AWARENESS AND KNOWLEDGE OF MALAYSIAN PUBLIC REGARDING UMBILICAL CORD BLOOD STEM CELL

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Introduction

UCB stem cells consist of hematopoietic and mesenchymal cells (MSCs). MSCs carry a huge advantage of proliferating into many other different types of cells for treatment of different diseases (1). In Malaysia, one can donate their child's cord blood in public banks such as Pusat Darah Negara (2) or private banks such as CryoCord and Stemlife. Despite all the effort made by the government and entrepreneurs, the lack of the general public awareness remains as one of the limitations to seeking and investing in stem cell banking. With less chance of immune rejection as well as non-invasive method of collection, stem cells from UCB can save many lives if there is enough knowledge and awareness on storage and donation of UCB among public.

Aims and Objectives

To evaluate the Malaysian public's awareness and knowledge regarding UCB banking in Malaysia.

Methods and Materials

The cross sectional survey was carried out using a questionnaire designed by the research team. The questionnaire has 45 questions to collect data according to sections as below:

Question Section	No of Questions
Demographic Factors	13
Level of Awareness	6
Level of Knowledge	16
Perception	10

- For 6 questions on level of awareness, score '1' was given to each "Yes" answer. The score ranged between 0-6 and was recorded as follows:

Points	Level of Awareness
5-6	Good
3-4	Moderate
0-2	Poor

- For 16 questions on level of knowledge, score '1' was given to each correct answer. The score range was 0-16. Accordingly, the knowledge levels were recorded as follows:

Points	Level of Knowledge
11-16	Good
7-10	Moderate
0-6	Poor

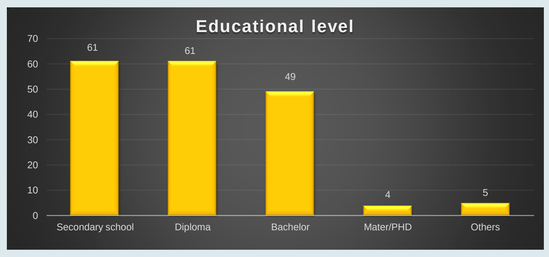
- Only Malaysian citizen, aged 18-50 years included
- Public places like universities, health clinics and beach site in Kuala Lumpur, Kuantan, Penang and Kedah were chosen for conducting the study.
- A statistical analysis is performed using SPSS and the section of the test is verified according the information gathered from survey questionnaire.
- An educational brochure was distributed to participants at the end of the study. This study was approved by the Ethics Committee of UCSI University

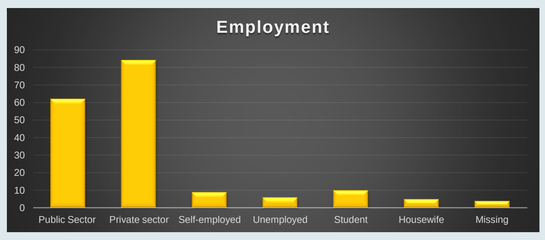
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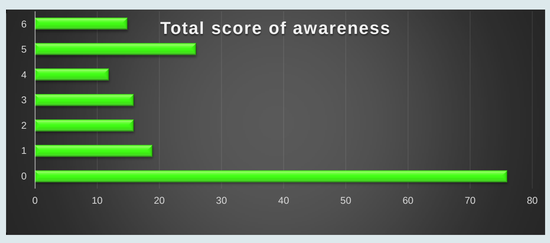
Results

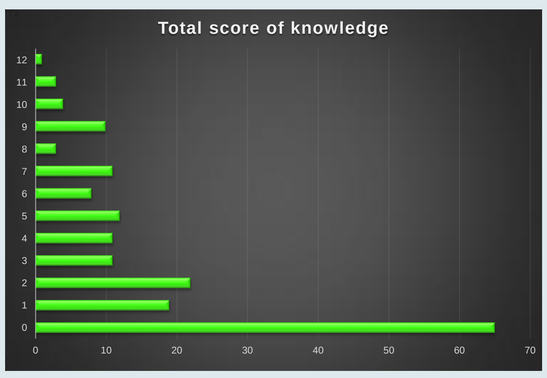
A total of 180 individuals participated in the study (49 men and 131 women). Majority of them were in age group 25 to 30 years(n=38) and majority were married (n=116). Only 7 women among participants were pregnant at time of attending this study. Ten participants know a friend or family member who have undergone bone marrow transplant. More than half of participants (n=104) have not heard of UCB banking before participating in this study. Mean score of awareness was 2.04±2.2 and mean score of knowledge was 2.91±3.3. 42.2% and 36.1% of participants scored zero for awareness and knowledge respectively. Among demographic factors, only a significant association was found between gender and level of awareness (p=0.011) (in favor of female), marital status and knowledge (p=0.016) (in favor of married). Poor level of awareness (score less than 3) was observed in 61.7% of participants while 71.1% had poor level of knowledge (score less than 7).

Demographics	Frequency (%)
AGE	
18-24	25 (13.9%)
25-30	38 (21.1%)
31-35	22 (12.2%)
36-40	29 (16.1%)
41-45	36 (20%)
46-50	29 (16.1%)
Missing	1 (0,6%)
SEX	
Male	49 (27.2%)
Female	131 (72.8%)
MARITAL STATUS	
Single	59 (32.8%)
Married	116 (64.4%)
Others	3 (1.7%)
NO OF CHILDREN	
No child	69
One	21
Two	23
Three	29
Four and more	35
RELIGION	
Islam	123 (68.3%)
Christian	21 (11.7%)
Buddhist	21 (11.7%
Hindu	14 (7.8%)
Missing	1 (0.6%)
ETHNIC	
Malay	121 (67.2%)
Chinese	24 (13.3%)
Indian	33 (18.3%)
Native Sarawak	1 (0.6%)
Missing	1 (0.6%)









PERCEPTION QUESTIONS AND RESPONSES	
1. Do you agree in UCB collection/donation?	
Yes	78 (43.3%)
No	8 (4.4%)
Not Sure	92 (51.1%)
2. Which UCB bank would you opt for if you agree to donate UCB?	
Public	72 (40.0%)
Private	27 (15.0%)
Not sure	78. (43.3%)
3. Do you agree for use of UCB for research?	
Yes	81 (45.0%)
No	14 (7.8%)
Not sure	76 (42.2%)
4. What can the donated UCB be used for?	
Transplant only	8 (4.4%)
Research	6 (3.3%)
Both	52 (28.9%)
Not sure	111.(61.7%)
5. Would you be interested to know more about therapeutic benefits	79 (43.9%)
Yes	17 (9.4%)
No	81 (45.0%)
Not sure	
6. In your opinion, who should significantly play a role in disseminating information on UCB banking?	
Doctors	91 (50.6%)
Government	77 (42.8%)
Media	93 (52.2%)
Newspaper	58 (32.2%)
Others	8
7. In your opinion, what is the main barrier in storing UCB?	
High cost	44 (24.4%)
Lack of awareness	62 (34.4%)
Lack of adequate skill	18 (10%)
Lack of sufficient proven knowledge about subject	67 (37.2%)

Discussion

As demonstrated in this research , it is evident that the Malaysian public has poor level of awareness (61.7%) and poor level of knowledge (71.1%) on UCB banking. Despite the poor awareness and knowledge, 43.3% agree for UCB donation while 45% agree for use of UCB in research. The 43.9% of respondents who want to know more about UCB banking vs 9.4% who answered no, shows that great measures have to be undertaken by doctors, government and media to promote UCB banking in the public. With the necessary effort in creating greater awareness and knowledge on UCB banking, it looks positive that more people will be donating their UCB which could expand the donor registry and save more lives.

Conclusion

The Malaysian public is not against UCB banking for treatment and research but they lack awareness and knowledge in this matter. Measures need to be taken to improve the awareness and knowledge for the benefit of patients and growth of science.



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