

Illness Perception of Patients with Chronic Pain: an Internal Validation of the Subscales of the Filipino Version of the Revised Illness Perception Questionnaire (IPQ-R) in a Sample of Adult Patients with Chronic Pain Presenting for Pain Management at the Philippine General Hospital

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ABSTRACT

Objective. The present study aimed to determine the internal validity of the different subscales of the Filipino version of Revised Illness Perception Questionnaire (IPQ-R) among patients with chronic pain.

Methods. A cross-sectional study involving chronic pain outpatients at the Philippine General Hospital Pain Clinic and inpatients admitted between September 2016 to November 2016 was done. Data were obtained through self-administered Filipino version of the IPQ-R. Internal structure of the questionnaire was analyzed using Cronbach's alpha coefficients and confirmatory factor analysis.

Results. A total of 143 patients with chronic pain participated; mean age was 54.9 years. The consistencies of the Filipino version of IPQ-R dimensions for *consequence*, *illness coherence*, *timeline (cyclical)*, and *emotional representation* were within conventional limits with small variations from the original English IPQ-R. However, *timeline (acute/chronic)*, *personal control*, and *treatment control* scales failed to reach consistency. By excluding seven items nevertheless, there was noted improvement in the Cronbach's alpha of the corresponding scales.

Conclusion. The inter-factor correlations of the Filipino version were relatively similar to those reported in the original English IPQ-R. The modified questionnaire showed good validity and could be a valuable instrument in the assessment of illness perceptions in the Filipino health care setting.

Key Words: *chronic pain, illness perception, Revised Illness Perception Questionnaire (IPQ-R)*

Introduction

Chronic pain

The International Association for the Study of Pain (IASP) defines pain as "an unpleasant sensory and emotional experience arising from actual or potential tissue damage or described in terms of such damage." Chronic pain diminishes a person's quality of life, results to loss of work productivity, and may be associated with psychiatric conditions. A great number of researches have shown that psychosocial factors play an influential role in the development and continuance of chronic pain conditions. Apart from being an indication of the body's biological state, cultural and social factors may also affect the expression and management of pain. Therefore, understanding the perception and treatment of pain can direct clinicians in delivering appropriate patient care.

Prevalence of chronic pain in the Philippines

A quantitative study by Lu et al¹ in 2011 has provided important insights into the prevalence and incidence of chronic pain and the attitudes of Filipinos to its treatment and medications. This large nationwide quantitative survey showed an overall prevalence of 10.4% moderate to severe chronic pain in the general adult population, with an annual incidence rate of 3.4%. Moderate to severe chronic pain affected 48% of sufferers to such an extent that they were unable to carry out daily routine work.¹ Attitudes towards medical treatment were positive and the study showed that treatment for pain is prevalent. Of the 4.4 million moderate to severe chronic pain sufferers who had ever received treatment to manage their pain, 80.1% reported that they were currently receiving treatment, while only 2.7% had never received treatment for their pain. Results from this study showed that the majority of pain sufferers have at some point been treated for their pain, but the number of those currently receiving treatment is lower by 20%.¹ The general perception of health is positive, and many Filipinos are receptive to treatment. However, the study also revealed a substantial gap between the treatments received and the patients' expectations of pain relief.¹

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Chronic pain and treatment compliance

Despite the great progress made in the field of pain medicine, there are still overlooked areas in patient care. There is a scarcity of data published on compliance with outpatient appointments among patients with chronic pain. Literature indicates that, despite extensive recommendations, treatment compliance is a problem with pain management. Compliance in patients with chronic pain is particularly important wherein dysfunctionality may result from non-adherence to prescribed treatment regimen. Effective pain treatment strategies must therefore be employed to prevent disability and lessen economic costs. However, barriers to chronic pain management exist and compliance has previously been highlighted as a neglected issue in the treatment of patients with chronic pain.² Pain is personal and subjective; it is affected by psychosocial factors and demonstrates individual variation, which are essential in causing, maintaining, and exacerbating disease. It has been identified that even moderate levels of stress, anxiety, or depression makes the pain felt more acute and more disabling.² Without treatment, the emotional components of pain may increase steadily and make pain control and restoration of function difficult.² This area may facilitate in designing psychological interventions to benefit chronic pain patients to cope with their illness, thereby also possibly improving compliance.

Philippine General Hospital - Pain Clinic

The Pain Clinic, located at the Outpatient Department of the University of the Philippines - Philippine General Hospital (UP-PGH), accommodates a wide variety of cases for complaints related to pain. It has an established liaison with the hospital's Department of Psychiatry and Behavioral Medicine to provide a more comprehensive approach in the treatment of patients with chronic pain. However, in a study by Escandolor et al in 2003, poor compliance to initial and subsequent psychiatric assessment schedules had been cited. Despite the pain interference and possible high psychological morbidity, 47% did not have subsequent consult. This study had been undertaken to examine the factors associated with nonadherence to scheduled outpatient visits. Accounts regarding the possible reasons have theorized factors related to the primary diagnosis, social and environmental concerns, and misconceptions about the need for such consult.² The findings revealed that an oncologic diagnosis was highly correlated with nonadherence to subsequent outpatient consults, while demographic factors, perception of pain interference as well as complexity of treatment regimen were found not to be correlated.

An important undertaking for research is to recognize the factors that influence adherence or health behavior for the management of illness and to identify appropriate targets for intervention. Much research on adherence has

focused on the perceptual and cognitive factors that underlie motivation or intention to attend health care appointments or adopt behaviors that are proposed to improve health.³ Social cognitive models provide a theoretical framework for the study of illness behavior and adherence to self-management techniques. A theoretical model that has addressed how cognitive factors influence illness coping behaviors and outcomes is the Common Sense Model (CSM) of illness.

Common Sense Model (CSM) of self-regulation

The CSM proposes that individuals create mental representations of their illness based on the concrete and abstract sources of information available in order to make sense of and manage the problem in response to illness and other health threats. It is a dynamic model wherein two sets of representations are appraised on a continuing basis, which may be modified during different stages of a disease. It is the interpretation of this information that forms the first step in the process of seeking help, engaging in a coping strategy, or adopting an illness management regimen.³ An illness representation is guided by three basic sources of information⁴: the first source of information is the general pool of lay information assimilated from previous social communication and cultural knowledge of the illness; the second source is information from the external social environment, from perceived significant others or authoritative sources; and finally, the individual completes his illness representation by taking into account the current experience with the illness.³ Current experience refers to the symptomatic information based on present perceptions and previous experiences with the illness, which also encompasses knowledge of the effectiveness of previous means used to cope with the illness.

Individuals will exhibit a characteristic illness representation profile for illness according to its symptomatic features and chronicity. Information from these sources contributes to forming a representation of a condition, which comes into play as soon as patient experiences the initial symptoms and typically changes with disease progression, emergent symptoms, and treatment responses. Leventhal⁴ proposes that these representations reflect the cognitive response to symptoms and illness, and that emotional responses are processed in parallel to illness representations, in that simultaneous cognitive and emotional representations of their illness are made. These in turn will give rise to problem-based and emotion-focused coping procedures, respectively. The process in constructing this representation is symmetrical in which links are made between the abstract and concrete sources of information.⁵

There is growing interest in representations of illness for understanding its psychological influence, for explaining patterns of care seeking and adherence to treatment

recommendation, and for examining the responses to psychological interventions.⁶

Illness perception models consist of theoretical frameworks to organize information on beliefs and expectations into distinct but interrelated dimensions. The dimensions are recognized as inquiry into how individuals construct a representation of their illness and plan strategies for coping with an illness. The model draws upon a wide range of research including symptom perception and fear arousal to understand how biological, psychological, and social factors converge in a dynamic fashion to form a patient's perception of his illness.⁷ This initiative to tie symptoms and diagnoses seems pertinent to understanding responses to health consultations and treatment. These constructs have theoretical underpinnings and may have the potential advantage to understand individual chronic pain sufferers.

Relationship of illness cognitions with coping strategies

The theoretical framework proposed that illness representations, based around distinct components, determine coping and may be important determinants of emotional outcomes. Several researches have investigated the association between the dimensions and health behaviors that individuals adopt in response to their illness. Leventhal's model makes an explicit link between illness cognitions and coping behaviors and strategies.³ The model proposes that illness perceptions, which act as an interpretive schema for the available sources of information, guide the action in responding to the illness threat and directly affect coping responses and self-management behaviors. Further, the model implies that the relationship is causal, in which the illness cognition will exact an effect on coping behaviors in proportion with the perceived severity of the illness.³ Illness perceptions thus have proven to be predictive of coping and adjustment in many chronically ill patients.⁸ Empirically, this premise has been supported with both cross-sectional and longitudinal data.³

Relationship of illness cognitions with illness outcomes

Theory and research on illness cognition have made associations between illness outcomes such as psychological and physical adjustment, and illness representations.³ These proposed relationships represent a mediational model, in which coping responses mediate the effect of illness representations on health outcomes.³ These associations have been supported empirically by studies on a number of illnesses.³ The dimensions of strong illness identity, belief in long illness timeline, and negative consequences of the illness, together with a passive coping style, were associated with poorer outcome on measures of functioning. These associations may only reflect relationships relevant to current experiences with the illness, which could be confounded by illness state.³

The Revised Illness Perception Questionnaire

In view of the growing interest in representations of illness, both in attempting to understand the nature of illness-related coping and for developing interventions to facilitate self-management in chronic illness, there is scope for developing an assessment questionnaire. The Revised Illness Perception Questionnaire (IPQ-R), developed by Moss-Morris et al., has been widely used to measure such representations in studies of illness adaptation in a wide range of conditions.

The IPQ-R was specifically constructed to assess the five components of illness representation described in CSM of self-regulation.⁶ It is a theoretically derived measure developed to assess cognitive illness representations appropriate to understanding and improving patient's management of health-threatening conditions. The evidence from studies provide quantitative support for the structural relations between the five components of illness representation described and for the expected associations between illness perceptions and a range of psychological outcomes including coping, mood, functional adaptation, and adherence to a range of medical recommendations.⁵ The measure has been adopted in several studies and its use has been successful in predicting different aspects of adaptation and recovery in chronic illness.

Data supporting the reliability and validity of the IPQ-R scales in different chronic illness populations had been presented. Recent overviews of research in this area, based on differing methodologies across a range of various clinical conditions, confirmed the consistency and validity of these five components of illness representations.⁶ Further analysis demonstrated good evidence for both the internal reliability of the subscales and the retest reliability.⁵ The data on the concurrent, discriminative, and predictive validity of the IPQ-R were also encouraging.⁶ Expected correlations were obtained between the scales and established measures of disability, coping, self-rated health status, and health distress.⁶ Coping was considered a mediating factor between illness representations and outcome and associations were found between IPQ-R scale scores and coping.

In the generic form of the questionnaire, the word 'illness' is used, but in this study, 'chronic pain' or 'pangmatagalang pananakit' (PP) was substituted, and for ease of reading will be used throughout the rest of this paper.

Chronic pain and the Common Sense Model of self-regulation

Illness beliefs which are held, influence decision to initiate a consultation as well as the persistence of symptoms and the degree of disability.⁹ Chronic pain is an appropriate disorder for studying the inter-relationship of culture, mental health, and medical illness because of deeply rooted cultural meanings, the emotional burden, and underuse of effective therapy. The drive to match symptoms and diagnoses seems pertinent to understanding chronic pain

patients' responses to health consultations and treatment, as not every patient receives clear diagnoses for unpleasant sensory experiences.⁷ Patients' perception of pain is relevant as it has impact on help-seeking behaviors and response to treatment. A theoretical approach of the model could be useful for understanding chronic pain patients' perceptions, which may be more useful as they are based on an understanding of underlying psychological processes and which are more sensitive to the patient's perspective.

Illness beliefs are commonly assessed using the IPQ-R, a validated measure that has been widely used and translated into a number of languages. However, studies in this research area have been lacking in the Philippines, therefore an evaluation of a Filipino version of IPQ-R, with focus on the seven subscales, seems warranted.

Understanding the patient's illness representations will enable a clinician to appreciate sufferers' response to illness, to develop an empathic relationship, and to communicate his interpretation and recommendations for treatment more effectively.⁹ A better understanding of the subjective experience of illness and of patient's distress can be gathered, negotiating a shared model and so promote collaboration and improve illness adjustment, clinical outcomes, and patient satisfaction.

The relationship between pain, illness cognitions, and disability is potentially paramount in the design of appropriate psychotherapies. The model will help in the exploration of individual variations in different domains within the framework and carry out individual modifications to therapy based on the specific component unique to them.

The results of this study will help develop an understanding of the impact of chronic pain, based on the rationale that exploring the attitudes of sufferers towards pain and their experiences is required for understanding the sufferers' behavior. Knowledge of the likely factors leading to the clinical dysfunction, the processes involved, and how these processes emerge or operate, can contribute to the treatment development research.⁹ These findings have implications in terms of providing preliminary data for a larger study, perhaps looking at development of psychosocial interventions in our local context. The analyses presented here are the first step, prior to comparing how different psychological constructs contribute to chronic pain outcome.

The aim of the study was to examine the validity of the Filipino version of the IPQ-R in patients with chronic pain. Cronbach's alpha coefficient and confirmatory factor analysis were examined to validate the internal structure of the seven domains of the Filipino version of the IPQ-R. Interrelationships among these subscales were also investigated through Pearson's correlations. Association between the dimensions of illness coherence and emotional representation to sociodemographic and clinical profile were likewise examined.

The present study also explored how patients with chronic pain perceive their illness. Because illness perceptions are mental constructs that are open to change, it may be possible for patients to adopt adaptive coping strategies through intervention on the way they perceive their illness.⁸ Results may therefore contribute to the development of programs that pay structural attention to the way these patients perceive their illness.

Operational definition

Illness perception

Upon becoming aware that one's health is threatened, individuals generally develop beliefs as a means of making sense of their illness. These beliefs are called illness perceptions or illness representations.

Chronic pain

Chronic pain has been recognized as that pain which persists past the normal time of healing (Bonica 1953).¹⁰ In practice this may be less than one month, or more often, more than six months.¹⁰ With nonmalignant pain, three months is the most convenient point of division between acute and chronic pain. For this present research purposes, three months was preferred.

Methods

Study design and setting

A cross-sectional design, investigating illness representations at one point in time, was employed. Chronic pain outpatients from the Pain Clinic and inpatients of charity division of UP-PGH who had been referred for pain management were invited to participate. Focus on the 38 items of the seven-dimensional IPQ-R was performed.

Individuals eligible for participation in this study were adult Filipino patients 19 years of age and above, who had been suffering from chronic pain of at least three months duration associated with a variety of medical conditions. Patients managed at the Pain Clinic, both newly referred and patients who were returning for their follow up consultation were included, as well as inpatients admitted at the charity division of UP-PGH and who had been managed or referred for pain management. Participants should be able to understand the Filipino language, and had willingness to participate with a signed informed consent. Participants recruited were among patients who were receiving treatment from September to November of 2016.

Individuals who were not eligible for participation were non-Filipinos or those aged 18 years old and below. Patients having a presumed psychotic disorder in the active phase, chronic psychosis, or organic mental disorder or any severe cognitive disability, including presence of severe

language or hearing disability, which would affect the quality of communication were also excluded. Exclusion criteria also included patients who were unable to participate due to severe physical discomfort; those who could not understand the Filipino language; or those who were unwilling to participate in the study by refusing to sign the informed consent.

A participant was considered not eligible to continue in the study when he decided to withdraw his consent to take part. Participants who did not pass a fully accomplished questionnaire were considered as “drop outs.” Participants who, at any time during the answering of the questionnaire, felt any discomfort with the topic of the questions and decided not to finish answering the questionnaire, were allowed to do so without sanctions.

The sample size was computed using the prevalence of moderate to severe chronic pain patients in the Philippine general adult population in a study by Lu et al¹, which was 10.4%.

Study procedure

Patients were recruited continuously over a three-month period until the appropriate sample was obtained through purposive convenience sampling. Recruitment was done during outpatient consultation at the UP-PGH Pain Clinic. Patients attending this clinic were referred to the primary investigator, and the socio-demographic questionnaire was arranged for those who agreed to participate. Inpatients who were admitted were approached by the principal investigator at their corresponding ward location. Patient details were also reviewed for eligibility to participate in the study. The participants then were invited, explained of the study, and were asked of their willingness to participate. After complete description of the study, a written informed consent form (ICF) was obtained once the participant agreed to be included and prior to the completion of the IPQ-R. The ICF and the provision of the Filipino IPQ-R were provided by the principal investigator and were administered to patients during their scheduled consultation.

Demographic and medical data were obtained from hospital charts and from the completed questionnaire. Illness perceptions were measured using the Filipino version of the IPQ-R. Translation and back translation of the questionnaire were done after permission was obtained from the author. The translation into Filipino language was accomplished in accordance with the two-stage forward/backward procedure. Initial translation was made into target language, Filipino by a translator, who was less influenced by academic goal and who offered a translation that reflected the language used. The translator was neither aware nor informed of the concepts explored, to avoid information bias and to elicit unexpected meanings of the items in the translated questionnaire. The translator then

produced a written report of the translation. Working from the Filipino version of the questionnaire and blind to the original version, two psychiatrists with knowledge in the field then translated the questionnaire back into the original language. Additional comments were made to highlight challenging phrases or uncertainties. This was a process of validity checking to make sure that the translated version reflected the same item content as the original version. Agreement between the back translation and the original source version assured a consistent translation. Pilot testing was done to a group of patients at the outpatient department to ensure that the questions were easily understood and to determine the length of time in answering the questionnaires.

Respondents who fulfilled the inclusion criteria were asked further to complete the Filipino version of IPQ-R. The study was conducted via inquiry using the questionnaire, which took 15-20 minutes on an average.

Outcome measurements

Data reflecting sociodemographic details and clinical data were obtained from the medical record at baseline. The demographics collected included age, gender, marital status, educational attainment, religion, and employment status. In addition, diagnostic characteristics were assessed, including duration of chronic pain and number of pain sites.

The IPQ-R comprises of scales, which is divided into three sections. It provides information about the components that have been found to underlie the cognitive representation of illness. The *illness identity* component is concerned with ideas about the illness label, the nature of their condition, such as the symptoms that the patients associate with their condition. The associative beliefs that make the distinction between beliefs, about illness symptom pathology, and symptom experience are measured. It has been modified in an attempt to separate the concept of illness identity by identifying which symptoms they specifically associate with their illness, using a yes/no response format. The identity scale consists of the twelve commonly experienced symptoms; the sum of these items on the rating forms the *illness identity* subscale.

The succeeding section consists of seven subscales assessing pain representations. This provides evidence of the patients' beliefs about the nature, timeline, controllability, and consequences of their condition, as well as an indication of the extent to which they have a coherent understanding of their condition, and of their emotional response to it.⁷ For each subscale, respondents indicate their degree of agreement with specific statements, using a five-point Likert-type scale.⁷ The consequences component reflects the beliefs regarding the illness severity and its impact on functioning and on overall quality of life. The control/cure dimension, separated into two subscales labeled *personal control* and *treatment control*, indicates the extent to which the

patient believes the condition is amenable to cure or control. It refers to the sensation of empowerment regarding performance of coping behaviors or the efficacy of treatment, respectively, which may also be particularly relevant for future work into the relationships between illness representations and treatment adherence. In addition, the scale timeline is separated into two subscales developed to measure the *acute/chronic* and the *cyclical* timelines, correspondingly referring to individual's beliefs about the course of the illness and time scale of illness symptoms. The IPQ-R has also been extended to include measures of illness coherence and the emotional representation of illness. *Illness coherence*, which assesses the extent to which a patient's illness representation provided a coherent understanding of the illness, reflecting the way in which the patient evaluates the usefulness of his illness representation. It may play an important role in longterm adjustment and response to symptoms. Items for the *emotional representation* subscale were developed to tap into a set of six affective responses, which were found in previous research to be sensitive to differences in illness perceptions and to predict health-related responses.⁵ The illness coherence and emotional representation items brings the total number of exploratory items in this section of the questionnaire to 50.

The causal dimension is presented as a separate section, which uses the same Likert-type scale. The number of attributional items lists 18 possible causes for onset of pain, which represents the beliefs regarding the causal factors responsible. This component comprises the patient's ideas about etiology, the likely causes of the illness and the timeline component indicates perceptions of the possible duration of their health problems. A range of available causal factors have been identified in research on illness representations and a number of underlying dimensions derived intuitively or from factor analysis have been recognized. Causal factors include biological cause, emotional cause, environmental cause, psychological attributions, and chance factors. In addition, participants were asked to rank in order the three most important causes for their pain, and may include those not covered by the list.

In the present study, the seven focal subscales of the Filipino version of the IPQ-R were evaluated.

Data analysis

The aim of the present study was to validate the internal structure of the Filipino version of the IPQ-R in a sample of patients who had been managed for chronic pain. This paper presents results of analysis of data collected in illness perception in Filipino. The mean score for each of the IPQ-R subscales was computed for each participant. In order to compare the internal consistency or validity of the subcomponents of each dimension of the Filipino version with corresponding results for the original English version, Cronbach's alpha coefficients were calculated for each illness

perception dimension. Cronbach's alpha, a standard test of internal consistency, checks the correlation between questions loading onto the same factor, indicating excellent internal consistency of the responses.¹¹ The subscales were classified as internally consistent if the Cronbach's coefficients exceeded 0.70.¹² Confirmatory factor analysis was performed to validate the dimensionality of the Filipino version. Confirmatory factor analysis allows to test for a factor structure that is hypothesized by theory, which is particularly important when researchers aim to examine the transferability of instruments across different populations and languages.¹³ To ensure that the items of a subscale assess the same dimension of the construct, correlation coefficients between 0.20 and 0.40 were recommended.¹⁴ Items with factor loadings <0.40 were considered for deletion. Interrelationships between the seven dimensions were also examined by computing for the Pearson's correlation coefficients. Coefficients of the intersubscale correlations should not exceed 0.05.

High scores on the *identity*, *timeline*, *consequences*, and *cyclical* dimensions represent strongly held beliefs about the number of symptoms attributed to the illness, the chronicity of the condition, the negative consequences of the illness, and the cyclical nature of the condition.⁵ High scores on the *timeline* scales indicate the held belief that the illness is enduring and/or cyclical.⁵ High scores on the *consequences* scale indicate stronger beliefs that the illness will have negative consequences.⁵ High scores on the *controllability* scales indicate personal control over the illness and positive beliefs about the controllability of the illness and effectiveness of treatment.⁵ High scores on the *illness coherence* scale represent personal understanding of the condition, while high scores on the *emotional representation* subscale represent negative beliefs about how the illness affects one's emotional well being.⁵

Results

Overall, 150 patients were invited to partake in the study; of these 143 provided their consent. The study sample consisted of 143 participants who had been diagnosed with chronic pain for at least 3 months duration. There were 61 (42.7%) men and 82 (57.3%) women; mean age was 54.9 years. Eighty percent of the respondents were married and a majority was unemployed (76.2%). Thirty four percent (34.3%) had a higher educational status, with 65.1% having formal school education. Eighty nine (62.3%) were recruited from the outpatient department, 46.9% of which were returning patients, and 15.4% were newly seen patients. The remaining 54 (37.8%) were inpatients admitted for either a medical or surgical condition. At least half (57.3%) of the total participants reported having chronic pain for a duration of at least a year. Eighty two (57.3%) reported one site of pain, and 37 (25.9%) conveyed a scale of severe pain, while 36 (25.2%) described mild scale of pain.

Seventy-six (53.1%) of the respondents were diagnosed with nonmalignant condition. Descriptive statistics were computed to describe sample characteristics as outlined in Table 1.

Table 1. Sociodemographic and clinical profiles of respondents with chronic pain

Sociodemographic and clinical profile	N=143
Age (mean in years)	54.9 years \pm 13.71
Age (stratified)	
18-24	3 (2.1)
25-34	9 (6.3)
35-44	27 (18.9)
45-54	23 (16.2)
55-64	39 (27.3)
65-74	38 (26.6)
75-84	4 (2.8)
Gender	
Male	61 (42.7)
Female	82 (57.3)
Civil status	
Single	26 (18.2)
Married	80 (55.9)
Separated	13 (9.1)
Widow/er	24 (16.8)
Educational attainment	
No school education	1 (0.7)
Primary school education	34 (23.8)
High school education	51 (35.7)
Vocational course	8 (5.6)
University education	47 (32.9)
Post graduate education	2 (1.4)
Religion	
Roman Catholic	111 (77.6)
Non-Roman Catholic	32 (22.4)
Employment	
Unemployed	109 (76.2)
Employed	34 (23.8)
Duration of pain	
3-6 months	36 (25.2)
6-11 months	25 (17.5)
1 year or more	82 (57.3)
Patients	
Old outpatients	67 (46.9)
New outpatients	22 (15.4)
Inpatients	54 (37.8)
Site of pain	
1 site	82 (57.3)
2 or more sites	61 (42.7)
Pain scale	
0	22 (15.4)
1-3	36 (25.2)
4-6	48 (33.6)
7-10	37 (25.9)
Diagnosis	
Malignant condition	67 (46.9)
Non-malignant condition	76 (53.1)

Filipino IPQ-R internal validity

In order to compare the internal validity of the Filipino version with corresponding results for the original version of the subscales, Cronbach's alpha coefficients were calculated for each dimension, as shown in Table 2. Internal consistency was calculated with the exception of *identity* and *cause* since these subscales were not designed to assess a

coherent dimension. The consistencies for the seven Filipino version of IPQ-R dimensions for *consequence*, *illness coherence*, *timeline (cyclical)*, and *emotional representation* were all within conventional limits and ranged from $\alpha = 0.70$ – 0.83 with small variations from the original English IPQ-R. While these subscales met the critical value of $\alpha > 0.70$ for internal consistency, *timeline (acute/chronic)* ($\alpha = 0.458$), *personal control* ($\alpha = 0.440$), and *treatment control* ($\alpha = 0.567$) failed to reach consistency.

Table 2. Revised illness perception scores internal validity using Cronbach's alpha

Subscale	Cronbach's alpha
Timeline (acute/chronic)	0.458*
Consequence	0.749
Personal control	0.440*
Treatment control items	0.567*
Illness coherence items	0.722
Timeline (cyclical)	0.739
Emotional representation	0.839

Confirmatory factor analysis was likewise performed to validate the dimensionality of these subscales. The results revealed that seven items from these three subscales were however not considered consistent or negatively worded and therefore can be excluded from the instrument. These items, which showed low and non-significant factor loadings, include three items from *timeline (acute/chronic)* subscale, two items from *personal control*, and two items from *treatment control* dimension, as presented in Table 3. All other factor loadings were significant and ranged from 0.60 to 0.83. In combination that the wording of some items were considered somewhat vague, these items can be removed. By excluding these items, there was noted improvement in the Cronbach's alpha of the corresponding scales, as shown in Table 4. The alpha coefficient for the scale *timeline (acute/chronic)* increased to 0.689 with items 1, 4, and 18 excluded. The alpha coefficient for *personal control* and *treatment control* increased to 0.583 and 0.677, respectively after exclusion of items 15, 17, 19, and 23. Given that for each subscale now contain only three to four items, which is likely to reduce internal consistency, the resulted α score may be judged as acceptable. The difference gave support for removing these items. Items purported to load on these subscale had to be deleted from further analysis due to low factor loadings.

Descriptive statistics

This discussion is focused on findings with the IPQ-R version used in this study, and theoretical foundations of illness representation. Descriptive data as presented in Table 5 on the evaluated IPQ-R dimensions showed low score on *identity* and significantly high scores on *consequence*, *personal* and *treatment control*, *timeline (cyclical)*, and *emotional representation*. The low score on *identity* implied a lower incidence of symptoms reported.

Table 3. Results of confirmatory factor analysis (standardized factor loadings)

<i>IPQ-R dimension</i>		
Timeline (acute/chronic) items		
1.	Ang aking PP ay tumatagal lamang ng maikling panahon	-0.097*
2.	Ang aking PP ay maaaring permanente	0.753
3.	Ang aking PP ay tatagal nang mahabang panahon	0.830
4.	Ang aking PP ay lilipas din agad	0.159*
5.	Ang aking PP ay inaasahan kong panghabang-buhay	0.769
6.	Ang aking PP ay bubuti rin sa pagdating ng panahon	-0.066*
Personal control items		
1.	Marami akong magagawa upang makontrol ang aking mga sintomas	0.653
2.	Ang aking magagawa ay magpapaalam	0.737
3.	Ang kahihinatnan ng aking PP ay nakasalalay sa akin	0.690
4.	Wala akong magagagawa na makakaapekto sa aking PP	0.146*
5.	Mayroon akong kakayahan na maimpluwensiyahan ang aking PP	0.604
6.	Ang aking mga gawain ay walang epekto sa kahihinatnan ng aking PP	-0.161*
Treatment control items		
1.	Maliit lamang ang maaaring gawin upang bumuti ang aking PP	-0.004*
2.	Ang aking gamutan ay magiging mabisa upang malunasan ang aking PP	0.834
3.	Ang masamang epekto ng aking PP ay maiiwasan ng aking gamutan	0.747
4.	Ang aking gamutan ay makakalunas sa aking PP	0.774
5.	Wala nang maaaring makatulong sa aking kalagayan	0.005*

Table 4. Cronbach’s alpha values for the reduced version of the Revised Illness Perception Scores

<i>Subscale</i>	<i>Cronbach’s alpha</i>
Timeline (acute/chronic)	0.689
Personal control	0.583
Treatment control	0.677

Table 5. Means and standard deviations for the Filipino Revised Illness Perception Scores

<i>Subscale</i>	<i>Mean score</i>	<i>SD</i>	<i>Range</i>
Identity	5.06	2.91	1-14
Timeline (acute/chronic)	7.50	1.85	4-13
Consequence	19.19	4.38	10-30
Personal control	14.78	2.18	8-20
Treatment control	12.10	1.64	3-15
Illness coherence	15.38	3.47	9-25
Timeline (cyclical)	15.03	2.37	4-19
Emotional representation	21.73	4.56	10-30
Causes			
Biological cause	6.12	1.79	2-10
Emotional cause	9.07	2.51	3-13
Environmental cause	6.00	1.88	2-10
Psychological attributions	13.92	3.63	5-21
Chance factors	5.62	5.62	2-10
Risk factors	9.62	2.71	4-18

*Adjusted with deleted items

The means and distributions of the IPQ-R scale scores shows a relatively high mean and wide distribution on the scale *timeline (cyclical)*, compared with the scale *timeline (acute/chronic)*, which indicates that many participants perceive their illness to be fluctuating though there were also participants with another view in this aspect. The high mean scores on the scales *treatment control* indicate that

participants have a strong belief in the efficacy of treatment. The cure/control scales were constructed such that high scores are indicative of greater beliefs in the controllability and curability of the illness.³ It should be noticed that these patients perceive their *personal control* over the illness to be lower than its controllability by medical treatment. This denotes that beliefs in the controllability of their illness by medical treatment are generally stronger than their own personal control beliefs. The *consequences* and *timeline* scales are measured so that higher scores imply more serious consequences and a view that the illness is more chronic than acute.³

Regarding causal attributions, relatively high scores on the *emotional* scale indicate that participants do perceive emotional factors to be an important reason for chronic pain, with higher scores indicating stronger agreement. In contrast, they attribute their illness less to biological factors and chance factors, although there is some variation among the scores in this respect. Other factors are regarded as partly relevant for the development of chronic pain.

The relatively average scores for *illness coherence* indicate that participants considered that they had good understanding of their illness. There were also positive relationships between the attributional factors and illness identity. This is congruent with previous work, which has shown that patients with more severe symptoms report a greater number of attributions for their illness.⁵

Inter-subscale correlation

Analyses of the intercorrelations between the IPQ-R dimensions were performed using Pearson’s correlation coefficients. The Filipino version of the IPQ-R dimensions appear to show logical interrelationships as expected, as illustrated in Table 6; perceptions about chronicity of the illness were intercorrelated with negative *emotional representations*. Positive views about *personal controllability* correlated positively with *illness coherence*. Other directions of the correlations were in line with the original version of IPQ-R: associations between *timeline acute/chronic* and *illness coherence* and between *timeline acute/chronic* and *personal control*, and between *personal control* and *emotional representations*, which were also significant in the original study. A sense of *illness coherence* was also inversely related to pessimistic beliefs about the *timeline* as well as to negative *emotional representations*. There were associations between cyclical nature with *emotional representations* and negative *consequences*. Positive corrected correlations were also found between the *consequences* and *timeline dimensions*.

The directions of the correlations were in line with the original version of IPQ-R with some noticeable exceptions: association between *chronicity* and *negative consequences, control* and pessimistic beliefs about *timeline* and *consequence* of the illness, which were not significant in the Filipino sample.

Table 6. Interrelationships or correlations between the seven dimensions of the Filipino version of the IPQ-R

	1	2	3	4	5	6
1. Timeline (acute/chronic)**						
2. Consequence	0.156					
3. Personal control**	-0.092	-0.004				
4. Treatment control**	-0.035	0.13	0.478*			
5. Illness coherence	-0.038	0.026	-0.006	0.072		
6. Timeline cyclical	0.013	0.403*	0.122	0.072	-0.232*	
7. Emotional representation	0.026	0.501	0.026	0.205*	-0.257*	0.199*

* $p < 0.05$, Pearson's correlations ** Adjusted with deleted items

There was no significant association between demographic profile and illness coherence noted, except for educational attainment profile, as illustrated in Table 7. Moreover, a significant association of emotional representation was only identified with the civil status profile.

Table 7. Association of the sociodemographic and clinical profile with illness coherence and emotional representation subscale

Demographic profile	Illness coherence (<i>p</i> -value)	Emotional representation (<i>p</i> -value)
Age (stratified)	0.632	0.430
Gender	0.738	0.933
Civil status	0.256	0.047*
Educational attainment	0.025*	0.187
Religion	0.078	0.526
Employment	0.321	0.062
Duration of pain	0.524	0.476
Type of patient	0.368	0.096
Site of pain	0.994	0.741
Pain scale	0.144	0.153
Diagnosis	0.631	0.397

* *p*-value < 0.05

The internal consistency or Cronbach's alpha coefficients for the corrected subscales and the inter-factor correlations were relatively similar to those reported in the validation study of the original English IPQ-R. Hence, the Filipino version of the IPQ-R, with seven items removed, was found to be a valid measure of illness perception.

Discussion

The information presented seems essential if patients are to collaborate with health professionals in making informed choices and in facilitating decision-making with regard to treatment regimens offered. The individuals examined generally perceived their chronic pain as being cyclical with several negative consequences. Chronic pain patients who viewed cyclical nature of their illness have perceptions of negative consequence and low illness coherence. They estimated the understanding of their condition as rather incoherent. Chronic pain patients with high emotional representation appear to have poor coherence of their illness, perceive their condition as cyclical and with low treatment control.

Patients who have a positive view with treatment control, also perceive themselves having good personal

control. Patients who recognize their treatment as effective also hold stronger beliefs about personal capabilities to control their illness. As expected, the patients with chronic pain perceived their pain as more chronic and cyclical and as having serious consequences. Similarly, individuals viewing their illness as a condition with serious consequences also show a more intense emotional response to their illness. Both findings are in line with assumptions of the CSM of self-regulation.

Patients with chronic pain were also distressed by their pain and had a fair coherent understanding of their condition. *Illness coherence* scale scores suggested that a number of patients were still mystified by their continuing pain and were more likely to make psychological, risk factor, and emotional attributions for their pain. With regard to beliefs about the causes of chronic pain, we found stress and worry to be the most accepted causal items. These psychological and emotional attributions were also related to an increased sense of personal and treatment control.⁵ This suggests that patients feel more in control of their illness if they endorse behavioral and psychological causal factors such as smoking, diet, alcohol, stress, or overwork.⁵ On the other hand, risk factor attributions, which incorporated the causal factors with a more external locus of control was related to a poor sense of treatment control, a chronic and cyclical timeline and serious consequences.⁵ Patients who made more psychological attributions also had a tendency to view their illness as chronic and were more distressed by their illness.⁵

Knowledge regarding the perceptions patients hold about their chronic pain is predictive of clinical outcome and has practical implications. Researchers have argued that exploring cognitions can help in the development of interventions specifically designed to modify maladaptive belief patterns.⁷ Clinicians can focus on health-related constructs, offering the potential for developing treatment programs relevant to the patient group.⁷ A focus on restructuring patients' unhelpful perceptions might be an important part of primary care management and deserves further investigation. Since patients possess sufficient perceptions of personal control in managing their pain, interventions such as pain management programs focusing on self-management strategies, may have good face validity. More specifically, interventions could focus on reducing distress and emotional problems by discussing the perceived

chronicity of the illness and its impact on patients' lives, resolve possible misconceptions, and to restructure negative thoughts about its consequences. Findings also may suggest that patients might benefit more from support to alleviate the perceived threat of their illness than from support to further strengthen control beliefs.

Many patients with chronic pain generally have a strong belief in the effectiveness of pain treatment. Since degree to which patients adopt certain strategies depends on the way they perceive their illness, this knowledge may be used to develop support programs for chronic pain patients that dedicate structural attention to the way they perceive their illness which may enable them to more adequately adjust to their illness.

The pattern of intercorrelations observed between the illness cognition dimensions of the revised questionnaire is consistent with those observed by individual studies on illnesses and with the CSM.³ It supports the validity of the CSM illness representation dimensions and are mostly in accordance with those reported in other studies on the IPQ-R. This analysis therefore supports the notion that the logical CSM categories elicited are consistent and largely generalizable.

Limitations

The study relied on self-report questionnaires, which had well-documented limitations including reliance on retrospective data. Relying on patient's information and interpretation to deduce what the physician believed may have introduced a recall bias. However, these facts reported by the patients reflect what they perceived from encounters with their physicians.

Illness beliefs are often fluid and uncertain cognitions that tend to be represented differently in response to varying contexts. Due to the ambiguity of illness beliefs, patients may report different, even contrasting accounts at different moments or to different people. Data in this present study were collected at one point and can only claim to capture a glimpse of participants' chronic pain experience. It could be argued that a further limitation is that participants might express themselves differently depending on the environment in which the study was conducted. Due to the fact that the study was conducted in a university-affiliated hospital rather than in a community setting, it is likely that this factor may have affected the study and the findings may be biased by factors pertaining to access to care, and thus may also limit the generalizability of the findings. Further, a conveniently recruited study group who had chronic pain as one of the main complaints was used. Although as a means of ensuring representativeness, the study group included consecutive patients who consulted over the period of three months, therefore, subjects might not be representative of all primary care patients. Limitations of this study also include the heterogeneity of the sample, the lack of similar

investigations in other populations and the absence of another study group for direct comparison.

Even with some of these limitations, the finding will have implications for clinical practice, as a study of this nature has not been conducted in such a setting previously.

Conclusion

The present paper presents the first validation study of the Filipino version of the IPQ-R, used to measure patient representations of their illness. It adds to current research on illness perceptions by providing a thorough examination of the structure of the Filipino IPQ-R using confirmatory factor analysis. Relying on the present results, the suggested change to be made in the Filipino version would be to exclude the identified seven items. The internal consistency for most subscales and the inter-factor correlations were relatively similar to those reported in the validation study of the original English IPQ-R. Our modified questionnaire showed a good validity and could be a valuable instrument in the assessment of illness perceptions in the Filipino health care setting, provided that the model is confirmed in subsequent research.

Understanding of cognition and its complex interactions with patients' experiences and symptoms is important when developing and evaluating interventions, which are culturally sensitive and patient-centered. Use of such an instrument helps quantify patient's view of their condition. The illness perception model is useful in eliciting such information that contribute to the continued distress of patients with persistent symptoms and in their management. This may assist development of a shared language between the patient and the clinician, which is valuable for health education, treatment, promotion of adherence and research in general health care setting. Pain management specialties can add cognitive treatment based on patients' illness perceptions to provide them with an additional modality to improve patient outcomes and compliance to treatment regimens.

Recommendations

The Filipino version of IPQ-R was validated among those who had been treated for chronic pain. However, because the IPQ-R is a generic illness perception questionnaire, the area of use could potentially be expanded to include different groups of illnesses. The modification and exclusion of some items should be reconsidered in future applications of the instrument and researches should examine whether our reduced set of items is stable across different populations. Recommendations also include adapting the symptom and cause subscales to reflect the common symptoms and causes reported by the patient population and identifying cut-offs for these perception scales so that clinically meaningful changes in illness perceptions can be determined. A future challenge would

also be to develop and evaluate the cause and identity dimensions, that is, to generate illness-specific items on these two dimensions in accordance with research on the risk factors and symptoms. This would be of importance in that cause perceptions and symptom perceptions have both been found to influence health behavior. Further prospective studies are needed to confirm the associations between illness representations and adjustment to illness over time.

The present study does not identify how these illness perceptions relate to other illness related characteristics and outcome variables such as distress, physical and mental health, and quality of life. To deepen our knowledge on the interplay between these constructs, longitudinal studies investigating the effects of pain representations on treatment outcome would be enriched by the use of prospective designs with repeated measures. The model may be able to inform understanding of how thinking patterns can influence patients' relationships with their pain, and to determine how best to modify maladaptive illness perceptions in order to facilitate better clinical outcomes.

Given the growing body of recent research showing that negative illness perceptions are associated with poorer outcomes, we would like to encourage study of this topic in Filipino health care contexts. The present validation study of the Filipino version of IPQ-R could thus be a starting point for such research. This study can be viewed as a preliminary step for future research employing stronger design methodologies to explore outcome for this patient population based on illness representations. The model approach and the IPQ-R incorporate beliefs that may provide additional insights and, hence, could offer further aims for individualized cognitively based interventions to promote a more adequate and positive illness view. Previous research has demonstrated that illness perceptions of chronically ill patients can be successfully altered by short interventions.⁸ Intervention studies have been conducted in other clinical populations, but it remains to be seen if targeting chronic pain patients' perceptions can produce improved clinical outcomes. New insights might therefore add to actions and interventions that pay structural attention to the way patients perceive their illness, thereby enabling them to cope with their illness more adequately.⁸ Research and clinical efforts are intertwined, and the IPQ-R provides one way to assess the cognitive and emotional representations in response to and the management of long-term illnesses, such as chronic pain.

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