


Thalassemia screening among secondary school students in Hulu Terengganu



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INTRODUCTION



- **Thalassemia is the commonest inherited blood disorder in Malaysia. (KKM , 2009 , J Pathol 2014)**
- **Prevalence thalassemia trait in Malaysia is 4.5 % (S O Sharifah Sabirah et.al, 2011 , Wong LP et.al, 2011)**
- **Alpha thalassemia, Beta thalassemia ,HbE and Hb constant spring are prevalent in Southeast Asia. (Fucharoen S , 2011 , Winichagoon P et. al, 2009)**

INTRODUCTION



- 2004- MOH established the Thalassemia Prevention and Control Programme (KKM ,2009)
- School screening programme implemented in Hulu Terengganu since 2014
- Lack of knowledge and awareness lead to failure to thalassemia screening (Chattopadhyay S, 2006)
- Management of the patients with thalassemia constitutes a heavy burden for affected families and the health care system.

RATIONALE OF THE STUDY



- Study on knowledge and perception related to thalassemia are relatively inadequate in Malaysia context. (Ainoon OI, 2010)
- No study related to thalassemia conducted in Hulu Terengganu.

OBJECTIVES



1. To determine the prevalence of thalassemia trait among 16 years old students in Hulu Terengganu.
2. To determine the types of thalassemia trait among 16 year old student in Hulu Terengganu.
3. To evaluate knowledge and perceptions towards thalassemia screening done in secondary school.

RESEARCH METHODOLOGY



Study Area:

- Hulu Terengganu district
- Divided in 4 areas : Kuala berang, Ajil , Tengawang and Telemong
- All form 4 students in Hulu Terengguna: 1311(male: 646 female: 665)

Study Designs:

- Retrospective study from August 2014 – December 2015
 - (data collection from SHP database) to determine the prevalence of thalassemia trait.
- Cross-sectional study from January – July 2016
 - Using a self-administered questionnaire to evaluate the knowledge and perception towards thalassemia screening. (Wong LP , 2011)

Sampling size and method:

- 360 form 4 student randomly selected from secondary schools in Hulu Terengganu in 2016.

RESEARCH METHODOLOGY



Study Instrument :

- Thalassemia reten 2014 – 2015 (SHP database)
 1. Total 774 secondary school student in Hulu Terengganu.

- Structured Questionnaire - 3 parts
 1. Respondent's social demographic data
 2. Respondent knowledge
 3. Respondent perception

RESEARCH METHODOLOGY



Study Analysis :

- Analysed using SPSS, version 23.0
- Confident Level = 95%, P value < 0.05
- Chi-square test

EXCLUSION CRITERIA



- Not attending to school on the day of assessment
- Incomplete answered questionnaire
- Students who have been diagnosed with Thalassemia Major on regular blood transfusion or any blood disorders.

TERMINOLOGY



Science stream	Pure science
Non Science stream	Art , mechanical stream
Good knowledge	Score 11 – 15
Poor knowledge	Score 5 - 10
Positive perception	Agreed for thalassemia screening
Negative perception	Refused for thalassemia screening

RESULTS

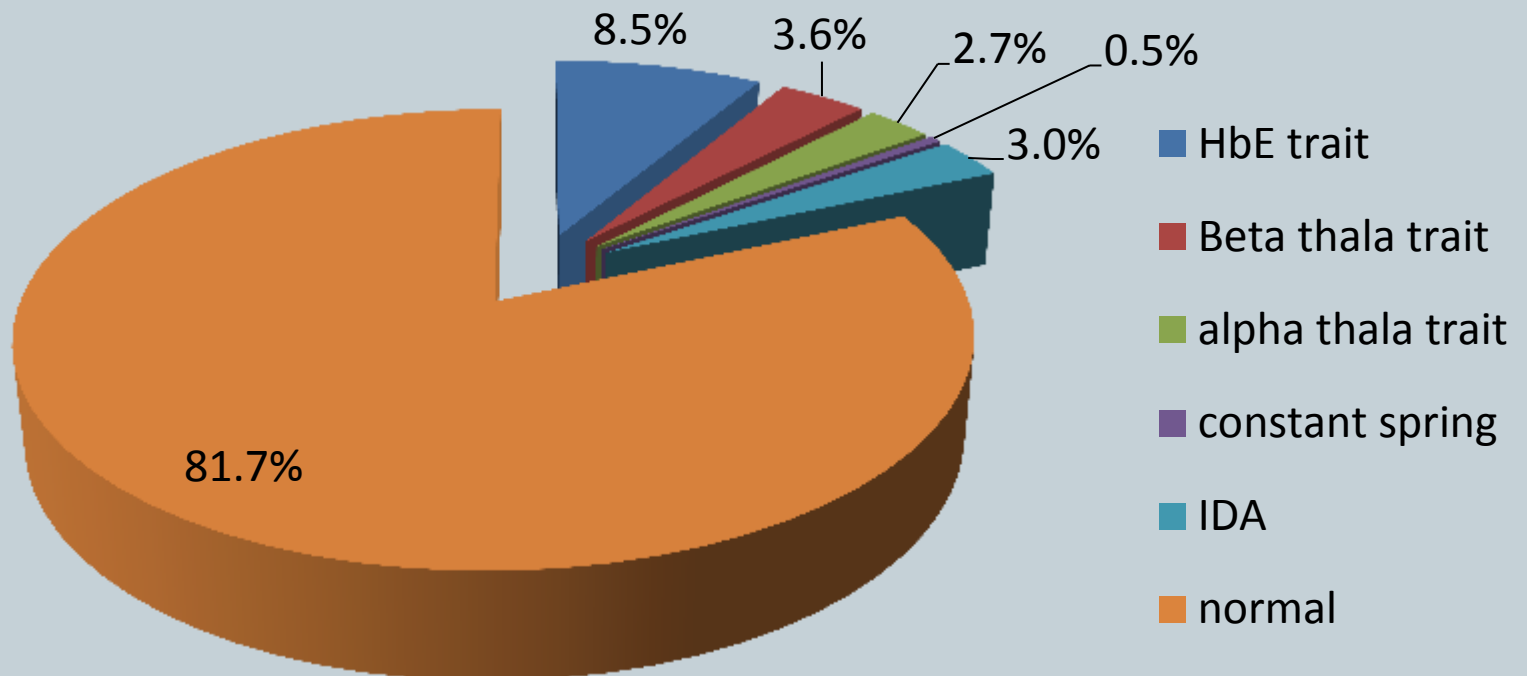


PREVALENCE OF THALASSEMIA TRAIT AMONG 16 YEAR OLD STUDENT IN HULU TERENGGANU

RESULTS



- N = 774 , male : 368 female : 406
- Prevalence of thalassemia trait : 15.3%



RESULTS



TYPES OF THALASSEMIA TRAIT AMONG 16 YEAR OLD STUDENT IN HULU TERENGGANU

RESULTS



- HbE trait is the most common thalassemia trait.

	HbE trait	Beta thala trait	Alpha thala trait	Constant spring	IDA	Normal	Total n
2014	28	11	8	0	10	204	261
2015	38	17	13	4	13	428	513
Total	66 8.5%	28 3.6%	21 2.7%	4 0.5%	23 3.0%	632 81.7%	774 100%

RESULTS



- The prevalence of thalassemia trait by gender

	Male		Female		Overall	
	No	%	No	%	No	%
HbE trait	29	3.7	37	4.8	66	8.5
Beta thala trait	10	1.3	18	2.3	28	3.6
Alpha thala trait	12	1.6	9	1.1	21	2.7
Constant spring	1	0.1	3	0.4	4	0.5
Total	52	6.7	67	8.6	119	15.3

RESULTS

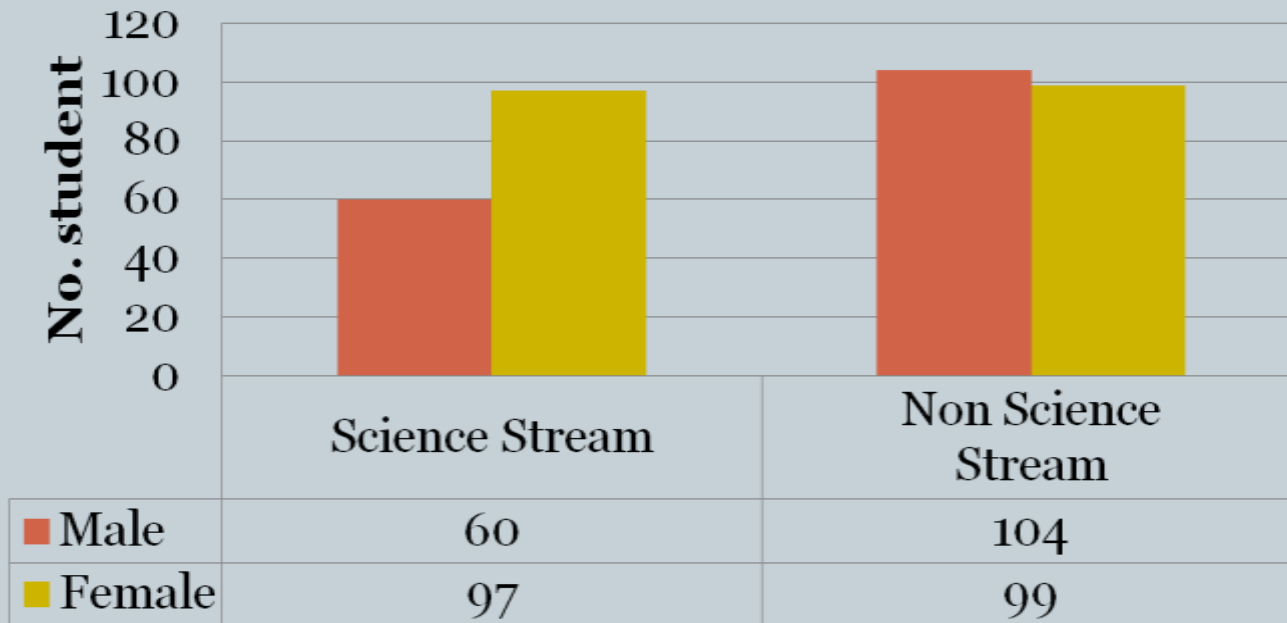


KNOWLEDGE AND PERCEPTION TOWARDS THALASSEMIA SCREENING

RESULTS



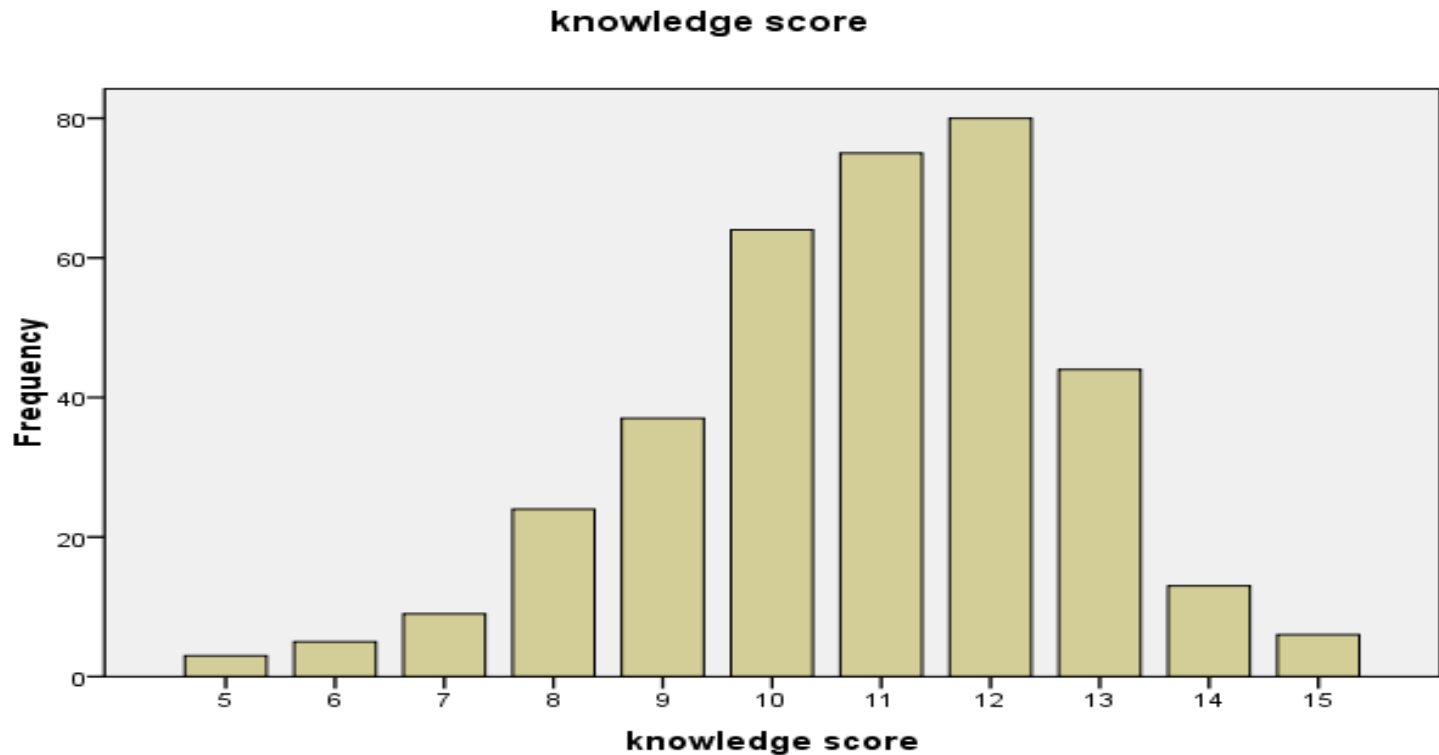
- Gender and educational stream profile
- N = 360
- 43% : science stream, 57% : non science stream



RESULTS



- Generally , the knowledge is above average
- Mean knowledge score : 10.8

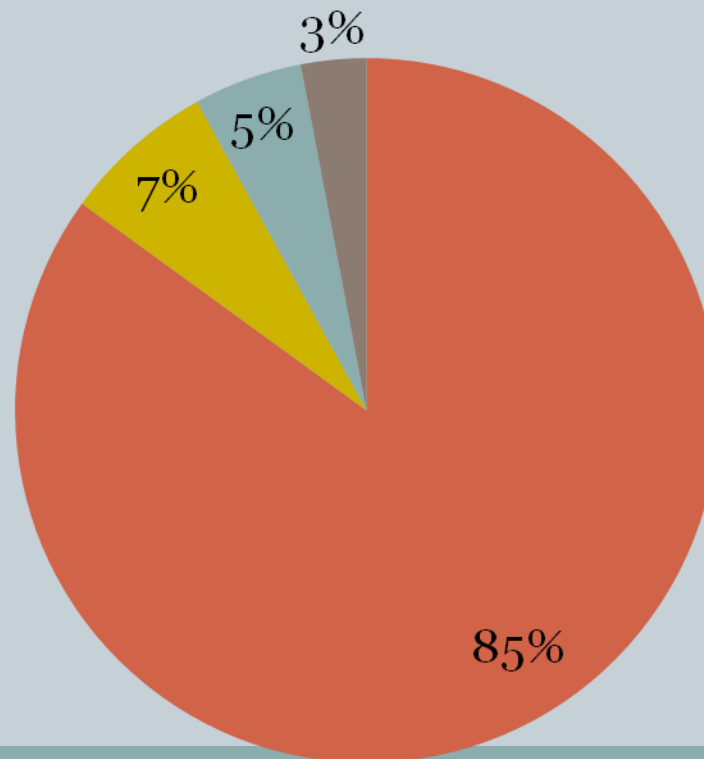


RESULTS



● SOURCE OF INFORMATIONS

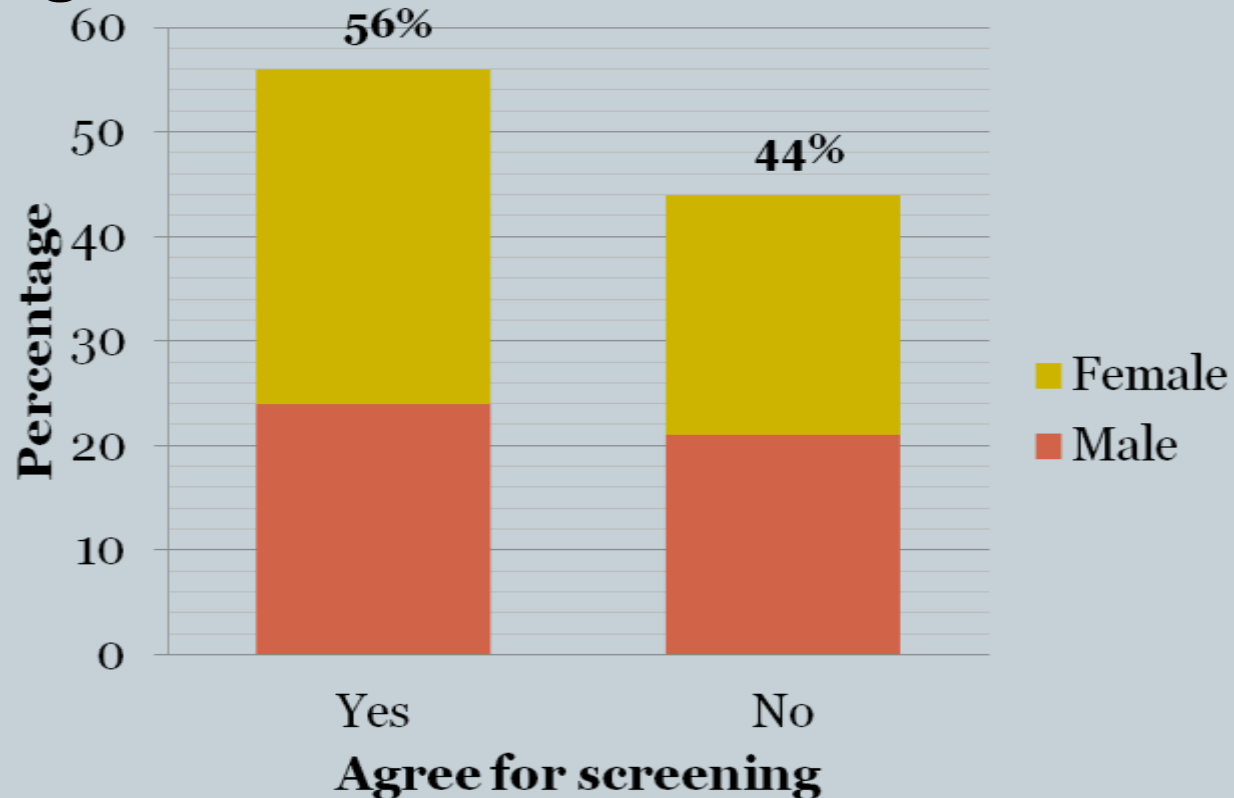
- SOCIAL MEDIA
- FRIENDS AND FAMILY
- HEALTH CARE PROVIDER
- OTHER



RESULTS



- Percentage of students keen for thalassemia screening.

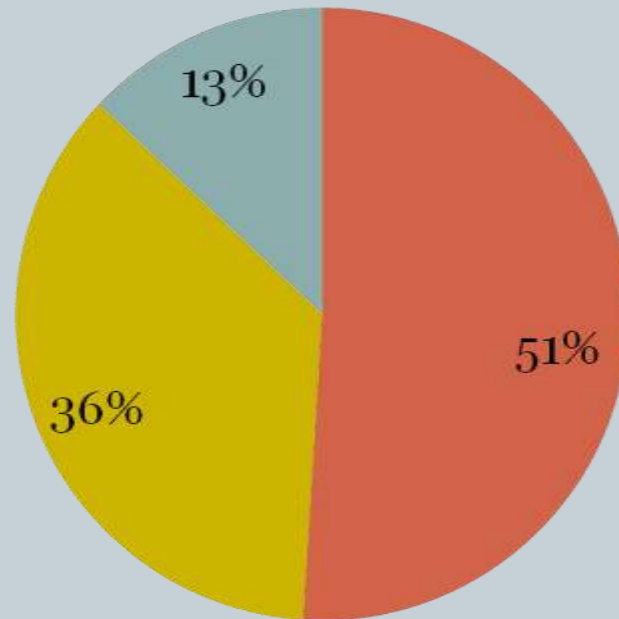


RESULTS



- Reasons refused to be screened for thalassemia :

■ fear of the needle ■ do not bother ■ fear of the results



RESULTS



- Association between gender and knowledge.
- Female students have better knowledge compared to male students.

Gender	Knowledge		Chi square value	P value
	Good	Poor		
Male	90	74	28.517	0.012
Female	128	68		

RESULTS



- Association between education stream and knowledge
- Science stream students have better knowledge score compared to non science stream students

Education stream	Knowledge		Chi square test	P value
	Good	Poor		
Science	108	49	21.118	0.020
Non science	110	93		

RESULTS



- Association between knowledge and perception.
- Good knowledge score will leads to positive perception.

Knowledge	Perception		Chi square test	P value
	Positive	Negative		
Good	169	49	120.14	0.000
Poor	36	106		

DISCUSSION – Thalassemia trait



- Prevalence of thalassemia trait among 16 year old student in Hulu Terengganu : 15.3%
- Higher than previous study
 - Perlis - thala trait : 6.8% (Meng CY, 2014)
 - Ampang - thala trait : 9.3% (S Jameela , 2011)
- HbE trait is the most common in our study – 8.5%
- Compared other studies
 - Marang - HbE trait : 8.9% (S. Salmiah, 2006)
 - Ampang - HbE trait : 6.3% (S Jameela, 2011)

DISCUSSION – Thalassemia trait



- Prevalence of Beta thalassemia trait in our study: 3.6%
- Compared to other study :
 - Malaysia : 4.5 % (Wee YC , 2006)
 - Ampang : 4.3 % (S Jameela ,2011)
- Beta thalassemia trait more common in Chinese population (George E , 2009)

DISCUSSION



- The good knowledge score can develop a positive perception towards prevention of thalassemia
 - similar finding from a study in Malaysia
(Ainoon OI, 2010)
- Other countries :
 - Italy : comparing knowledge between Italian and non Italian (Armeli C , 2007)
 - China : knowledge and attitude towards thalassemia (Long FG , 2006)

STUDY LIMITATION



- Limited to form 4 students secondary school in Hulu Terengganu.
- All respondents were Malays.

CONCLUSION



- Prevalence of thalassemia trait among 16 years old in Hulu Terengganu : **15.3%**
- **HbE trait** is the most common types : 8.5%
- Female and science stream student have better knowledge.
- There is a significant association between good knowledge score and positive perception towards thalassemia screening.

RECOMMENDATIONS



- Thalassemia screening should be implemented and expanded in all secondary school students.
- All KKM staffs should be fully trained on thalassemia counseling and screening module in order to strengthen our screening programme.
- Thalassemia counseling must be included in BSSK remaja in order to increase the awareness among adolescent.



**THANK YOU FOR YOUR
ATTENTION**