



Study Protocol

Designing a Content Validated Community Needs Assessment Questionnaire for Two Densely Populated Barangays in Binangonan, Rizal: A Psychometric Study Protocol

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Abstract

Background: Prior to developing a community-based rehabilitation program, there is a need to conduct a needs assessment to identify the factors that may affect the quality of life (QOL) in a community. However, after reviewing related literature, no community needs assessment tools were readily accessible and were directed toward the target population and research locale of this study. **Objective:** The study aims to develop and validate a questionnaire that assesses the needs of selected barangays in Binangonan, Rizal as part of the first phase of the PRECEDE-PROCEED model. **Methods:** A purposive sampling method will be utilized in recruiting via email a panel of experts, consisting of five content experts and five lay experts, to evaluate the researcher-developed questionnaire's content validity. Content validity will be assessed through evaluation of the tool's grammar, choice of words, question construction, and scoring of items. The data will then be analyzed by a statistician using content validity ratio (CVR) and content validity index (CVI) where questions may be retained, revised, or eliminated. **Expected Results:** The study expects to produce a content-validated questionnaire in English consisting of four dimensions: social, epidemiological, educational, and administrative/policy. For an item to be considered valid, scores for CVR and CVI should be equal to or greater than the cut-off values. The information from the questionnaire may be utilized by healthcare professionals aiming to improve the QOL in the community.

Key Words: Community-based Rehabilitation, Situational Analysis, PRECEDE-PROCEED

INTRODUCTION

Community-based rehabilitation (CBR) is a community development strategy that aims to enhance the quality of life (QOL) for people with disabilities (PWDs) and their families and ensure their inclusion and participation in the community.¹ Likewise, CBR develops a greater understanding of disability, rights, and equity, encouraging togetherness, especially during community development activities. Several Philippine organizations have implemented CBR programs, including the University of the Philippines Manila-College of Allied Medical Professions (UP-CAMP) and the University of Santo Tomas (UST). These organizations aim to change the community's perspective to

acknowledge and empower PWDs as individuals with dignity who can contribute to society through training, research, and services. UP-CAMP's CBR program was evaluated by its own institution through selected data and records, pre- and post-tests, interviews, and focus group discussions (FGDs). A 30-item questionnaire was utilized to determine the change in knowledge, attitudes, and skills (KAS) of 800 PWDs served by UP-CAMP's CBR Program. 91.8% of the participants have exhibited good to excellent change among individuals.² CBR programs in the Philippines intend to convey the benefits of rehabilitation to PWDs and their community, aid in the integration of PWDs in their respective

communities and facilitate the prevention and identification of disabilities through proper training, research, and services.³

Before developing a CBR program, conducting a community needs assessment is necessary. Community needs assessment is a medium that can provide leaders within a community an overview of pre-existing systems, policies, and environmental change strategies. Moreover, with community needs assessment, the community can identify its strengths, weaknesses, insufficiencies, and available resources that can help communities subsequently develop strategies to induce a more cohesive and positive society.⁴

However, after reviewing related literature, no community needs assessment tools were readily available or accessible to evaluate the target population; hence, this study specifically aims to produce a valid questionnaire that will assess the needs of the selected barangays in Binangonan, Rizal. The group opted to use surveys as they provide detailed information from a larger and more representative group⁵ as it would not be ideal to conduct an FGD in the time frame in which the study will be completed.⁶ This study serves as an adjunct in developing a CBR program as part of phase one of the PRECEDE-PROCEED model.

The PRECEDE-PROCEED model is an eight-phase model assessing the health needs of a population to reduce morbidity and mortality at the community level through the development, implementation, and evaluation of health promotion programs.⁷ PRECEDE means “Predisposing, Reinforcing, and Enabling Constructs in Educational Diagnosis and Evaluation.” It presents the process that precedes an intervention. Meanwhile, PROCEED means “Policy, Regulatory, and Organizational Constructs in Education and Environmental Development.” It describes how to proceed with the intervention.⁷

The phases of the PRECEDE-PROCEED model serve as an operational framework for this paper. The first phase of the PRECEDE-PROCEED model pertains to assessing community perceptions to identify QOL concerns.⁸ Moreover, the PRECEDE portion of the model consists of four phases (social, epidemiological, educational,

and ecological dimensions, and administrative and policy) and shall be used as the dimensions tested in the research-developed questionnaire. The social dimension pertains to the community's perceptions of QOL concerns. This dimension is dedicated to assessing the community's strengths, skillset of its members, and the availability of existing resources. Meanwhile, the epidemiological dimension refers to the specific health problems that may contribute to the QOL concerns. The educational and ecological dimensions determine the predisposing, enabling, and reinforcing factors that affect the likelihood of attaining behavioral and environmental changes. Lastly, the administrative and policy dimension identifies resources, program components, barriers, and policies needed to run a program.⁸ The dimensions revolve around QOL that pertains to an individual's view of their life in the context of their culture and value systems and in connection with their goals, expectations, standards, and concerns. It is a concept used in setting goals for services and for evaluating its effect on people's lives. QOL enables service providers to align their resources around individuals.⁹ Thus, the QOL will be the cornerstone and variable of the study as it encompasses other factors (genetics, behavior, environment, etc.). However, since a valid tool is not readily available or accessible, the researchers opted to create a questionnaire that may assess the needs of the selected barangays in Binangonan.

Binangonan, one of the fourteen municipalities of Rizal, is considered a first-class municipality, composed of 40 barangays according to the 2020 Census.¹⁰⁻¹¹ Based on the 2015 Census, the total population consists of 282,474 inhabitants, further categorized in terms of independence: the young dependents (ages 14 and below), economically active (ages 15 to 64), and old dependent, (ages 65 and above), constituting 29.26%, 66.92%, and 3.82% of the population, respectively. The 2010 Census shows that Region IV-A has the highest number of PWDs.¹² In Rizal, 1.8% of the population had a disability. This proportion is significantly higher compared to the proportion of PWDs in 2000 at 1%.¹³

The researchers chose Binangonan, Rizal as the study setting since the pandemic has caused an

interruption in the flow of CBR activities in the area alongside the UST research partnership. Rehabilitation services and livelihood programs were particularly affected, especially the barangays in isolated islands.¹⁴ A needs analysis was accomplished in Binangonan in 2013; however, no specific program was conducted after acquiring the findings in the previous assessment.¹⁵ The questionnaire and results garnered may not be viable for the current needs of Binangonan. The cited study used a questionnaire for the data gathering; however, no specific assessment tool was mentioned. Substantial information about the validation procedure and consultation with experts was lacking, which questions the entire validity of the previous research. Additionally, a timelier pool of data amidst the pandemic is necessary due to the differences in the period of assessment.

While CBR is undoubtedly beneficial, there is room for improvement. In a 2013 systematic review on CBR monitoring and evaluation methods and tools, information about the community was not part of the data gathered, although sometimes mentioned in the program or setting description.¹⁶ Furthermore, monitoring the effectiveness and community compliance can be done more efficiently through collecting baseline data before implementation, periodical evaluation, and transparency in feedback once the program has finished.¹⁷ CBR program designing and implementation requires profiling and needs assessment to gather information on the community. This paper will introduce the tools used in conducting the needs profiling, assessment, and other data gathering procedures in the methodology.

Objective. This study aims to develop and validate a questionnaire that assesses the needs of selected barangays in Binangonan, Rizal as part of the first phase of the PRECEDE-PROCEED model. The questionnaire assesses the social, epidemiological, educational, and administrative/policy dimensions in accordance with the PRECEDE-PROCEED Model.

METHODS

Ethical Considerations. This study abides by the Declaration of Helsinki, Good Research Practice of the Philippines, and the Data Privacy

Act of 2012 (RA 10173). The Ethics Review Committee of the University Santo Tomas – College of Rehabilitation Sciences (UST-CRS) reviewed and approved this study (Protocol Number: SI-2021-032-R1).

Study Design. The researchers will utilize a psychometric study design to determine if the instrument may be used in conducting the needs assessment for the CBR program in Binangonan, Rizal. Content validity is essential as it is considered a prerequisite for other validities.¹⁸ Additionally, it provides preliminary evidence on the construct validity of an instrument, information on the representativeness and clarity of items, and improvement of the utilized instrument by achieving recommendations from the expert panel. Content validity addresses the value of each level to which items in the instrument can sufficiently represent the entire domain. Furthermore, it reduces the requirement for other necessary resources in future reviews during the psychometric process.¹⁸

Participants. The study will utilize a purposive sampling method by recruiting panel members involved in CBR and/or community development organizations. A minimum of five experts on the panel is recommended to minimize the chance of agreement. Though a maximum number is yet to be determined, the probability of chance agreement decreases as the number of experts increases.¹⁸ Therefore, the study will involve ten panel members.

The senior researchers of the study will recruit potential panel experts based on the set criteria. The potential panel will be screened and shall be subsequently given an invitation via email afterward. Likewise, responses from the potential panel will be expected via email or SMS using the provided contact information. Panel members will consist of five content experts, individuals with research experience or work in the field, and five lay experts, potential research participants.¹⁸ Specific inclusion criteria for the panel members are shown in Table 1. Participants currently involved in similar studies will be excluded from the study to avert comparison between studies. Eligibility for lay experts was based on the training derived from the instructional manuals disseminated by the WHO, which mainly non-government

organizations (NGO) members would have to undergo before providing CBR services in a community.¹⁹ Lay experts from the community are possible based on the recruitment process. As for content experts, qualifications are set to accommodate possible dimensions of causes of disability. Furthermore, experts in social science and psychology are to be included to deliver a perspective on societal responsibilities within the community.¹⁹

Setting. The researchers opted to recruit two densely populated barangays in Binangonan, one of the fourteen municipalities of Rizal. The more precise criteria for selecting the barangays will be identified in collaboration with CBR Binangonan for the list of probable barangays fitting the definition of densely populated. A densely populated barangay in Binangonan is defined as having a significant number of people or dwellings per unit of space/time. The population density was measured based on residential population per land area, such as person per hectare.²⁰ The research locale is used as a basis to develop an instrument that can assess the selected barangays' needs. The researcher-developed questionnaire may be used for future CBR program designing and implementation in Binangonan. The study will be conducted online. An invitation and informed consent form will be provided to the experts via email. Once the participants have acknowledged and decided to participate, the questionnaire will

be sent through their email. The evaluated instrument will be returned to the researchers through email after the expert panel has examined the questionnaire.

Instrumentation. In assessing the instrument's content validity quantitatively, the researchers will use the Content Validity Ratio (CVR) and Content Validity Index (CVI). CVR is used to maintain confidence in selecting the most important and correct content in an instrument.¹⁸ Meanwhile, CVI is utilized in checking an item's clarity and relevance and is further divided into item-level (I-CVI) and scale-level (S-CVI). I-CVI presents the proportion of agreement on each item's relevancy, which is between zero and one. Meanwhile, S-CVI is the proportion of total items on an instrument that achieved a rating of 3 or 4 by the content experts.¹⁸ A more detailed interpretation of CVI and CVR will be discussed in the data analysis.

Questionnaire Development and Data Gathering Procedures. After reviewing related literature and obtaining approval from the ethics committee, the researchers will design a community needs assessment questionnaire tailored to the selected barangays in Binangonan. The questionnaire will then be written in English as it is considered to be a universal language. Numerous countries have recognized English as an official language by legislation.²¹ In addition, developing the questionnaire in English allows the tool to be used outside the Philippines.

Table 1. *Inclusion Criteria of Content and Lay Experts*

Content experts	Lay experts
<ul style="list-style-type: none"> Registered physical therapist, occupational therapist, speech-language pathologist, sports scientist, psychometrician, medical doctor, social scientist At least 18 years old At least 5 years of working experience in CBR Access to a stable internet connection Literate in Filipino and English 	<ul style="list-style-type: none"> Representatives of PWD groups or People's organizations (Non- government organizations, Public Health Practitioners, or any individual involved in community development), community worker At least 18 years old At least 5 years of working experience in CBR Access to a stable internet connection Literate in Filipino and English

The formulation of questions will be based on the four dimensions of the PRECEDE-PROCEED model. In addition, the generated questions are supported by literature, such as published works

and validated assessment tools from credible organizations. Subsequently, a panel of 10 content and lay experts will be invited via email to evaluate the questionnaire's content validity

along with an attached participant information sheet. The content validity of all questions in the instrument will be examined quantitatively utilizing the principle of CVR and CVI.¹⁸

With this, the study will adopt the Delphi method to obtain inputs from the panel to reach a consensus regarding the contents of the questionnaire. This approach is commonly done in two to three rounds.²² The panel will be given two weeks to accomplish the initial validation assessment before data collection, which will be subsequently analyzed by a statistician. The instrument's questions may be retained, revised, or eliminated depending on the results of the CVI and CVR, which will be further discussed in the data analyses. The revised questionnaire will be sent back to the panel for another two rounds of scoring, giving a total of three Delphi rounds. If a consensus is not achieved after three rounds of Delphi, although unlikely, the researchers will opt to perform further rounds, hence extending the Delphi process. Controlled feedback will be applied throughout all Delphi rounds to ensure organization and appropriateness of the process. There are numerous discrepancies in the definition of consensus among different studies.²³ However, this research is founded on the set criteria mentioned. The remaining items in the questionnaire for each round will undergo the same process of retention, revision, or elimination process. Hence, the total duration of the panel's participation will take approximately 2-3 months.

The researchers will complete the finalized questionnaire backed up by the rating, suggestions, and comments of the content and lay experts. Agreement between experts is determined if the CVI score is at least 0.62 and the CVR score is greater than 79% for each item in the questionnaire. Completing the Delphi rounds would help ensure that the questionnaire is appropriate for the community since it would be repeatedly screened for its essence, relevancy, and clarity.

Data Analysis. The researchers would determine the confidence level of the questions to analyze the content validity using CVR. Confidence is preserved while choosing an instrument's most crucial and accurate content as measured by the CVR.¹⁸ This will be calculated with the following formula:

$$CVR = \frac{n_E - (N/2)}{N/2}$$

n_E is the number of panelists indicating "essential," and N is the total number of panelists.¹⁸ Ten panelists are assigned to evaluate the questionnaire. The researchers will use Lawshe's table to identify the baseline of results. Using Lawshe's Table, a CVR higher than 0.62 indicates the item's necessity at a statistically significant level ($p=0.05$).²⁴⁻²⁵ The experts will assess the content validity ratio using a 3-point Likert scale. Each item will be scored from 1 to 3, which corresponds to "not essential, useful but not essential, and essential," respectively.²⁴

The most widely reported measure for content validity is the content validity index which assesses the items regarding grammar, context, correctness of words, and appropriate scoring.¹⁸ After the items have been identified for inclusion in the final form, CVI will be computed for the

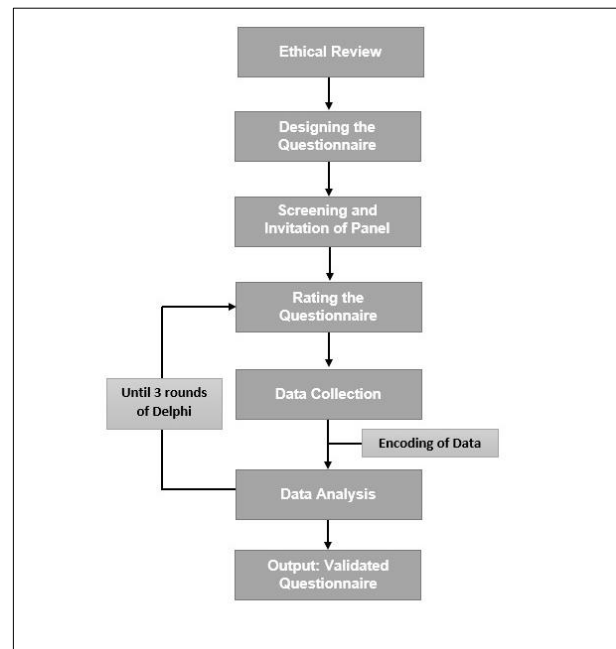


Figure 1. Data Gathering Procedure of the Study

whole test. The CVI is the mean of the CVR values of the retained items. CVI will be determined by the same experts who evaluated the questionnaire using the 4-point Likert scale, wherein each item will be scored for relevancy and clarity from 1 to 4, which corresponds to "not relevant and/or not clear, item needs some revision, relevant and/or clear but need minor

revision, and very relevant and/or very clear" respectively.¹⁸

CVI will be calculated using the following formula:

$$CVI = \frac{\text{Number of raters choosing points 3 and 4}}{\text{Total number of raters}}$$

CVI can be calculated for I-CVI and S-CVI. If the CVI is higher than 79%, between 70 and 79%, and less than 70%, the items will be considered appropriate, need revision, and eliminated, respectively. The scale's content validity ratio (S-CVR) and the scale's content validity index (S-CVI) will be acquired by computing the mean of items' CVR and CVI.

EXPECTED RESULTS

The study expects to produce a content-validated questionnaire in English consisting of four dimensions: social, epidemiological, educational, and administrative/policy. Each dimension is expected to have at least eight questions, with each question scoring at least 0.62 for CVI and greater than 79% for CVR. The formulation of a content-validated questionnaire would provide information regarding the needs of the barangays during the first phase of the PRECEDE-PROCEED model. This includes possible healthcare needs of the community that may be addressed through future CBR programs.

Individual Author's Contributions

J.N., A.C., C.R.: Conceptualized the study and study design and critically revised the manuscript. H.A., J.C., A.C., C.H., J.L., R.L., J.R., C.T.: Drafted the manuscript and will perform data collection, data analysis, and interpretation.

Disclosure Statement

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Conflicts of interest

The authors of this paper declare no financial and non-financial conflicts of interest.

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