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

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SUMMARY

Introduction: The Three-Factor Eating Questionnaire (TFEQ) 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 equivalent 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 Factor Eating 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 population namely cognitive restraint of eating, disinhibition of eating control and susceptibility to hunger. TFEQ has been validated for normal adult population, adolescents and different race of a population. 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). 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-R21. 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.

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 outcomes or respondent-reported outcomes in general. TFEQ-R21 is one of the example a respondent-reported outcomes to measure eating behavior. 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 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 data. In order to achieve linguistic equivalence, Beaton et al. focus on semantic, idiomatic, experiential and conceptual equivalence. 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 culture.

Planning to adopt an English version respondent-reported outcomes for being used by non-English-speaking Malay
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Fig. 1: Translation process.

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.

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 necessary. 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
translating back 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 version to ensure the presence of consistency among them. This step is unique because it could happen within each major step of translation. However, it is preferable to be done after back translations. 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):

a. Did you have difficulty in replying to this question? (probe: can you tell me what you found difficult?)

b. Did you find this question confusing? (probe: can you tell me what you found confusing?)

c. Have words been used that you found difficult to understand? (probe: can you tell me which words you found difficult to understand?)

d. How would you ask this question?

Also one probing questionnaire 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 redundant. 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 translated instrument 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 very 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 menghirau 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 kerapakah anda mengelak dari menyimpan stok makanan yang menyelerakan?” to “Berapa kerapakah 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 kerapakah 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 Pasal Rajukam Persuratan Melayu @DBP Malaysia1. 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). All 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 language2. 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 steps’ and teamwork effort in reaching a consensus on the most accurate and easily understood terms2. 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 culture3. 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 consequences4. 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.

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REFERENCES

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Appendix 1

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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
   - 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 runsing
   - 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
   - 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: Kadang-kadang apabila saya mula makan, saya seolah-olah tidak boleh berhenti
   - R: Kadang-kadang 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
   - BTR2: Sometimes when I started eating, I seem could not stop
   - 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: Apahila 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
   - 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
   - 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 membuat 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: Saya kerap kali berasa perlu makan ketika saya seperti bengang atau tertekan
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 kali rasa sangat lapar di mana saya merasa perut saya seperti lubang yang tiada dasar
R: Saya kerap kali rasa sangat lapar seperti seorang yang kebokaran
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 sehingga saya sukar untuk berhenti makan sebelum menghabiskan makanan dalam pinggan saya
R: Saya selalunya sangat lapar sehingga saya sukar untuk berhenti makan sebelum menghabiskan makanan dalam pinggan saya
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 am 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 kebuluran
FT2: Saya apabila saya berasa kebuluran saya memujuk diri dengan makan
R: Saya memujuk diri dengan makan apabila saya berasa kebuluran
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 hungry 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 berasa 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 (4) Sekurang-kurangnya seminggu sekali

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

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 meal times  (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 meal times  (2) Times in between meals  (3) Often in between meals  (4) Almost always

BTR: How often do you feel hungry?  
(1) Only at meal times  (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 total, nombor 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
Original Article

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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