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## Interview Protocol Refinement: Fine-Tuning Qualitative Research Interview Questions for Multi-Racial Populations in Malaysia

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### Abstract

A reliable interview protocol is the key to obtain good quality interview data. However, developing a valid interview protocol is not a simple task, especially for beginner-level researchers. Extensive understanding of the research topic is no guarantee to quality interview findings because many other factors may affect the interview process. In our study among injured workers in Malaysia, researchers face additional challenge of interviewing multi-ethnic and multi-cultural study population. Most of them are also from lower socioeconomic status and education level. The objective of this study is to refine the pre-constructed interview protocol to address these challenges for valid data collection. The protocol must be easily understood and cover all research objectives to gain insights of the worker's return to work experience. This article demonstrated the use of the 4-step Interview Protocol Refinement (IPR) Framework on the interview questionnaire. The steps were (1) ensuring alignment between interview questions and research questions, (2) constructing an inquiry-based conversation, (3) receiving feedback on interview protocols and (4) pilot testing of the interview questions. The IPR framework is an effective tool for improving the interview protocol reliability and validity. The refinement processes corrected some shortcoming in the pre-refined questionnaires and the pilot testing ensured that the refined questions were understood by the respondent and able to obtain the intended answers based on the research objectives. Research quality can be further enhanced by applying additional strategies during the stages of research tools validation and data analysis.

### Keywords

Interview Protocol, Interview Question, Multi-racial Refinement, Protocol Validation

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## **Interview Protocol Refinement: Fine-Tuning Qualitative Research Interview Questions for Multi-Racial Populations in Malaysia**

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*A reliable interview protocol is the key to obtain good quality interview data. However, developing a valid interview protocol is not a simple task, especially for beginner-level researchers. Extensive understanding of the research topic is no guarantee to quality interview findings because many other factors may affect the interview process. In our study among injured workers in Malaysia, researchers face additional challenge of interviewing multi-ethnic and multi-cultural study population. Most of them are also from lower socioeconomic status and education level. The objective of this study is to refine the pre-constructed interview protocol to address these challenges for valid data collection. The protocol must be easily understood and cover all research objectives to gain insights of the worker's return to work experience. This article demonstrated the use of the 4-step Interview Protocol Refinement (IPR) Framework on the interview questionnaire. The steps were (1) ensuring alignment between interview questions and research questions, (2) constructing an inquiry-based conversation, (3) receiving feedback on interview protocols and (4) pilot testing of the interview questions. The IPR framework is an effective tool for improving the interview protocol reliability and validity. The refinement processes corrected some shortcoming in the pre-refined questionnaires and the pilot testing ensured that the refined questions were understood by the respondent and able to obtain the intended answers based on the research objectives. Research quality can be further enhanced by applying additional strategies during the stages of research tools validation and data analysis. Keywords: Interview Protocol, Interview Question, Multi-racial Refinement, Protocol Validation*

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A reliable Interview Protocol is crucial to obtain good qualitative data. It facilitates the interview process involving various groups of people in a systematic, consistent and comprehensive manner, through prior delimitation of the issues to be explored (Gugiu & Rodriguez-Campos, 2007; Patton, 2015) In addition, an interview protocol increases the effectiveness of an interview process by ensuring comprehensive information is obtained within the allocated time. Rich qualitative data helps the researchers to gain better understanding of the respondents' experience and identify crucial elements relevant to the subject matter.

Literature reviews on interview protocol development showed that many researchers emphasized routine components such as interview ethics, interviewing skills, questions construction and interview settings. Some authors suggested that the contents of interview questions should be designed based on the researcher's understanding of the subject matter (Jacob & Furgerson, 2012; Kim, 2010; Turner III, 2010). On the other hand, some authors argued that extensive understanding on the research topics alone is not adequate to guarantee the development of reliable interview questions. The experience level of the researchers exerted bigger influence on the tool reliability and the data collection quality (Turner III,

2010). These suggestions are not very helpful for beginner-level qualitative researchers in their interview protocol development. Beginner level researchers are more likely to deviate from research objectives due lack of experience and control during the interview process. There is higher risk of deviation when the researchers are faced with outspoken respondents who dominate the conversation. As a result, the consistency and neutrality of the interview are affected.

The instruments used for the interview process should pass the reliability and validity tests before being considered as a reliable tool. In qualitative studies, the most important measurement of reliability and validity is the quality of the research findings (Golafshani, 2003; Lincoln & Guba, 1999; Stenbacka, 2001). In addition, Lincoln and Guba (1999) further explained that credibility, transferability or applicability, dependability or consistency and conformability or neutrality of the research are essential criteria in determining the quality of the study. To ensure high quality results, some strategies should be employed during the study design stage, while other strategies are further applied during data collection and data interpretation (Krefting, 1991). The quality of the interview data can be improved by using refinement steps at interview protocol development stage and applying evidence-based strategies to improve the trustworthiness of the interview findings, e.g., using triangulation and members checking (Clark & Creswell, 2014).

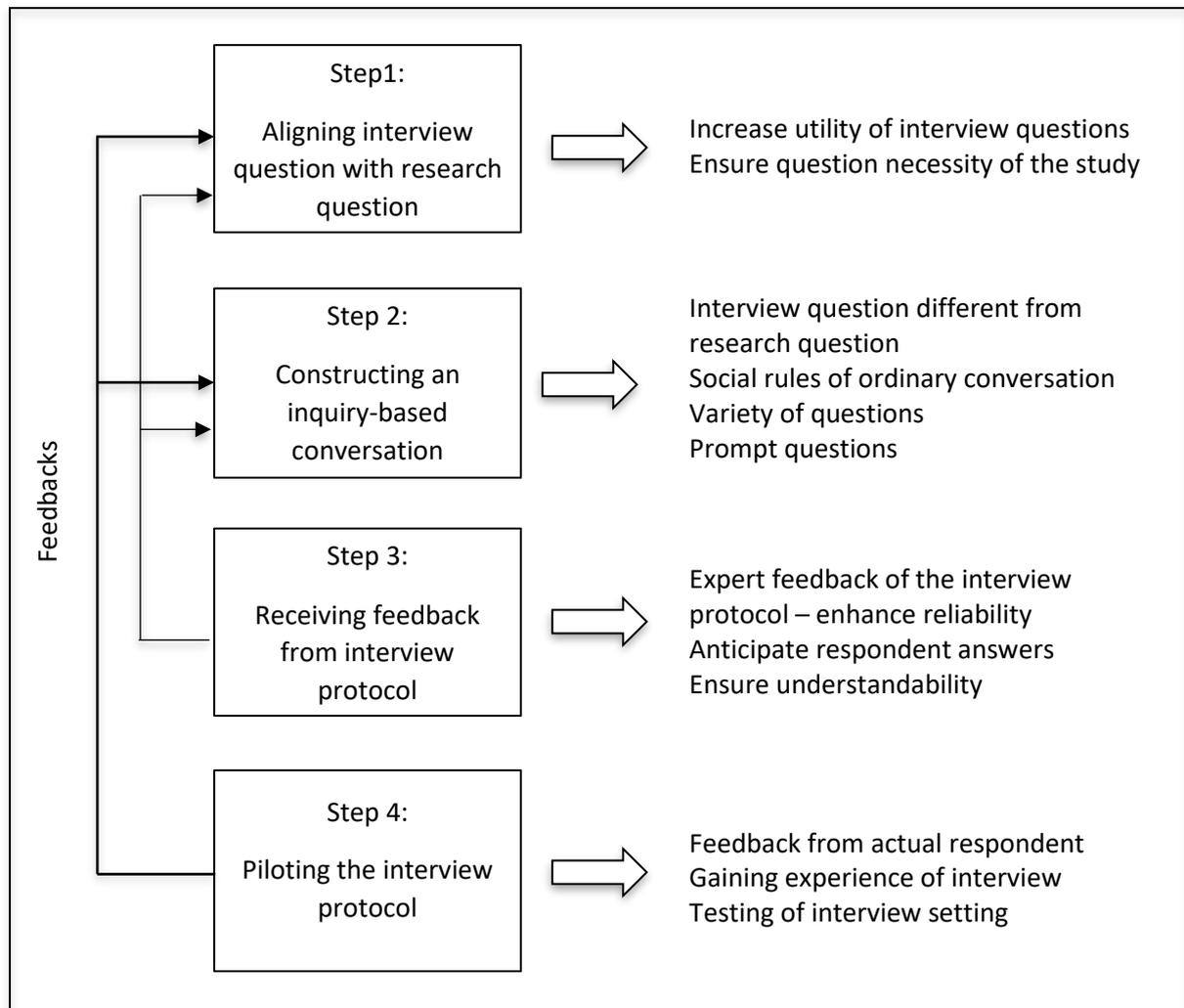
In the Malaysian context, researchers face additional challenges in developing a reliable and valid interview protocol due to the multi-racial social fabric. Various languages are in use by the study population. Researchers need to ensure that the focus of the interview is consistent when conducted in different languages. At the same time, the interview questions need to be comprehensive enough to suit the different cultural backgrounds, needs and sensitivities. Conducting interviews in non-mother tongue languages also poses additional challenges in communication and rapport building. For example, the study population in our research consisted of the injured workers from the lower income group. Their relatively low literacy level and limited language command may affect the quality and depth of the interview data obtained.

Facing these challenges, the authors were in opinion that interview protocol refinement steps were essential for us to obtain quality data and overcome language barriers that might be faced during the actual interview. Our hypothesis is that the Interview Protocol Refinement (IPR) Framework (Castillo-Montoya, 2016) is a useful tool for multiracial interview protocol refinement. The IPR framework provides a systematic approach in fine-tuning the interview questions. The IPR framework stipulates the following four steps of: (1) ensuring interview questions align with research questions. (2) constructing an inquiry-based conversation. (3) receiving feedback on interview protocols and (4) piloting interview protocol (Castillo-Montoya, 2016). The IPR framework has rigorous steps to adhere to during the interview protocol refinement, in order for the constructed questions to be congruent with the study objectives (Jones, Torres, & Arminio, 2013). It is also unique because pilot testing has been included as the final refinement step; thus, became mandatory for researchers to gauge and check the effectiveness of the refined protocol before actual fieldwork.

The authors propose that the IPR steps do not have to strictly conform to the sequence laid out in the IPR framework. Each step can be repeatedly reviewed and refined, with addition of new input from the subsequent phases (Figure 1). The interview questions can be re-modified with input from pilot test findings. The corrected interview questions are then subjected to second round of pilot testing. According to the IPR framework, the pilot testing is the final step in the process. The authors have integrated the feedback obtained from initial IPR, to further refine the interview protocol. This refine-pilot test-retest steps were essential to fine-tune the interview protocol, in order to suit our multiracial, multicultural study population (Maxwell, 2012). This process also helped the researchers to comprehensively

cover all research objectives and empower the researchers to carry out goal-directed interviews with confidence.

Figure 1. Processes of Fine-Tuning Interview Protocol.

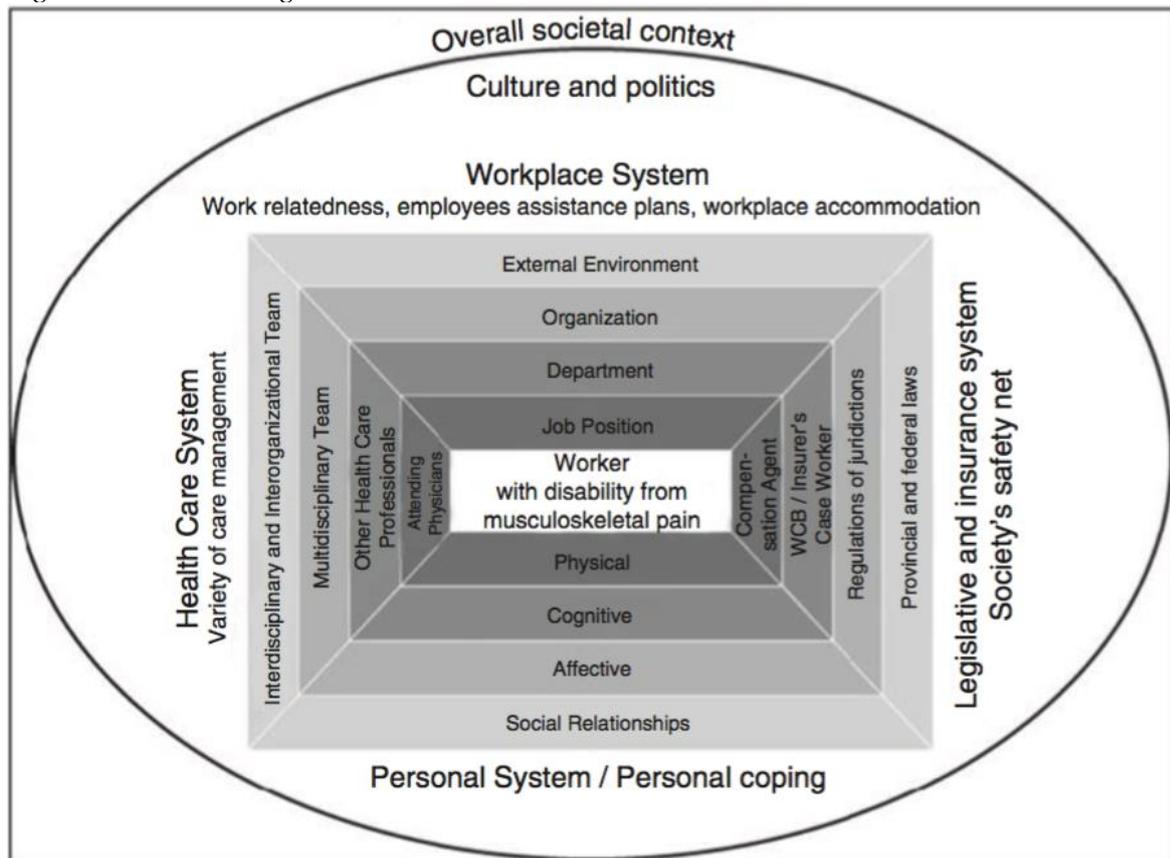


The main objective of this paper is to refine the pre-constructed interview protocol using IPR framework for valid data collection. This IPR process was applied on a pre-designed set of interview questions for our main research on “Contributing Factors for Successful Outcome among Injured Workers under Social Security Organization (SOCSO) Malaysia Return to Work (RTW) Program.” This study has obtained the approval from the National Medical Research Register and Research Ethical Committee of National University of Malaysia.

### Background of Interview Protocol

The RTW program provides assistance for insured workers suffering from employment injury or permanent disability in Malaysia. The majority of these workers are from the lower socio-economic group, which constitutes the study population. Their relatively low literacy level and poor command of English were considered during the interview protocol development. The authors developed the protocol in both English and Malay language to suit the study population.

Figure 2. Case Management Model.



From “*Prevention of Work Disability due to Musculoskeletal Disorders: the Challenge of Implementing Evidence*” (Loisel et al., 2005). Copyright 2005 by Springer Science + Business Media, Inc.

The Loisel’s Case Management model (2005) was adopted in designing the interview protocol. The model systematically explored the roles contributed by all the parties involved in the rehabilitation process and has been recognized as the most up-to-date RTW model (Knauf & Schultz, 2016). The model identified the workers, workplace, healthcare and insurance system as the four main stakeholders in RTW intervention (Figure 2). Most importantly, this model mimics the RTW program in Malaysia that involved similar stakeholders. A semi-structured interview protocol was developed for our study to explore the following research questions:

- 1) What are the positive and negative factors for RTW outcomes from each stakeholder?
- 2) How does the societal, cultural and political contexts in Malaysia influence the factors of RTW outcome in (1)?
- 3) What is the workers’ perception towards SOCSO’s RTW Program?
- 4) Does the Loisel’s Case Management model fit the Malaysian RTW context?

The interview protocol was designed to explore the RTW experiences of the respondents and how these relate with the respondents’ personal background and disabilities. Semi-structured interview allows the researcher to probe the roles of each stakeholder in multiple dimensions, based on the Loisel’s Case Management model. In addition, the interview was designed to

allow capturing of new information for factors not covered in the model. We do not recommend the use of an unstructured interview because beginner-level researchers may miss or over-discuss on certain factors of interest; resulting in incomplete exploration of the research objectives (Rabionet, 2011).

### Interview Protocol Refinement Process

#### Step 1: Aligning Interview Questions with Research Questions

The questions are mapped into an interview protocol matrix as shown in Table 1. The researchers examine the constructed questions and identified any gaps that may be present. The researchers are allowed to fill the gap by adding relevant questions into the protocol based on their research objectives (Castillo-Montoya, 2016).

Table 1. Interview Protocol Matrix.

	Background Information	RQ1: Positive and negative factors of RTW	RQ2: Socio-cultural or political influence of RTW outcome	RQ3: Perception of RTW Program	RQ4: Fitness of Loisel's model
I. Introduction					
Interview Q1	X				
Interview Q2	X				
Interview Q3	X		X		
Interview Q4	X				
Interview Q5				X	
II. Personal					
Interview Q1		X			
Interview Q2		X			
Interview Q3		X			
Interview Q4		X			
Interview Q5		X	X		
Interview Q6		X	X		
Interview Q7					
III. Healthcare					
Interview Q1	X				
Interview Q2		X		X	
Interview Q3		X	X	X	
Interview Q4		X	X	X	
Interview Q5	X	X	X		
Interview Q6					

IV. Workplace					
Interview Q1	X		X		
Interview Q2		X			
Interview Q3		X			
Interview Q4				X	
Interview Q5					
V. Insurer					
Interview Q1	X				
Interview Q2	X				
Interview Q3		X	X		
Interview Q4		X		X	
Interview Q5		X			
Interview Q6					

Note. RQ = Research Question

Our interview protocol begins with the introductory questions which extricate background information such as demographic events leading to engagement with RTW program (e.g., how the injury is sustained, medical treatment and rehabilitation process), their current job scopes, workplace environment and interpersonal relationship at workplace. The answers to these questions are based on respondent recall. The interview is followed by open-ended questions on the RTW process that the worker had experienced. These introductory and probing questions were constructed to facilitate conversational interaction. The interviewer seeks to explore and identify possible contributing factors of RTW based on the workers’ descriptions of their experience.

The interviewer can repeat the respondents’ described experience as example, in order to stimulate the respondents to further explain their thoughts. This process also assists the interviewer to gain further insight and understanding of what was perceived by the respondent. The same strategy is employed to explore every positive and negative experience identified, in order to relate how each factor influenced and affected their RTW journey.

The interviewer can identify many positive and negative experience from each stages of respondent recall. For example, a failed compensation claim may be perceived by the respondent as lack of trust from the insurance organization. The interviewer should further probe the respondent’s feeling about this unpleasant episode and explore how it actually affected their return to work progress and outcome. The interviewer can also relate this experience to the respondent’s social-cultural background, to examine how these factors influenced the respondents’ behavior, attitude and expectation towards the RTW program. This detailed focused interview process and further exploration into the interplay between the factors identified were aimed at gaining comprehensive understanding of research question 2.

The interview protocol was designed to have a final open-ended question at the end of each sections that allows the respondent to freely expressed any additional thoughts. This question is specially designed to capture any new insight that may surface during interview conversation.

The research question number 4 – “Does the Loisel’s Case Management Model fits the Malaysian RTW context,” cannot be elicited directly from interview questions. The

answer can only be derived from analyzing the qualitative data collected from all respondents. Therefore, there is no question constructed.

The mapping of interview protocol matrix ensured that all research questions are covered by the interview protocol. More questions were constructed for exploration of the RTW predictors (research question 1) as the main purpose of the study. There were fewer number of questions for research question 3 (workers' perception of RTW Program) because the respondent's replies for the questions on positive and negative contributing factors of RTW have provided insights into workers perception of the RTW Program.

## **Step 2: Constructing an Inquiry-Based Conversation**

The cornerstone of this phase is the refinement of the proposed questions from formal academic language to daily conversation discourse. According to the IPR framework, the interview questions should be written differently from the research questions. The research questions are formulated based on the researchers understanding of an event, whereas interview questions are phrased to gain the understanding of the respondents' perception on that area of study. The interview questions are also organized in accordance to social norms of ordinary conversation. Various follow up questions are also prepared for different conversation style (Castillo-Montoya, 2016).

Our interview started with introductory questions that every respondent can answer. This facilitates alleviating anxiety and rapport building. The questions on their perception and evaluation of their RTW experience were asked later. These follow up and prompting questions for specific answers were structured to obtain rich information. Due to the multiracial study population, the authors had made additional modification based on feedback from pilot testing (step 4 of IPR process) and the modified protocol was retested again. For example, after we did pilot testing on a native Malay speaking respondent, the researchers felt compelled to repeat the pilot testing on a non-native Malay speaking respondent. Some questions required few rounds of testing before a universally accepted format was formulated.

The opening script in the first part of the protocol explained the objectives of the study and assured of confidentiality of the interview response. We discovered that our study population needed this "no repercussion resulted from the interview" assurance for their cooperation and truthful sharing of their experience.

This is followed by the introductory question that is casual and friendly. At this stage, the interviewer aimed to gauge the respondent's conversation style, literacy level and to build rapport. The interviewer should adjust the language level and review if the interview style were culturally appropriate and respectful to the respondent (Rabionet, 2011). We discovered that most of our respondents have the tendency to use certain English phrases in an otherwise predominantly Malay language conversation. Therefore, some English words such as "recommend" and "depression" were better understood by the respondents than the native Malay terms of "*mengesyorkan*" and "*kemurungan*." In addition, we discovered that English-speaking respondents preferred formal language style during the interview, whereas Malay speaking respondents were more comfortable with casual everyday language. The interviewer is encouraged to mirror the language style of the respondent for a smooth conversational interview.

From our refinement process, we found that many of these language refinement points were discovered during the later IPR stages of experts' review (Step 3) and pilot test (Step 4). Apart from modifying for language acceptance, the authors constructed the inquiry-based questionnaire based by adding probing questions at suitable sequence. Respondents with lower literacy level also required further explanation on formal terminology used and the

objectives of the interview questions. For example, when asked “Did you encounter any discrimination during your insurance claim process?” some respondents did not understand the meaning of discrimination. The question was modified, after pilot testing, to “Did you ever feel being treated unfairly during your insurance claim process?” Regardless of a “yes” or “no” response to the question above, the respondents were asked “Was it due to your injury status or any other reason that you can think of?” Such probing questions were added to verify if the respondent had ever felt being discriminated, which he or she may initially conceal out of “politeness.” This “politeness” was uniquely seen in Asian populations because they were taught to report good things and conceal bad things in front of others throughout their lives. As the interview continued, further stimulating statements, such as, “Some people may think that the disabled claimant is trying to solicit extra compensation from the insurance” can be given to encourage in depth discussion into this topic.

These questions construction should not be seen as manipulative but a way to encourage meaningful discussion in our local context. However, the interviewer should objectively determine if the element of discrimination was present after having completely explored and understood the respondent’s perspectives.

### **Step 3: Receiving Feedback on Interview Protocols**

This stage involved receiving input on the interview protocol feasibility from two experienced qualitative research lecturers and two research colleagues, who were familiar with the SOCSO RTW Program. The reviewers were selected from different races and must be able to communicate in at least two languages. They examined the protocol structure, length, writing style and ease of understanding. Special attention was given to the ethical and cultural sensitivities of the interview questions. The Introductory Script and Informed Consent Sheet were also included for review.

The review process was assisted by the Activity Checklist for Close Reading of Interview Protocol (Castillo-Montoya, 2016), which consists of 15 items. The examiners were required to read aloud each question and mark “yes or no” based on the checklist criteria. The criteria included clarity, simplicity, and answerability. The examiners can give additional feedback and suggestion for improvement on any items that were beyond the scope of the checklist. The examiners were told to put themselves in place of the respondents and anticipate how the actual respondent may understand and answer the questions. The process was conducted for both English and Malay languages versions of the interview protocol. Although this study had received ethics approval earlier, the lecturers reviewed the study questions for any ethical concern.

The process received some useful feedback to further improve the lexicon in the interview so that appropriate words were used in the protocol to address respondent disability and ensure politeness of prompting questions. Choice of words for such questions in both English and Malay languages were decided with the consensus from the lecturers and researchers. The interview questions were also reviewed to remove any elements that might imply incompetency of any stakeholder; or suggest to the respondent to blame a certain party in their RTW program. To achieve this, the interview questions were phrased in neutral tone in order not to influence the respondents’ thinking process.

The reviewers provided the researchers with additional feedback and suggestions as follows:

- The interviewer can break the interview process into a few smaller sessions, instead of a single long session. Each smaller session is planned to explore only one or two particular stakeholders’ role (according to Loisel’s model).

The reviewers were concerned that exploring all four stakeholders' roles in a single long interview session, may be confusing and distractive for the interviewers and respondents.

- The interviewer should prepare a glossary of synonyms or explanations in short phrases for terminologies used in the questionnaire, in both English and Malay languages.
- The interviewer need not strictly follow the sequence laid out in the interview protocol sequence during the interview. Respondents should be given some freedom to express their opinion. The interviewer was advised to follow the respondent's flow of thoughts, to probe deeper into the conversation for richer data. However, the protocol should be vetted for completeness and to ensure that no important information was missed.

#### **Step 4: Pilot Test the Interview Protocol**

In any research, the researcher must ensure that the instrument can perform the desired job as required by the research objectives (Dikko, 2016). Pilot testing the instrument ensured that the questionnaire would work as intended in real practice. The proper testing should closely simulate the actual interview process in real environment (Kim, 2010). For the purpose of this study, pilot testing was also assessed for the cultural and political sensitivities that may be encountered during the interview process.

The pilot testing was conducted at SOCSO Rehabilitation Centre in Ayer Keroh, Melaka, Malaysia. The injured workers were undergoing their intensive physical and vocational rehabilitation at this facility. Five workers were selected randomly for the pilot testing by the case managers. The interviews were conducted in a private clinic consultation room, lasting on average one hour for each respondent. The interviewer introduced herself, explained the research objectives, obtained informed consent and asked participants to identify the preferred language for the interview. The interviewer assured the respondent that the dialogue was strictly confidential and would not affect the process of their rehabilitation. Having completed the introduction segment, the interviewer obtained feedback on the introductory script before proceeding to the first interview question.

The pilot testing was very productive as many unexpected but useful findings were revealed. This feedback helped the researchers to further refine the questionnaires for its clarity, user-friendliness and smoother flow of conversation. One of the most significant critiques was many respondents found it difficult to answer the expansive open-ended questions. The researcher initially thought that starting the interview with expansive open-ended questions would allow for the respondent to speak without inhibitions, and lead to the discovery of important information (Jacob & Furgerson, 2012). However, our local respondents were confused by this type of open-ended question and often answered with brief irrelevant answers. For example, when the respondents were asked, "Can you tell me about your personal experience of the RTW program?" The answer received from most respondents was, "*It is a good program and all the services are provided free of charges*" or "*I think it's good*" or "*There are a lot of helpful people here in the Centre helping us.*" The responses received were at most 3 sentences long. We believe this was not related to the literacy level, but due to the local education system and family upbringing that resulted in shyness to share their thoughts openly.

Nevertheless, the researchers observed that the respondents actually had more to say on the interview questions through their body language and facial expression. Therefore, close-ended probing questions were added after the initial open-ended questions. The interview protocol was then retested. Contrary to the reports in literature, we observed that

these close-ended questions served to improve the flow of conversation instead of hindering the interview process. This strategy, however, should not be applied universally, but should only be employed after proper test-retest depending on the circumstances.

For example, in our study, the questions were reconstructed into the following lines:

Opening Line:

“Can you tell me about your personal experience of RTW program?”

When required, further questions can be added:

“How long have you participated in this program?”

“How do you feel about the services provided?”

“What about the healthcare personnel/insurer/case manager involved in your case? Is it easy to work with them throughout your rehabilitation?”

The researchers also discovered that the local respondents were not thinking broadly when asked to explore their positive or negative personal perception of the RTW process. Most respondents would only relate to one single factor if not probed further. In addition, the interviewers needed to prompt the respondents by repeating the factors mentioned by them earlier, in order to evaluate and relate their experience on those factors. For example, “In your opinion, which personal characteristics are important positive factors for your RTW?” Most respondents would speak only on one particular factor, which happened to be “determination.” However, when the interviewer listed several other options such as “motivation,” “confidence,” “self-esteem,” “eagerness to succeed” etc., the respondent would then start to reflect on how these factors positively influenced their RTW outcomes. The researchers structured the interview in this way to provide the guidance necessary to properly evaluate all the RTW factors.

As anticipated by the expert reviewers, most interviews conducted during the pilot test did not follow exact sequence planned out in the protocol. Therefore, certain questions were rearranged to maintain the focus of interview (Creswell, 2007). The interview protocol served as a checklist for the interviewer to cover all the areas.

Questions that were not relevant or not suitable were either discarded or modified. For example, all respondents gave the similar answer for question 3 in the list below, to answers in question no. 1 and 2 during the pilot interviews. Hence, question no. 3 was discarded in the revised questionnaire:

1. In your opinion, which personal factors are important positive factors to your RTW?
2. On the other hand, what are the personal factors that are obstacles to your RTW?
3. Do you think your personality (pre and post-injury) has an influence on your RTW outcome? [Discarded]

Lastly, revisions were made on the language and terminology used in the interview protocol based on respondent feedback. Common daily conversational words were adopted as much as possible. Clarity of the phrases used, user-friendliness and relevance to the research objectives were constantly re-examined during the pilot testing.

In spite of all the refinements made, we feel that a fool-proof localized interview protocol that suited every respondent would not be possible due to the diverse inter-ethnic and intra-ethnic differences in language and styles that exist in our study population. For example, Malays from West Peninsular Malaysia and East Peninsular Malaysia have totally

different vocabulary systems. Similarly, Chinese from West Malaysia and East Borneo Malaysia have a different understanding to the Malay language. As such, the interviewers must pay attention to individual language and conversation style during the interview process and seek clarification with the respondent wherever necessary to avoid misinterpretation.

### **Discussion**

There is no gold standard method for interview protocol refinement. Researchers are advised to consider the research objective and characteristic of their study populations when choosing the refinement method. The ultimate goal is to construct a reliable interview protocol for data collection. We find that the IPR framework helps to ensure the credibility of the refinement process. Step 3 “Review by expert panel” and Step 4 “Pilot Testing” in the IPR framework were very helpful in enhancing the practicability and credibility of the interview protocol. Besides that, the IPR framework recommends recruiting local researchers from different language and social background to review the protocol. The pilot testing should be conducted by trained interviewer on the actual respondents for realistic feedbacks. Sandelowski (1986) suggested that “a qualitative study is credible when it presents such faithful descriptions or interpretation of human experience that people having that experience would immediately recognize it from those descriptions or interpretations as their own” (p. 30).

A study on a structured forensic interview protocol in France reported that using recall prompts prior to more focused prompt questions enhance the accuracy of the interview, without limiting responses to the investigator-specified categories (Lamb, Orbach, Hershkowitz, Esplin, & Horowitz, 2007). Another study showed that a validated structured forensic interview protocol has higher level of inter-rater reliability compared with interview using an unstructured protocol (Hershkowitz, Fisher, Lamb, & Horowitz, 2007). The better inter-rater reliability was deemed to be developed by incorporation of expert input on interviewing techniques, during the interview protocol validation process.

During the protocol refinement, the expert reviewers placed emphasis on neutrality of the interview questions and ensured that the prompt questions were constructed in an ethical and polite manner. Respondents were also assured of confidentiality to allow them to express their thoughts freely without concerns of repercussions to their RTW program status. This is in line with the principle of the interview findings being function solely of the respondents and conditions of the research and not of other biases, motivations, and perspectives, (Lincoln & Guba, 1999). In this study, the researches added some suggestive questions to the interview protocol after careful pilot testing and soliciting feedbacks from the expert reviewers. It is commonly believed that these close-ended questions should be avoided because they are researcher-led questions which may skew the responses to the outcome intended by the researcher. Therefore, the researchers of this study are mindful of only positioning these close-ended questions after information recall from an open-ended question. This construct was then revalidated again via pilot testing and we found that it helped with information gathering from our workers study populations. A similar strategy was employed by Lamb et al. which suggested that respondents should be given the opportunity to recall information in open ended prompts before researchers employ more risky interviewing techniques (Lamb et al., 2007).

A reliable and valid interview protocol alone is not enough because many other factors may still influence the research project. Additional strategies to improve research quality and rigor should be incorporated during the stages of research design, data collection and data analysis. Clark and Creswell (2014) emphasized that “the findings that emerged

from the data analysis process should be accurate and credible representations of the gathered data and participants' experiences" (p. 364).

Additional validation steps during data analysis along with the IPR framework can further improve the rigor and quality of the research findings. In certain situations, the respondents may not give accurate information, or their perception may not be reflecting the true event. Validation strategies such as bracketing, triangulation and member checking should be employed during the data analysis steps. For example, the workers may not realize that they have received monetary subsidy in the forms of their free medical and rehabilitation treatment, and thus provided inaccurate information to the researcher. Triangulation of the interview data with other information sources, such as from the medical or manager records helped the researcher to understand the actual circumstances.

In conclusion, the IPR framework is a very useful tool to improve the reliability and validity of an interview protocol. Its refinement steps have the unique ability to include social, cultural background, language styles and gather feedback during the interview protocol refinement. The protocol refinement should not stop after pilot testing. The researchers should further improvise the protocol during the actual study to suit the respondent characteristics. A sound interview protocol ultimately assists the researchers in obtaining quality data for the qualitative research.

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