

A Systematic Translation and Cultural Adaptation Process for Three-Factor Eating Questionnaire (TFEQ-R21)

I Rosnah, MPH, I Noor Hassim, MPH, A S Shafizah, MPH

Department of Community Health, Faculty of Medicine, Universiti Kebangsaan Malaysia Medical Center, Jalan Yaakob Latiff, 56000 Cheras, Kuala Lumpur

SUMMARY

Introduction: The Three-Factor Eating Questionnaire was first constructed to measure eating behavior in an English population in the United States. It has been validated and translated for various populations in different languages. The aim of this article is to describe a systematic process for translating the questionnaire from English to Malay language.

Methodology: The report of the International Society for Pharmacoeconomics and Outcome Research (ISPOR) Task Force was used as the basis for the systematic translation process. The process began with preparation; followed by forward translation (2 independent translators), reconciliation, back translation (2 independent translators), back translation review, harmonization, cognitive debriefing, review of cognitive debriefing results and finalization, proofreading; and ended with the final report. Four independent Malay translators who fluent in English and reside in Malaysia were involved in the process. A team of health care researchers had assisted the review of the new translated questionnaires.

Results: Majority of the TFEQ-R21 items were experiencing, conceptually and semantically equivalence between original English and translated English. However, certain phrase such as “feels like bottomless pit” was difficult to translate by forward translators. Cognitive debriefing was a very helpful process to ensure the TFEQ-R21 Malay version was appropriate in term of wording and culturally accepted. A total of four redundant comments in regards to response scale wording, word confusion and wording arrangement.

Conclusion: The systematic translation process is a way to reduce the linguistic discrepancies between the English and Malay language in order to promote equivalence and culturally adapted TFEQ-R21 questionnaire.

KEY WORDS:

TFEQ-R21; translation; cultural adaptation; systematic process

INTRODUCTION

The Three Eating Factor Questionnaire (TFEQ) also known as Stunkard-Messick Eating Questionnaire or Eating Inventory was first constructed in 1985 to measure three dimensions of human eating behavior in an English population¹ namely cognitive restraint of eating, disinhibition of eating control

and susceptibility to hunger². TFEQ has been validated for normal adult population, adolescents and different race of a population³. Following construct validation study in Swedish obese men and women, the original 51-items TFEQ has been revised into 18-items TFEQ which measures cognitive restraint (6 items), uncontrolled eating (9 items) and emotional eating domains (3 items)^{2,4}. Another three items were added to the emotional eating scale to avoid floor and ceiling effects. Tholin et al. contains a brief description of the difference between TFEQ-R18 and TFEQ-R21⁵. Twenty items are on a 1 to 4 categorical response scale and one vertical rating. The revised version has been translated into about 30 different linguistic versions^{4,6,7,8,3}.

It is a norm that researchers use set of questionnaires to measure latent variables of individuals which hardly to be measured objectively. The set of questionnaires are called patient-reported outcomes⁹ or respondent-reported outcomes in general. TFEQ-R21 is one of the example a respondent-reported outcomes to measure eating behaviour. However, inferences of respondent-reported outcomes should be based on genuine data generated. The data are greatly influenced by patients' interest level to answer. Therefore, the appropriate respondent-reported outcomes must be first prioritized to make sure it is translated and culturally adapted^{9,10} especially if it is imported from the other country. The key for the appropriateness of the respondent-reported outcomes is linguistic equivalence. Eremenco et al. describes the equivalence refers to ensure unbiased measurement between two translated instruments such that any differences detected are the result of true differences between the groups being assessed and not the result of differences inherent in the measurement tool used to gather the data¹¹. In order to achieve linguistic equivalence, Beaton *et al.* focus on semantic, idiomatic, experiential and conceptual equivalence¹⁰. In parsimonious descriptions, semantic equivalence refers to the singularity meaning of words; idiomatic equivalence refers to degree of similarity in expression of target language proverb; experiential equivalence refers to fitting the depicted situation in an item to targeted language in term of cultural context and lastly conceptual equivalence refers to the concept explored is valid in target culture¹⁰. Perhaps, the necessity to consider cultural element in idiomatic, experiential and conceptual resulted in cultural adaptation term usage.

Planning to adopt an English version respondent-reported outcomes for being used by non-English-speaking Malay

This article was accepted: 18 April 2013

Corresponding Author: Rosnah Ismail Department of Community Health, UKM Medical Centre, Jalan Yaacob Latif, Bandar Tun Razak, 56000 Cheras Kuala Lumpur, Malaysia Email: ros_har74@yahoo.com

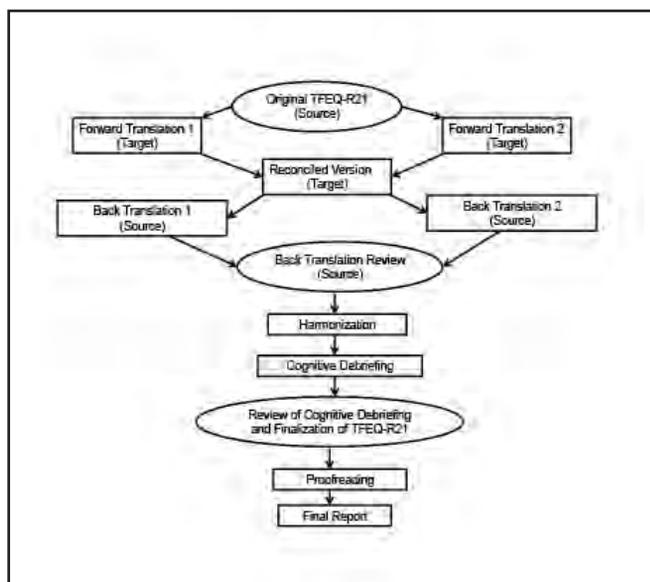


Fig. 1 : Translation process.

respondents, researchers should consider linguistic equivalence and cultural appropriateness especially it is meant to extract internal attribute which is subjective, sensitive but useful. Although linguistic equivalence and cultural appropriateness are crucial, current observed scenario indicates that there is lack of consistency in methodology and terminology used in translation process⁹. Lack of awareness among researchers on good practice for the translation and cultural adaptation for respondent-reported outcomes may jeopardize pooling of data internationally. To some researchers, translation process is considered minor and less important which consumes a lot of time to do.

Therefore, the solitary aim of this article is to describe a systematic process for translating a study instruments from English to Malay language in order to promote consistency in methodology and terminology.

MATERIALS AND METHODS

The TFEQ-R21 was translated based on the International Society for Pharmacoeconomics and Outcome Research (ISPOR) report⁹. The report well describes the translation and cultural adaptation process including the critical components, the rationale, who should do the component and what are the risks of not doing it in each step. The steps are 1) preparation, 2) forward translation, 3) reconciliation, 4) back translation, 5) back translation review, 6) harmonization, 7) cognitive debriefing, 8) review of cognitive debriefing results and finalization, 9) proofreading and 10) final report.

Step 1 – preparation.

Researcher had contacted the owner of the instrument to obtain permission to use the instrument before beginning any translation work to respect copyright. The permission was obtained via an electronic mail (Karlsson 2012, personal

communication). The understanding of the concept and construct used in the instrument was gained via literature reviews, psychometric articles received from the developer or other articles that described the instrument in details.

Step 2 – forward translation

Forward translation was done by two independent Malay native speakers. They are fluent in English and reside in Malaysia. They were equipped with information about the purpose and conceptual basis of the measure. They must also have two perspectives, namely 1) understand the ability of respondents to answer the items in terms of common, easy language but able to capture the original conceptual meaning of the questions and, 2) have knowledge about personality traits, work environment and cardiovascular disease.

Due to limited resources, first forward translator is the researcher and the second forward translator is a psychiatry in another hospital. Both have working experience of 13 years in the medical field. Even though the translators have no specific experience in the translation process of patient-reported outcomes measurement, they are constantly translating reading materials from English to Malay since medical student. Second translator had been explained about the basic concept of the tool and the concept of equivalence between the source and target version in four areas i.e. semantic, idiomatic, experiential and conceptually^{10, 11}.

Step 3 – reconciliation

Reconciliation is a process to 1) decide which forward translation is the most appropriate, 2) alter any forward translation to make them more suitable or 3) offer new forward translation if necessary¹¹. This step was done together as a teamwork which consisted of the main study supervisor as a chairman, the researcher, a doctorate candidate without prior knowledge of the translation and another doctorate candidate with prior knowledge of the translation. Two sets of forward translations had been compared and reconciled after having discussion with main study supervisor to resolve any discrepancies. The process was repeated a few number of times till the discrepancies between each translated item was agreed by consensus. The agreed item must be equivalence and clear in term of linguistic meaning (semantic, experiential, conceptual and idiomatic). This step is crucial to avoid any bias translation that is written in one person's own personal style or speech habit or in cases of misinterpretations.

Step 4 – back translation

This step is back translation of the reconciled translation into the source language i.e. Malay reconciled translated version into English version. It is a quality-control step to demonstrate that the quality of the Malay translation as such has the same meaning in English language. It was done by two back translators. They are native Malay speakers who have skills and proficiency in English as a secondary language in Malaysia. One of them has a medical background. The back translation was done literally, i.e. translated of what an item was actually said and not interpret what the translators thought an item was supposed to say. Perhaps there were a few items which may be

translated into conceptual because the presence of idioms or semantics issues. The back translators were instructed to use simple language, not respect to the normal speech pattern and colloquialisms of the English language. They were blind to the concepts explored and to the original English items.

Step 5 – back translation review

This step was to review the back translations against the original English instrument to identify any discrepancies in term of its conceptual equivalence. This step was done as teamwork consisted of the researcher, main study supervisor and a doctorate candidate who had involved in forward translation reconciliation. Harmonization was also incorporated in this step.

Step 6 – harmonization

Harmonization is the step in which all new translations are compared with each other and the source version⁹ to ensure the presence of consistency among them¹¹. This step is unique because it could happen within each major step of translation. However, it is preferable to be done after back translations⁹. Study main supervisor identified conceptually problematic items in one or more language and shared the translation solutions to the researcher for those items.

Step 7 – cognitive debriefing

Cognitive debriefing of the Malay translated version was done on a small group of respondents who drawn from the target male population (age and occupation). It was conducted by the researcher on one-to-one basis. The aims were 1) to test alternative selected wording and 2) to assess the extent of comprehensibility, sentence interpretation and cognitive equivalence of the translated items. It was also to identify and solve any potential problem in the translation such as confusing statement or difficult word to understand. Based on the objectives, respondents were selected via non probability sampling i.e. purposive sampling method. They were selected from the researcher's acquaintance network i.e. spouse, male sibling, a male friend of spouse, a male neighbour, authors' subordinate workers. They are the native speakers of Malay language, male workers with a range of age between 20 and 60 years old.

The cognitive debriefing began with self administered translated questionnaires by the respondents followed by structured interview for each item separately to determine whether any of the translated items were difficult to answer, confusing, difficult to understand and whether the respondent would have asked the question in a different way. Any response from the respondent had been recorded on the respondent response sheet together with the respondent's comments on the nature of the discussed item. The structured interview used protocol that contains 4 probing questionnaires as follows (Karlsson 2012, personal communication):

- Did you have difficulty in replying to this question? (probe: can you tell me what you found difficult?)
- Did you find this question confusing? (probe: can you tell me what you found confusing?)
- Have words been used that you found difficult to understand? (probe: can you tell me which words you found difficult to understand?)
- How would you ask this question?

Also one probing questionnaire¹² which had been asked at the end of the structured interview session as follows:

Did any of the questions make you feel uncomfortable?

The step was repeated till no new information was gathered and the data became redundant¹⁰. The saturation point had achieved after 6 respondents were interviewed.

Step 8 – review of cognitive debriefing and finalization

Cognitive debriefing results were reviewed by the study main supervisor. The supervisor identified the necessity for translation modifications for improvement. Items and response scale were reworded where respondents' comments justify such changes. Following agreement on changes between the supervisor and the researcher, the translation has been finalized.

Step 9 – proofreading

The researcher was the proof reader to check and correct any remaining spelling, diacritical and grammatical errors of the finalized questionnaire. It also was read by 11-year old boy. The boy understood the questionnaire completely and able to answer accordingly.

Step 10 – final report

The final report provides a description of the development of the translation includes the methodology used and an item-by-item representation of all translation decisions undertaken throughout the process. The report was sent to the instrument developer for review. If there is no objection from the instrument developer, the questionnaire is used for intended study.

RESULTS

All of the TFEQ-R21 items were experiential, conceptual and semantically equivalence between original English and translated English. So, did the Malay version of the instrument was experiential, conceptual and semantically equivalence with the original English version. Cognitive debriefing was a very helpful process to ensure the TFEQ-R21 Malay version was appropriate in term of wording and culturally accepted. It was done on 6 independent respondents from various education background and work experiences.

A total of four redundant comments from respondents in regard to Malay translated version. One respondent highlighted the response scale *Pasti benar* (definitely true), *Biasanya benar* (mostly true), *Biasanya tidak benar* (mostly false) and *Pasti tidak benar* (definitely false) seem incorrect and inappropriate for Malay culture as a scale of measurement of statements. Respondents preferred agree to disagree scale. In fact, this comment is congruent to one of the back translator's opinion during the back translation process. The back translator had wrote in his comment, "True or false is a statement of fact and asking this would entail testing perceptions regarding a factual claim whereas, these statements are not factual claims. The degree of agreement to the statement is thus more appropriate." After considering those comments, we finally agreed to change the response scale into Definitely agree, Mostly agree, Mostly disagree and Definitely disagree (*Pasti setuju*, *Biasanya setuju*, *Biasanya tidak setuju* and *Pasti tidak setuju*).

Another respondents confused over the word “*hidangan makanan bersaiz kecil*” (small helpings food) because it is synonymous with fast food serving in fast food restaurant which comes in small, regular and big size serving. He could not relate the term with non fast food serving. He suggested for “*hidangan makanan berjumlah kecil*” (small quantity food). Item “*Saya sentiasa berasa lapar dan boleh makan pada bila-bila masa*” (I am always hungry and can eat at any time) was commented by a respondent in regard to presence of word “*dan*” (and) which may measure two scenarios instead of one. The word was introduced during reconciliation process to enhance the sentence feature but unfortunately, it caused confusion. Study main supervisor did harmonization for that particular sentence and finalized, “*Saya sentiasa sangat lapar menyebabkan saya makan tidak mengira masa*” (I am always very hungry to eat at any time). Lastly, all respondents commented wording arrangement in the statement of the item number 17. He suggested changing a statement “*Berapa kerapkah anda mengelak dari menyimpan stok makanan yang menyelerakan?*” to “*Berapa kerapkah anda menyimpan stok makanan yang menyelerakan?*” However this suggestion leads to the contradiction of the item scoring instruction by the developer due to its positive nature statement. The final decision was made by the main study supervisor to change to rephrase the statement as “*Berapa kerapkah anda tidak menyimpan stok makanan yang menyelerakan?*” (How frequent you do not “stocking up” on tempting foods?)

All records of the each step of the translation process were written as sample below and attached as Appendix 1. Complete records of cognitive debriefing were written on separate sheets called respondent’s response sheet.

DISCUSSION

Admittedly, the translation process was not a smooth process. It required a teamwork discussion and wording arguments especially in reconciliation, back translation review and harmonization to avoid biased translation. Our backbone during this process was an online service vocabulary from the Malaysia Linguistic Centre called *Carian Pusat Rujukan Persuratan Melayu @DBP Malaysia*¹³. A few phrases such as “feels like bottomless pit” and “small helpings” were difficult to translate to Malay language by forward translator(s). “Feels like bottomless pit” is an English idiom that may not familiar or not regularly used by the English-speaking Malay translators. The word “small helpings” was quite incorrect translated by the other forward translator because the translator had not been given psychometric article in order to understand more about the questionnaire concept. The usual word used is “small portion” in Malaysia language setting.

The reconciliation was the most critical step because it was the skeleton structure of the back translation and so on. If it is solid initially, the following steps would be easier and vice versa. It was proven that semantic, conceptual and experiential equivalence was not a big deal in translated items based on recorded items history as shown in appendix 1. Therefore, absences of trained bilingual experts were not a major issue in the translation process. However, a colloquialism had minor difficulty in achieving semantic equivalent expression consensus; for example “avoid

stocking up on tempting foods” in item 17 and its category response 1 (Almost never). Both sentences are negative in nature in Malay translated version. Contrary to our grave suspicion that there will be reverse direction in responding style, the item 17 and its category response are maintained as negative statement as stated in the result above. We expect item 17 become the most problematic item as the item was regularly “popped up” during cognitive debriefing.

We do not practise “decentering” of any item at this point of time until further psychometric evidence from pilot study is obtained. “Decentering” is defined as a process by which one set of materials is not translated with as little change as possible into another language so that there will be a smooth, natural sounding version in the target language¹⁴. This process was not highlighted in the ISPOR report in details. The existing translation team was in dilemma position whether to maintain wording arrangement around or farther away from the original version. How much farther away we can deviate from the original language is another dilemma because the translated version must conform to response categories that may influence the coding procedure. That is why we rather play safe; did not bold enough to restructure the translated versions during harmonization steps. However, in order to assimilate the ISPOR report in translation practice, decentering is a “must do” to yield cross-cultural adapted respondent-reported outcomes.

Today’s translation process for patient-reported outcomes has evolved from simple forward and back translation to 10 steps of systematic process. It contains a few quality control steps⁹ and teamwork effort in reaching a consensus on the most accurate and easily understood terms¹⁵. To our knowledge, this is the first report of the cross-cultural adaptation patient-reported outcomes that has been initiated by graduate students. The initiative is partly motivated by the instrument developer to ensure the validity of research data and the safe aggregation of global data sets. Moreover, it is indeed necessary to identify differences and similarities of eating behaviour among targeted population with diverse cultural background to build on the knowledge base of each culture¹⁶. It is important to cultivate this preliminary practice in the translation process especially among graduate students.

Pilot study should be done after vigorous translation and cultural adaptation process for assessing suitability of the Three-Factor Eating Questionnaire R21 (TFEQ-R21) to the target population. It is a small scale study to test the feasibility of methods, procedures and instruments for later use on a larger scale study to avoid potentially unwanted disastrous consequences¹⁷. Poor item writing following translation and adequacy number of items are the main threat for this study¹⁸. The threat can be demonstrated in construct validation analysis to improve the quality of the problematic item. Hence, the potential unwanted disastrous consequences are controlled at the very initial stage.

CONCLUSION

The systematic translation process is a way to reduce the linguistic discrepancies between the English and Malay language in order to promote equivalence and culturally adapted TFEQ-R21 questionnaire. The presence of properly

translated questionnaire to Malay speaking population in data collection process ensures the targeted respondents to participate heartily in the proposed research. However, systematic translation process is only the first step to ensure the validity of a new linguistic version of a questionnaire. A second important step is to collect data in a pilot study for psychometric testing to ensure that the new version has the same measurement properties as the original version. These two steps provide a priori evidence that the questionnaire used is a good instrument to be used in a larger scale study.

ACKNOWLEDGEMENT

The translation process is part of doctorate research which is supported by Peruntukan Dana Fundamental PPUKM (3200070001) Project Code FF-288-2012. Special thanks to those involved directly and indirectly in the research.

REFERENCES

1. Stunkard AJ, Messick S. The three eating factor questionnaire to measure dietary restraint, disinhibition and hunger. *Journal of Psychometric Research* 1985; 29(1): 71-83.
2. Karlsson J, Persson LO, Sjostrom L, Sullivan M. Psychometric properties and factor structure of the Three-Factor Eating Questionnaire (TFEQ) in obese men and women. Results from the study Swedish Obese Subjects (SOS) study. *Int J Obes* 2000; 24: 1715-25.
3. Kavazidou E, Proios M, Liolios I, *et al.* Structure validity of the Three Factor Eating Questionnaire-R18 in Greek population. *Journal of Human Sport & Exercise* 2012; 7(1): 218-26.
4. de Lauzon B, Romon M, Deschamps V, *et al.* The Three-Factor Eating Questionnaire-R18 is able to distinguish among different eating patterns in a general population. *J Nutr* 2004; 134: 2372-80.
5. Tholin S, Rasmussen F, Tynelius P, Karlsson J. Genetic and environmental influences on eating behavior: the Swedish Young Male Twins Study. *Am J Clin Nutr* 2005; 81(3): 564-9.
6. Angel S, Engblom J, Erikson I, *et al.* Three factor eating questionnaire-R18 as a measure of cognitive restraint, uncontrolled eating and emotional eating in a sample of young Finnish females. *International Journal of Behavioural Nutrition and Physical Activity* 2009; 6(41):
7. Chearskul S, Pummoung S, Vongsaiyat S, Janyachailert P, Phattharayuttawat S. Thai version of Three-Factor Eating Questionnaire. *Appetite* 2010; 54(2): 410-3.
8. Natacci LC, Ferreira MJ. The Three Factor Eating Questionnaire-R21: translation and administration to Brazilian women. *Rev Nutr* 2011; 24(3): 383-94.
9. Wild D, Grove A, Martin M, *et al.* Principles of Good Practice for the Translation and Cultural Adaptation Process for Patient-Reported Outcomes (PRO) Measures: Report of the ISPOR Task Force for Translation and Cultural Adaptation. *Value in Health* 2005; 8(2): 94-104.
10. Beaton DE, Bombardier C, Guillemin F, Ferraz MB. Guidelines for the process of cross-cultural adaptation of self-report measures. *Spine* 2000; 25(24): 3186-91.
11. Eremenco SL, Cella D, Arnold BJ. A comprehensive method for the translation and cross cultural validation of health status questionnaires. *Evaluation & the Health Professions* 2005; 28(2): 212-232.
12. International Physical Activity Questionnaire. <https://sites.google.com/site/theipaq/cultural-adaptation> [17 May 2012]
13. Carian Pusat Rujukan Persuratan Melayu @DBP Malaysia. <http://www.dbp.gov.my/lamandbp/main.php> [4 June 2012]
14. Brislin RW. Comparative research methodology: cross-cultural studies. *Int J Psy* 1976; 11(3): 215-229.
15. Lee CC, Li D, Ara S, Puntillo K. Ensuring cross-cultural equivalence in translation of research consents and clinical documents. *Journal of Transcultural Nursing* 2009; 20(1): 77-82.
16. Wang WL, Lee HL, Fetzer SJ. Challenges and strategies of instrument translation. *West J Nurs Res* 2006; 28: 310-21.
17. Thabane L, Ma J, Chu R, *et al.* A tutorial on pilot studies: the what, why and how. *BMC Medical Research Methodology* 2010; 10: 1
18. Brown JD. What is construct validity? *JALT testing & Evaluation SIG Newsletter* 2000; 4(2): 8-12.

Appendix 1

	1. Definitely true	2. Mostly true	3. Mostly false	4. Definitely false
FT1 = FT2	1. Pasti benar	2. Biasanya benar	3. Biasanya tidak benar	4. Pasti tidak benar
BT1 = BT2	1. Definitely true	2. Mostly true	3. Mostly false	4. Definitely false
R	1. Pasti benar	2. Biasanya benar	3. Biasanya tidak benar	4. Pasti tidak benar
CDR&F	1. Pastinya setuju	2. Biasanya setuju	3. Biasanya tidak setuju	4. Pasti tidak setuju

Items:

1. I deliberately choose small helpings to control my weight

FT1: Saya sengaja mengambil hidangan bersaiz kecil sebagai cara mengawal berat badan saya

FT2: Saya sengaja memilih sedikit pertolongan untuk mengawal berat badan saya

R: Saya sengaja memilih hidangan makanan bersaiz kecil untuk mengawal berat badan saya

BT1: I purposely choose small-sized food portions to control my body weight

BT2: I purposely choose small sized food dish to control my weight

BTR: I purposely choose small-sized food portions to control my weight

H: Ok

CD: small size food is confusing, respondent suggest to change it to small quantity food

CDR&F: Saya sengaja memilih hidangan makanan jumlah yang kecil untuk mengawal berat badan saya

2. I start to eat when I feel anxious

FT1: Saya mula makan apabila saya berasa rungsing

FT2: Saya mula makan bila saya berasa gusar

R: Saya mula makan apabila saya berasa resah

BT1: I start to eat when I feel anxious

BT2: I begin to eat when I feel anxious

BTR: I start to eat when I feel anxious

H: Ok

CD: Ok

CDR&F: Take R

3. Sometimes when I start eating, I just can't seem to stop

FT1: Kadang-kadang saya tidak boleh berhenti makan setelah memulainya

FT2: Kadangkala apabila saya mula makan, saya seolah-olah tidak boleh berhenti

R: Kadang-kadangnya saya tidak boleh berhenti makan apabila saya mula makan

BT1: Sometimes i cannot stop eating once i start to eat

BT2: Sometimes I can not stop eating when I begin eating

BTR: -

H: Kadang-kadang apabila saya mula makan, saya seolah-olah tidak boleh berhenti

BT3: Sometimes when I started eating, I seem could not stop

BTR2: Sometimes when I start eating, I seem cannot stop

H: Ok

CD: Ok

CDR&F: Take H

4. When I feel sad, I often eat too much

FT1: Saya kerap kali terlebih makan apabila saya berasa sedih

FT2: Apabila saya sedih, saya kerap makan banyak

R: Saya kerap kali terlebih makan apabila saya berasa sedih

BT1: I often over-eat when i feel sad

BT2: I frequent over eating when I feel sad/depressed

BTR: I often over-eat when I feel sad

H: Ok

CD: Ok

CDR&F: Take R

5. I don't eat some foods because they make me fat

FT1: Saya tidak makan sesetengah makanan kerana ia membuatkan saya gemuk

FT2: Saya tidak makan beberapa jenis makanan kerana mereka menyebabkan saya gemuk

R: Saya tidak makan sesetengah makanan kerana ia membuatkan saya gemuk

BT1: I do not eat some foods because they make me fat

BT2: I do not eat some of the food because it will make me fat

BTR: I do not eat some foods because they make me fat

H: Ok

CD: Ok

CDR&F: Take R

6. Being with someone who is eating, often makes me want to also eat

FT1: Bersama dengan seseorang yang sedang makan, kerap kali membuatkan saya mahu makan juga
FT2: Berada di samping seseorang yang sedang makan, sering menyebabkan saya berasa hendak makan juga
R: Bersama seseorang yang sedang makan, sering menyebabkan saya berasa hendak makan juga
BT1: Being with someone who is eating often makes me want to eat too
BT2: Being with one who is eating, often caused me feels like to eat too
BTR: Being with someone who is eating often makes me want to eat too
H: Ok
CD: Ok
CDR&F: Take R

7. When I feel tense or "wound up", I often feel I need to eat

FT1: Saya kerap kali berasa perlu makan ketika saya berasa tertekan atau bengang
FT2: Apabila saya rasa tertekan atau buntu, saya kerap merasakan saya perlu makan
R: Saya kerap kali berasa perlu makan ketika saya berasa tertekan
BT1: I start to eat when i feel anxious
BT2: I frequent feels to eat when I feel stressed
BTR: I frequent feels need to eat when I feel stressed
H: Ok
CD: Ok
CDR&F: Take R

8. I often get so hungry that my stomach feels like a bottomless pit

FT1: Saya kerap kali rasa sangat lapar seolah-olah perut saya berlubang yang tiada dasar
FT2: Saya kerap rasa lapar di mana saya merasakan perut saya seperti lubang yang tiada dasar
R: Saya kerap kali rasa sangat lapar seperti seorang yang kebuluran
BT1: I often feel very hungry as if I were a starving person
BT2: I frequent feels hungry like someone in starvation
BTR: I frequent feels hungry like someone in starvation
H: Ok
CD: Ok
CDR&F: Take R

9. I am always hungry so it's hard for me to stop eating before I finish the food on my plate

FT1: Saya selalunya sangat lapar yang menyebabkan saya sukar untuk berhenti makan sebelum menghabiskan makanan dalam pinggan saya
FT2: Saya sentiasa lapar oleh itu sukar bagi saya untuk berhenti makan sebelum saya menghabiskan makanan di atas pinggan saya
R: Saya selalu lapar dan ia membuatkan saya sukar untuk berhenti makan selagi makanan tidak habis dalam pinggan
BT1: I am often hungry and it makes it hard for me to stop eating as long as food is not finished in the plate
BT2: I always hungry and it makes me difficult to stop eating as long as the unfinished food is still in the plate
BTR: I am always hungry and it makes me difficult to stop eating as long as the unfinished food is still in the plate
H: Ok
CD: Ok
CDR&F: Take R

10. When I feel lonely, I console myself by eating

FT1: Saya memujuk diri saya dengan makan ketika saya berasa keseorangan
FT2: Apabila saya merasasunyi, saya memujuk diri saya dengan makan
R: Saya memujuk diri dengan makan apabila saya berasa kesunyian
BT1: I console myself with eating when i am lonely
BT2: I persuade myself with eating when I feel lonely
BTR: I console myself by eating when I feel lonely
H: Ok
CD: Ok
CDR&F: Take R

11. I consciously restrict how much I eat during meals to avoid gaining weight

FT1: Dalam sedar, saya menghadkan berapa banyak saya makan untuk mengelakkan kenaikan berat badan
FT2: Saya sedar menghadkan jumlah pengambilan makanan semasa makan untuk mengelakkan berat badan bertambah
R: Saya menghadkan jumlah pengambilan makanan semasa makan untuk mengelakkan berat badan bertambah
BT1: I limit the amount of food that i eat to prevent an increase in my body weight
BT2: I am limiting the total intake of food to prevent body weight increases
BTR: I am limiting the total intake of food to prevent body weight increases
H: Ok
CD: Ok
CDR&F: Take R

12. When I smell appetizing food or see a delicious dish, I find it very difficult not to eat - even if I have just finished a meal

FT1: Apabila saya bau makanan yang menyelerakan atau melihat makanan yang lazat, saya merasa amat sukar untuk tidak makan - walaupun saya baru saja selesai makan

FT2: Bila saya terbau makanan yang menyelerakan, saya merasa sukar untuk tidak makan - walaupun, saya baru selesai makan

R: Apabila saya bau makanan yang menyelerakan atau melihat makanan yang lazat, saya merasa amat sukar untuk tidak makan - walaupun saya baru saja selesai makan

BT1: When I smell or see an appetising meal I feel it is very difficult not to eat, even if i had just finished eating

BT2: When I smell or see appetizing foods, I feel very difficult not to eat - even though I had just finish eating

BTR: When I smell appetizing foods or see delicious food, I feel very difficult not to eat - even I have just finished eating

H: Ok

CD: Ok

CDR&F: Take R

13. I am always hungry enough to eat at any time

FT1: Saya sentiasa cukup lapar untuk makan pada bila-bila masa

FT2: Saya sentiasa berasa cukup lapar untuk mendapatkan makanan

R: Saya sentiasa berasa lapar dan boleh makan pada bila-bila masa

BT1: I am always hungry and can eat at any time

BT2: I am always hunger and can eat at anytime

BTR: I am always hungry and can eat at any time

H: Ok

CD: Ok

CDR&F: Take R

14. If I feel nervous, I try to calm down by eating

FT1: Saya cuba bertenang dengan makanan jika saya berasa gugup

FT2: Jika saya rasa risau, saya cuba untuk bertenang dengan makan

R: Jika saya rasa gementar, saya cuba menenangkan diri dengan makan

BT1: If i am nervous, i try to calm myself with eating

BT2: If I feel nervous, I tried to console myself by eating

BTR: If I feel nervous, I try to calm down myself by eating

H: Ok

CD: Ok

CDR&F: Take R

15. When I see something that looks very delicious, I often get so hungry that I have to eat right away

FT1: Apabila saya melihat sesuatu yang kelihatan sangat lazat, saya sering berasa lapar yang menyebabkan saya makan dengan segera

FT2: Bila saya melihat sesuatu yang kelihatan sangat lazat, saya sering rasa lapar dan perlu makan segera

R: Apabila saya melihat makanan yang sangat lazat, saya sering berasa lapar yang menyebabkan saya makan dengan segera

BT1: When i see very delicious food i often feel hungry, which makes me eat quickly

BT2: When I see the most delicious food I used to feel hungry, which caused me to eat as soon as possible/immediately

BTR: When i see very delicious food i often feel hungry, which makes me eat immediately

H: Ok

CD: Ok

CDR&F: Take R

16. When I feel depressed, I want to eat

FT1: Saya mahu makan ketika saya berasa murung

FT2: Bila saya rasa sedih, saya hendak makan

R: Apabila saya berasa murung, saya mahu makan

BT1: When i feel depressed, i feel i want to eat

BT2: When I feel depressed, I want to eat

BTR: When I feel depressed, I want to eat

H: Ok

CD: Ok

CDR&F: Take R

17. How frequently do you avoid “stocking up” on tempting food?

- (1) Almost never (2) Seldom (3) Usually (4) Almost always

FT1: Berapa kerapkah anda mengelak dari menyimpan makanan yang menggodakan?

- (1) Tidak pernah (2) Jarang-jarang (3) Kebiasaannya (4) Hampir selalu

FT2: Berapa kerapkah anda mengelakkan menyimpan makanan yang menyelerakan?

- (1) Hampir tidak pernah (2) Jarang (3) Kadang-kadang (4) Hampir selalu

R: Berapa kerapkah anda mengelak dari menyimpan stok makanan yang menyelerakan?

- (1) Tidak pernah (2) Jarang-jarang (3) Kebiasaannya (4) Hampir selalu

BT1: How often do you try not keep a stock of appetising foods?

- (1) Never (2) Rarely (3) Usually (4) Almost always

BT2: How often do you avoid stocking up delicious food?

- (1) Never (2) Rarely (3) Normally (4) Almost always

BTR: How frequent do you avoid stocking up delicious food?

- (1) Almost never (2) Rarely (3) Usually (4) Almost always

H: (1) **Hampir** tidak pernah

CD: Word arrangement is confusing, suggest to remove mengelak from the statement

CDR: If word mengelak is removed, response scale should be scored in reverse. This contradict with the original scoring instructions from the developer.

F: Berapa kerapkah anda tidak dari menyimpan stok makanan yang menyelerakan?

- (1) Tidak pernah (2) Jarang-jarang (3) Kebiasaannya (4) Hampir selalu

18. How likely are you to make an effort to eat less than you want?

- (1) Unlikely (2) A little likely (3) Somewhat likely (4) Very likely

FT1: Bagaimana kemungkinan anda berusaha untuk makan kurang daripada apa yang anda mahu?

- (1) Tidak mungkin (2) Berkemungkinan kecil (3) Agak mungkin (4) Sangat mungkin

FT2: Bagaimana mungkin anda melakukan usaha untuk makan kurang daripada yang anda mahu?

- (1) Tidak mungkin (2) Mungkin sedikit (3) Sederhana mungkin (4) Sangat mungkin

R: Apakah kemungkinan untuk anda berusaha kurang makan daripada apa yang anda mahu?

- (1) Tidak mungkin (2) Berkemungkinan kecil (3) Agak mungkin (4) Sangat mungkin

BT1: How likely is it for you to eat less than what you want

- (1) Impossible (2) Not likely at all (3) Somewhat likely (4) Very likely

BT2: Is there any possibility for you to try to eat less of what you want?

- (1) It is not possible (2) It may be small (3) It is possible (4) Very likely

BTR: How likely for you to try eat less than what you want?

- (1) Unlikely (2) A little likely (3) Somewhat likely (4) Very likely

H: Ok

19. Do you go on eating binges even though you are not hungry?

- (1) Never (2) Rarely (3) Sometimes (4) At least once a week

FT1: Adakah anda makan mengikut nafsu walaupun anda tidak lapar?

- (1) Tidak pernah (2) Jarang-jarang (3) Kadang-kadang (4) Sekurang-kurangnya seminggu sekali

FT2: Adakah anda makan dengan banyak walaupun anda tidak lapar?

- (1) Tidak pernah (2) Jarang-jarang (3) Kadang-kadang

R: Adakah anda makan dengan banyak walaupun anda tidak lapar?

- (1) Tidak pernah (2) Jarang-jarang (3) Kadang-kadang (4) Sekurang-kurangnya seminggu sekali

BT1: Do you eat a lot even when you are not hungry

- (1) Never (2) Rarely (3) Sometimes (4) At least once a week

BT2: Do you eat a lot even if you are not hungry?
 (1) Never (2) Rare (3) Sometimes (4) At least once a week

BTR: Do you eat a lot even if you are not hungry?
 (1) Never (2) Rarely (3) Sometimes (4) At least once a week

H: Ok

CD: Ok

CDR&F: Take R

20 How often do you feel hungry?

(1) Only at mealtimes (2) Sometimes between meals (3) Often between meals (4) Almost always

FT1: Berapa kerapkah anda merasa lapar?
 (1) Hanya pada waktu makan (2) Kadangkala antara waktu makan (3) Kerap antara waktu makan (4) Hampir selalu

FT2: Berapa kerapkah anda merasa lapar?
 (1) Hanya pada waktu makan (2) Kadangkala antara waktu makan (3) Kerap di antara waktu makan (4) Hampir sentiasa

R: Berapa kerapkah anda merasa lapar?
 (1) Hanya pada waktu makan (2) Kadangkala antara waktu makan (3) Kerap di antara waktu makan (4) Hampir sentiasa

BT1: How often do you feel hungry
 (1) Only during meals (2) Sometimes between meals (3) often between meals (4) Almost all the time

BT2: How often do you feel hungry?
 (1) Only at mealtimes (2) Times in between meals (3) Often in between meals (4) Almost always

BTR: How often do you feel hungry?
 (1) Only at mealtimes (2) Sometimes in between meals (3) Often between meals (4) Almost always

H: Ok

CD: Ok

CDR&F: Take R

21. On a scale from 1 to 8, where 1 means no restraint in eating and 8 means total restraint, what number would you give yourself?

FT1: Pada skala 1 to 8, di mana 1 bermaksud tiada sekatan dalam makanan dan 8 bermaksud sekatan total, nombor berapakah yang anda pilih untuk diri anda?

FT2: Dari skala 1 hingga 8, di mana 1 bermaksud tiada sekatan dalam pengambilan makanan dan 8 bermaksud sekatan penuh, nombor yang manakah yang anda berikan kepada diri anda?

R: Dari skala 1 hingga 8, di mana 1 bermaksud tiada kawalan dalam pengambilan makanan dan 8 bermaksud kawalan sepenuhnya, nombor yang manakah yang anda berikan kepada diri anda?

BT1: On a scale of 1 to 8, where 1 means no control in your food intake and 8 meaning full control in your food intake, where would you place yourself on this scale?

BT2: From a scale of 1 to 8, where 1 means there is no control in food intake and 8 means total control, which number you give to yourself?

BTR: From a scale of 1 to 8, where 1 means there is no control in food intake and 8 means total control, which number you give to yourself?

H: Ok

CD: Ok

CDR&F: Take R

1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |

I eat whatever and whenever I want to

FT1: Saya makan apa saja dan bilamana saya inginkan

FT2: Saya makan apa sahaja dan bila-bila sahaja saya mahu

R: Saya makan apa sahaja dan bila-bila sahaja saya mahu

BT1: I eat what i want when i want

BT2: I eat whatever and whenever I want

BTR: I eat whatever and whenever I want

H: Ok

CD: Ok

CDR&F: Take R

I am constantly limiting my food intake, never "giving in"

FT1: Saya sentiasa menghadkan pengambilan makanan dan tidak pernah "menyerah kalah"

FT2: Saya sentiasa menghadkan jumlah pengambilan makanan, tidak pernah cuai

R: Saya sentiasa menghadkan pengambilan makanan dan tidak pernah "menyerah kalah"

BT1: I always limit my eating and never give in

BT2: I always limit the intake of food and never "give up"

BTR: I always limit the intake of food and never "give up"

H: Ok

CD: Ok

CDR&F: Take R

Note: FT= forward translation, R= reconciliation, BT= backward translation, BTR= backward translation review, H= harmonization, CD= cognitive debriefing, CDR= review of cognitive debriefing and F= finalization