. Domenico DM, Jones KH. Career Aspirations of Women in the 20th Century. *Journal of Career and Technical Education*. 2006;22(2).
4. Bardick A, Bernes K. Occupational aspirations of students in grades seven to twelve. National Consultation on Career Development. NATCON Papers. Les actes de la CONAT. 2005;1-9.
5. Lent RW, Brown SD, Hackett G. Contextual supports and barriers to career choice: A social cognitive analysis. *Journal of Counselling Psychology*. 2000;47(1):36.
6. Folsom B, Reardon R. College career courses: Design and accountability. *Journal of Career Assessment*. 2003;11(4):421-450.
7. De S, Barua A, Chhetri A. Life in the Medical Career: Perception of Pre-University Students. *Journal of Asian Scientific Research*. 2012;2(8):404-409.
8. Tang M, Pan W, Newmeyer MD. Factors influencing high school students' career aspirations. *Professional School Counseling*. 2008;11(5):285-295.
9. Mau WC. Factors that influence persistence in science and engineering career aspirations. *The Career Development Quarterly*. 2003;51(3):234-243.
10. Correll SJ. Constraints into preferences: Gender, status, and emerging career aspirations. *American Sociological Review*. 2004;69(1):93-113.
11. Khallad Y. Education and career aspirations of Palestinian and US youth. *The Journal of Social Psychology*. 2000;140(6):789-791.
12. Watson CM, Quatman T, Edler E. Career aspirations of adolescent girls: Effects of achievement level, grade, and single-sex school environment. *Sex Roles*. 2002;46(9-10):323-335.
13. Hirschi A. Swiss adolescents' career aspirations: Influence of context, age, and career adaptability. *Journal of Career Development*. 2010;36(3):228-245.
14. Issa AO, Nwalo KIN. Influence of age, gender, subject background and predisposing factors on the admission choice of undergraduates in Nigerian library schools. *Information Technologist*. 2008;5(2):70-79.
15. DeWitt J, Osborne J, Archer L, Dillon J, Willis B, Wong B. Young children's aspirations in science: The unequivocal, the uncertain and the unthinkable. *International Journal of Science Education*. 2013;35(6):1037-1063.
16. Fischer CS, Hout M. *Century of difference: How America changed in the last one hundred years*. Russell Sage Foundation; 2006.
17. Wahl KH, Blackhurst A. Factors Affecting the Occupational and Educational Aspirations of Children and Adolescents. *Professional School Counseling*. 2000; 3(5):367-74.
18. Tinklin T, Croxford L, Ducklin A, Frame B. Gender and attitudes to work and family roles: The views of young people at the millennium. *Gender and Education*. 2005;17(2):129-142.

19. Graham JW, Smith SA. Gender differences in employment and earnings in science and engineering in the US. *Economics of Education Review*. 2005;24(3):341-354.
20. Jones MG, Howe A, Rua MJ. Gender differences in students' experiences, interests and attitudes toward science and scientists. *Science Education*. 2000;84(2): 180-192.
21. Archer L, DeWitt J, Wong B. Spheres of influence: what shapes young people's aspirations at age 12/13 and what are the implications for education policy? *Journal of Education Policy*. 2014;29(1):58-85.
22. Schulenberg JE, Vondracek FW, Crouter AC. The influence of the family on vocational development. *Journal of Marriage and the Family*. 1984;129-143.
23. Keller BK, Whiston SC. The role of parental influences on young adolescents' career development. *Journal of Career Assessment*; 2008.
24. Mau WC, Bikos H. Educational and vocational aspirations of minority and female students: A longitudinal study. *Journal of Counselling & Development*. 2000;78:186-194.
25. Burlin FD. The relationship of parental education and maternal work and occupational status to occupational aspiration in adolescent females. *Journal of Vocational Behaviour*. 1976;9(1):99-104.
26. Signer B, Saldana D. Educational and career aspirations of high school students and race, gender, class differences. *Race, Gender & Class*. 2001;22-34.
27. Law W, Arthur D. What factors influence Hong Kong school students in their choice of a career in nursing? *International Journal of Nursing Studies*. 2003;40(1):23-32.
28. Crockett LJ, Bingham CR. Anticipating adulthood: Expected timing of work and family transitions among rural youth. *Journal of Research on Adolescence*. 2000;10(2):151-172.
29. Sjøberg, S. Science for the children. Report from the Science and Scientists project; 2002.
30. Roberts GG. SET for success: the supply of people with science, technology, engineering and mathematics skills: The report of Sir Gareth Roberts' review; 2002.
31. Osborne J, Simon S, Collins S. Attitudes towards science: A review of the literature and its implications. *International Journal of Science Education*. 2003;25(9):1049-1079.
32. Zulkifli A, Rogayah J. Career preferences of male and female medical students in Malaysia. *Medical Journal of Malaysia*. 1997;52:76-81.
33. Keat OY, Selvarajah C, Meyer D. Inclination towards entrepreneurship among university students: An empirical study of Malaysian university students. *International Journal of Business and Social Science*. 2011;2.4:206-220.

© 2015 Huern et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

*Peer-review history:*

*The peer review history for this paper can be accessed here:*  
<http://www.sciencedomain.org/review-history.php?iid=819&id=21&aid=7504>