Editorial

Questionnaires in prosthodontic research

Questionnaires are widely used in prosthodontics to obtain quantitative information of patients. It is commonly used to evaluate the quality of life, satisfaction of treatment, denture functional, psychosocial, esthetic effects of rehabilitation, and other parameters of prosthesis intervention in replacing missing teeth. The Geriatric Oral Health Index, Dental Impact Profile, Helkimo index, RAND Dental Health Index, Sickness Impact Profile, Dental Impact Daily Living, Psychosocial Impact Score, Oral Health Impact Profile (OHIP)-14, and OHIP-49 questionnaire are commonly used.[1-3] The questionnaires are either designed or a prefabricated questionnaire is used.

The use of existing questionnaires can save time and resources, but it has to be used with caution. The country is diverse with different languages and generalized used of questionnaire is not possible. The questionnaires used have to be translated into regional languages to be more applicable to our population. The translation and validation of questionnaire is essential for effective results.[4,5]

Translation of the questionnaire is preferably done with bilingual translators. Two or more translators can provide effective translations. The expert committee has to be constituted with three or more members who are familiar with the construct, forward, backward translation, and the working group should also have the developer of the original questionnaire. The committee should have one translator aware of the content and other should be naïve translators. In case of discrepancies, it can be discussed among the three or more translators for common consensus in accordance with the effectiveness of the questionnaire. The expert committee has to review all versions of the translations and determine whether the translated and original versions achieve the equivalence of the original questionnaire. The forward and backward translation by independent translators of the questionnaire can aid in better transformation. Any discrepancies will need to be resolved, and members of the expert committee will need to reach a consensus on all items to produce a prefinal version of the translated questionnaire. If necessary, the process of translation and back translation can be repeated. The translated questionnaires are pilot tested among participants, and their opinions are obtained through open-ended questions. If needed, the process is repeated for validation.[4]

If the questionnaires of the specific interest are unavailable in the literature, new format can be designed, constructed, and validated to the needs. The designing of questionnaire has various steps. Initially, the domain of interest and the behavior of analysis are determined. The analysis can be of as content analysis, research review, incidents, observations, judgment, or instruction. On determination of analysis, a literature review is done to evaluate on existing validated questionnaire. In the absence of validated questionnaire, a new questionnaire has to be constructed or the existing questionnaire is translated for validation.[4]

The designing of the questionnaire has the following procedure: collect the information required for the questionnaire, choose the target population, identify the method of reaching respondents (self-administered, administered by research staff, and objective recording), devise the type of question content, develop the wording, order, format and length of question, pretest, and develop the final questionnaire.[6]

The new questionnaire construct should have all the dimensions and subscales structured with appropriate importance. The questions format can be either open-ended or close-ended questions. The open-ended questions provide more opportunity to the respondents to express or explain than close-ended questions. The limitations exist in their expression and can be influenced by the recorder. In closed format questions, the response can be either in the form of multiple choice, Likert scales, true/false, or other closed formats. The questions framed should be short, simple, easy to respond by the participants and should be language familiar to the participants. The number of questions depends on the need and type construct. The constructed questionnaire has to be reviewed by the panel of experts for accuracy and grammar. The preliminary questionnaire is pilot tested with participants, evaluated

for the consistency and distribution of response. The questionnaires are reviewed with the response and the final questionnaire is drafted and validated.

The validity of the questionnaire is determined by measuring whether the questionnaire measures the intention to measure. Two major types of validity are established in questionnaire. They are content and construct validity. The content validity validates the theoretical construct of the questionnaire. A panel of experts should be determining the content validation the domain of interest by validity ratio and form. The face validity of questionnaire is also observed for its measure to which the respondents or laypersons judge the questionnaire items to be valid. Such judgment is based less on the technical components of the questionnaire items but rather on whether the items appear to be measuring a construct that is meaningful to the respondents.[4]

Construct validity is the most important concept in evaluating a questionnaire that is designed to measure a construct that is not directly observable (e.g., pain and quality of recovery). If a questionnaire lacks construct validity, it will be difficult to interpret results from the questionnaire, and inferences cannot be drawn from questionnaire responses to a behavior domain. Moreover, the questions framed should be evaluated for simplicity, intent, and importance.

Correlation matrices are then used to examine the expected patterns of associations between different measures of the same construct and those between a questionnaire of a construct and other constructs. Validation of questionnaire is done with larger sample size after the pilot validations. The reliability of the questionnaire is evaluated for the consistency (Cronbach's alpha), retest reliability (Pearson coefficient) and interrater reliability (Kappa statistics). Given the variation in the types of questionnaire being used, there are no absolute rules for the sample size needed to validate a questionnaire. As larger samples are always better than smaller samples, it is recommended that investigators utilize as large a sample size as possible (1000, 500, 100, and 50 respondents per question). The respondent-to-item ratios can be utilized to further strengthen the rationale for the large sample size when necessary. Considering the differences in regulations and requirements in different countries, agencies, and institutions, researchers are advised to consult the research ethics committee at their agencies/institutions/editorial board regarding the necessary approval needed and additional considerations that should be addressed for better appreciation of research.[4,7]

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