

# Translation and validation of a scale on the health care providers' Attitudes Towards Persons Living With Leprosy (AT-PLWL)

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## ABSTRACT

**INTRODUCTION** Leprosy is a chronic, progressive, and complex disease. One of the factors contributing to the quality of case detection and treatment compliance is the attitudes of health care providers towards leprosy patients. Assessment of the attitudes of HCP towards leprosy patients is crucial because this is where leprosy patients base their care-seeking behaviors; hence, the creation of this scale.

**OBJECTIVES** To create and validate a functionally equivalent Filipino translation of the HCP AT-PLWL scale.

**METHODS** A validity study was conducted into two phases. In Phase I, the AT-PLWL scale was translated (forward-back method) into Filipino, which underwent a cognitive debriefing (face validity) and pre-testing to 30 health care providers. In Phase 2, the reconciled forward translation underwent face and content validity and was pilot-tested to 100 health care providers. Reliability, both internal consistency and test-retest, were assessed via calculating Cronbach's  $\alpha$  and intra-class correlation coefficient, respectively.

**RESULTS** Content and face validity showed that all items in the scale were relevant. Cronbach's  $\alpha$  showed an adequate internal consistency of greater than 0.7 while the intra-class correlation coefficient of responses was greater than 0.80, indicating good correlation.

**CONCLUSION** Overall, the final translated Filipino version of AT-PLWL scale is valid and reliable; hence, could serve as a tool to evaluate HCP's attitudes.

**KEYWORDS** Leprosy scale, health care providers, attitude scale

## INTRODUCTION

Leprosy (also known as Hansen's disease) is a chronic, progressive, and debilitating disease caused by *Mycobacterium leprae*. The disease mainly affects the skin, the peripheral nerves, eyes, and the mucosa of the upper respiratory tract.<sup>1,2</sup> Although there had been an advent of multidrug therapy (MDT) during the 1980s, with the World Health Organization (WHO) providing free MDT globally, still leprosy continues to be a significant problem and stigma is still rampant.<sup>2-4</sup>

In the literature, few studies were found assessing the knowledge, attitude, and practices of health care providers (HCPs) towards persons affected by leprosy.<sup>5-11</sup> Based on the reviews done by Srinivas, et al. (2018), majority of the scales were more representative of knowledge and practice rather than attitude; hence, this gave rise for a need to create a scale on HCP attitudes.<sup>12</sup> Moreover, Ahmad et al. (2010) stated that the levels of

attitude, along with knowledge and practices, are necessary to know among HCPs with regard to leprosy so that required knowledge and skills can be imparted.<sup>5</sup>

Health care providers play an important role in the management of cases because they directly handle and counsel leprosy patients. Aside from their job, their role is very crucial as the quality of case detection and treatment compliance relies on their kind of attitude towards leprosy. A positive health environment is beneficial for patients because this is where they base their health-seeking behaviors and compliance. This is where assessment of HCPs' attitudes comes in.

The first half of the methodology of the original tool/instrument by Srinivas et al. (2018) is via a scale development process which consists of qualitative semi-structured interviews and focus group discussion for item generation purposes and scaling exercise.<sup>12</sup> The second part of

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the methodology is face and content validity of the tool. Content validity of the scale was done and assessed by experts in the field of leprosy by reviewing whether the items were relevant and representative of the theoretical domains of affect, behavior, and cognitive components of attitude. Eleven items were discarded from the initial pool of 38 items due to poor agreement among experts regarding its relevance.<sup>12</sup> Moreover, content validity was enhanced through a process of triangulation, of which included reviews of existing scales measuring HCP attitudes towards various disabilities and qualitative interviews with different categories of HCPs.<sup>12</sup>

This study focuses on assessing the attitudes of HCPs towards patients affected with leprosy as a contribution in the public health program or patient care by providing insights regarding their attitudes and consequently serving as a guide in planning appropriate programs and interventions in promoting positive attitudes of HCPs as well as promoting inclusion of persons with leprosy.<sup>13</sup>

The objectives of this study is to create a functionally equivalent Filipino translation of the HCP AT-PLWL scale, and to validate the Filipino version of the HCP AT-PLWL scale.

## METHODS

This validity study was conducted into two phases: 1) translation, and 2) validation and reliability tests of the Filipino version of the scale.

### PHASE I

#### Preparation

The process flow of the methods used in the study is shown in Appendix 3. Permission was obtained via electronic mail from the original developers/ authors to translate and validate the HCP AT-PLWL scale into the Filipino language.

#### Translation

The original English version of the HCP AT-PLWL scale was translated into a Filipino version using the forward-backward method.<sup>14,15</sup> The scale was translated into Filipino by two independent translators (forward translation), who are native speakers and experts in the Filipino language, with experience in translation and cultural adaptation measures, at the same time proficient in both English and Filipino. The two forward translators and the investigators discussed and reconciled on a single forward translation via an online meeting.<sup>15,16</sup>

For the back translation, another two independent translators, with the same qualifications but not involved in the forward translation process, translated the synthesized forward translation back into English. A review of back translation was done by the investigators and problems and discrepancies were discussed with the back translators and the Filipino translation was further refined and used in the next step.<sup>15,17</sup>

### Cognitive debriefing and pre-testing

The pre-final forward translation was pre-tested for face validity on 30 bilingual HCPs using purposive or convenience sampling. This is based on power of 80% and prevalence of power of 5% using the formula below.<sup>18</sup>

$$n = \frac{\ln(1 - \text{power})}{\ln(1 - p)}$$

\*n = sample size, p = prevalence of problem

A sample size of 30 would achieve an equitably high power around 80% to detect a problem that occurs in 5% of the population, and to detect a repeat occurrence of a problem that affects 10% of the respondents. This suggests that 30 participants are a reasonable default sample size or starting point for pre-tests of questionnaires. In the pilot testing, 100 qualified subjects will be used for the final version of the translated questionnaire.<sup>15</sup> This is based on guidelines for the respondent-to-item ratio equal to 5:1.<sup>15,19</sup>

The consent, together with the explanation of the study, and both English and Filipino versions of the questionnaire were distributed to the participants either in person or via online forms. Individual assessment and feedback were documented.<sup>15</sup>

Results were discussed and edited by the investigators and 4 back and forward translators via online meeting. A modified forward translation (Filipino version) of the HCP AT-PLWL scale was produced for validation (phase 2).<sup>15</sup>

### PHASE 2

#### Validation of scale

A panel of experts on leprosy (composed of 3 experts) were invited and gathered via online meeting to review and assess the face and content validity of the translated scale.

Face validity was evaluated by the experts and their comments and suggestions were documented. Content validity was measured and analyzed using the item-level content validity index score (i-CVI). Each expert rated each of the items in terms of its relevance to the underlying construct.<sup>20</sup> A 4-point rating scale was used: 1- not relevant, 2- somewhat relevant, 3- quite relevant, and 4- highly relevant.<sup>20,21</sup> This would depend on the number of judges/experts assessing the items. The i-CVI should be 1.00 if there are five or fewer judges. On the other hand, if there are six or more judges, i-CVIs should not be lower than 0.78.<sup>20,21</sup> If the item value falls below the set scores, then the item will be subjected to discussion. According to Lynn (1986), five or fewer experts should agree on the content validity for their rating to be considered a reasonable representation of the universe of possible ratings. After the discussion and consensus on

the final scale to be used, revisions were made according to the suggestions and consensus of the experts.<sup>20,21</sup>

### Sampling, pilot testing, and data gathering

The modified and translated HCP AT-PLWL scale was administered to a minimum of 100 HCP participants in centers/institutions within Metro Manila via purposive or convenience sampling. A re-test was done with an interval of about 1 week to assess scale reliability. The study, along with the consent forms, was conducted online or in person due to feasibility and time constraint.

### DATA MANAGEMENT AND ANALYSIS

Data was tabulated and encoded in Microsoft Excel and Word. Internal consistency reliability was calculated using the Cronbach  $\alpha$  coefficient. Cronbach's  $\alpha$  of 0 indicates no internal consistency while 1 reflects perfect internal consistency. A Cronbach's  $\alpha$  value greater than 0.6-0.7 is indicative of good internal consistency. In practice, Cronbach's  $\alpha$  of at least 0.70 has been suggested to indicate adequate internal consistency.

The test re-test reliability was measured via calculating the intra-class correlation coefficient (ICC) of the responses that were obtained at two different time points. Values at 0.60 are considered marginal, 0.70 is acceptable, and above 0.80 has a good correlation.

### ETHICAL CONSIDERATIONS

Permission was granted from the original developers/authors to translate the HCP AT-PLWL scale into Filipino. The study was carried out after securing ethical clearance from the Rizal Medical Center IRB. Written/Online informed consent was obtained, and all information gathered was kept confidential. All files will be destroyed and deleted after 5 years.

### RESULTS

A total of 120 HCPs were invited to join the phase 2 of the study; however, only 100 respondents completed the consent forms and took the re-test. The 20 HCPs were dropped from the study because they failed to answer the re-test.

The average age of respondents was 41.3 years old ranging from 21 to 70 years old with most participants from 21 to 40 years old (56%). The participants were 89% females and 11% males. The HCPs were 47% barangay health workers, 34% physicians, and 19% nurses. As for the institutions/centers, majority who agreed to be part of the study were from Rizal Medical Center (18%) and health centers combined (54%), followed by East Avenue Medical Center (11%), Research Institute of Tropical Medicine (9%), and from other institutions (8%) – Jose N. Rodriguez Memorial Hospital and Sanitarium (DJNRMHS), Ospital ng Maynila Medical Center (OMMC), University of the East Ramon Magsaysay Memorial Medical Center (UERMMMCI), and Jose R. Reyes Memorial Medical Center (JRRMMC) (Table 1).

Three experts in the field of leprosy were invited to assess the content and face validity of the translated HCP AT-PLWL

Table 1. Socio-demographic characteristics of the HCPs.

Characteristics	Results
Age, years	41.3 ± 13.1
21 to 30	34 (34.0)
31 to 40	22 (22.0)
41 to 50	14 (14.0)
51 to 60	17 (17.0)
61 to 70	13 (13.0)
Gender	
Female	89 (89.0)
Male	11 (11.0)
Type of health care provider	
Barangay health worker	47 (47.0)
Physician	34 (34.0)
Nurse	19 (19.0)
Institution	
RMC	18 (18.0)
EAMC	11 (11.0)
RITM	9 (9.0)
Other hospitals or research institutes	8 (8.0)
Health center - West Rembo	10 (10.0)
Health center - Ugong	8 (8.0)
Health center - East Rembo	8 (8.0)
Health center - Pineda	7 (7.0)
Health center - Cembo	7 (7.0)
Health center - Barangay Kapitolyo	6 (6.0)
Health center - Caniogon	5 (5.0)
Health center - South Cembo	3 (3.0)
Results: mean ± standard deviation or frequency (%)	

scale. Face validity was assessed by HCPs and experts during the pre-testing and validation phase, respectively (Table 2).

For all the items, the experts all agreed to change the term “ketong” to “leprosy” since this is a more appropriate universal term. The term “ketong” can be a term related to stigma. For item number 2, both HCP and experts opted to change the literal translation of “maruming trabaho” to “nakakatakot o nakakadiring trabaho”, which is what we wanted the readers to understand. For item number 3, there was a contest whether to change the term “magkakaroon” to “namamana” or “nahawa” but the experts all agreed to still stick with “magkakaroon” because it is a wider term for both “nahawa” and “namana”. For item numbers 5, 8, and 24, both HCP and experts agreed to change “ulser sa balat” to “sugat sa balat” since lay people may not understand what an “ulser” is. For item number 6, the phrase “ospital ng may leprosy” was changed to “ospital na gumagamot sa taong may leprosy” to be better understood by the readers. There was also a conflict in which term to use – disability (“kapansanan”)

Table 2. Test on the face validity of the translated AT-PLWL scale from both experts and HCP participants.

Item #	Major comments among experts	Major comments among HCPs
1 Sa palagay ko ang leprosy ay isang sumpa at parusa. <i>I think leprosy is a curse and a punishment.</i>	Change "ketong" to leprosy Remove "sa palagay ko" May not omit the phrase	No modifications required
2 Maruming trabaho ang pangangalaga sa mga pasyenteng may ketong. <i>Nursing of leprosy patients is a dirty job.</i>	Change "maruming" to "nakakatakot" Change "ketong" to leprosy "Nakakadiri" or "nakakatakot" "Pinangdiririhan na trabaho ang pagalaga sa pasyenteng mayroong leprosy." "Nakakatakot/nakakadiring trabaho ang pagalaga sa pasyenteng merong leprosy"	Consider "sa mga pasyenteng..." versus "ng mga pasyenteng" Instead of giving a literal translation of "maruming trabaho", perhaps its better to translate it as how you want the reader to understand (eg nakakapagod).
3 Magkakaroon din ng ketong ang mga anak ng pasyenteng may ketong. <i>Children of leprosy patients invariably become lepers.</i>	Namamana Change "ketong" to leprosy Stick with "magkakaroon", it is a wide term for nahawa at namana	Namamana o dahil kasama siya sa bahay? Nahawa o namana? Translation in Tagalog could be well understood but direct translation is not precise. Rearrange statement to: "Ang mga anak ng pasyenteng may ketong ay magkakaroon din ng ketong" Only if those who are afflicted with HD do not get the correct treatment, anyone in the household with prolonged contact and low immune system can also have it.
4 Dapat mamuhay nang nakahiwalay sa iba ang mga taong may ketong. <i>People with leprosy should live apart from other people.</i>	Change "ketong" to leprosy	No modifications required
5 Nandidiri ako kapag nakakakita ng pasyenteng may leprosy na may ulser sa balat. <i>There is a sense of revulsion when seeing a leprosy patient with ulcers.</i>	Better to change "ulser" to "sugat sa balat" for all healthcare workers to understand. Change "ketong" to leprosy	Perhaps use: "mga sugat sa balat" Lay people may not understand what an "ulser" is. Better to add a description, such as "ulser or sugat na may dugo o nana na hindi gumagaling"
6 Karamihan sa mga nagtatrabaho sa ospital ng may ketong ay kadalasang nahahawa sa sakit na ito. <i>Most workers in leprosy hospitals usually contract the disease.</i>	Change "ketong" to leprosy	"Ospital ng may ketong" sounds like the hospital has leprosy instead of a hospital catering to. "Karamihan sa mga nagtatrabaho sa ospital na gumagamot sa taong may ketong ay kadalasang nahahawa sa sakit na ito."
7 Sa ospital, inihiwasan kong hawakan ang sinumang may ketong hangga't maaari. <i>At the hospital, I prefer to avoid touching someone with leprosy if possible.</i>	Change "ketong" to leprosy	No modifications required
8 Dapat ihinalay ang mga pasyenteng may ketong na may depormasyon sa katawan at ulser sa balat. <i>Leprosy patients with ulcers and deformities must be isolated.</i>	Better to change "ulser" to "sugat sa balat" for all healthcare workers to understand. Disability - cannot function Deformity – physical (agree in using depormasyon)	Prefer "mga sugat sa balat"
9 Mga depormasyon sa katawan ang hindi matatakasang epekto ng ketong. <i>Deformities are an inescapable consequence of leprosy.</i>	Change "ketong" to leprosy Disability - cannot function Deformity – physical (agree in using depormasyon)	No modifications required
10 Nag-aalala akong mahawa mula sa mga pasyenteng may ketong kapag ginagamot ko sila. <i>I am concerned with getting infection from patients with leprosy when I treat them.</i>	Change "ketong" to leprosy	No modifications required
11 Ang pinakakaraniwang indikasyon ng ketong ay mga depormadong bahagi ng kamay at paa. <i>The commonest presentation of leprosy is deformed limbs.</i>	Disability - cannot function Deformity – physical (agree in using depormasyon) Change "ketong" to leprosy	No modifications required
12 Mas gusto kong sa isang hiwalay na klinika ginagawa ang paglilinis at pagbebenda sa mga sugat ng ketong. <i>I prefer dressing for leprosy wounds are carried out in a separate clinic.</i>	Change "ketong" to leprosy	No modifications required
13 Dapat ipaalam sa mga kawani at tagapangalagang pangkalusugan kapag may magpapagamot na pasyenteng may ketong. <i>Staff and health care providers should be notified when a patient with leprosy comes for treatment.</i>	Change "ketong" to leprosy	No modifications required

14	Walang inaasahang propesyon kaugnay ng pangangalagang pangkalusugan sa ospital ng may ketong. <i>There are no career prospects as far as nursing practice in leprosy hospital is concerned.</i>	"Walang inaasahang paglago ng propesyon"	"Walang ibang mapupuntahan sa propesyon ang mga nars na nagtrabaho sa hospital na may ketong."
15	Lalo akong mag-iingat (katulad ng pagsusuot ng guwantes sa kamay at mask sa bibig) kapag nagagamot ng pasyenteng may ketong. <i>I would take special care (like wearing gloves and masks) when treating a patient with leprosy.</i>	General precaution for hospital workers Change "ketong" to leprosy	"Lalo akong mag-iingat (katulad ng pagsusuot ng guwantes sa kamay at mask sa bibig) kapag NAGagamot ng pasyenteng may ketong."
16	Posibleng mahawa ako kung gagamutin ko ang mga pasyenteng may ketong. <i>It is possible for me to have leprosy if I treat leprosy patients.</i>	Change "ketong" to leprosy	No modifications required
17	Hindi kadalasang nakadidiri ang paglilinis at pagbebenda sa pasyenteng may ketong. <i>Dressing for a leprosy patient is not disgusting most of the times.</i>	Change "ketong" to leprosy	No modifications required
18	Ang pagtatrabaho sa ospital ng may ketong ay isa sa pinakamagandang paraan ng pagiging makatao. <i>Working in a leprosy hospital is one of the best ways of exhibiting humanitarian nature.</i>	Change "ketong" to leprosy	No modifications required
19	Kung ang aking kapamilya ay may ketong, hindi ako mahihiyang sabihin ito sa aking mga kaibigan. <i>If someone in my family has leprosy I would not mind talking about it to my friends.</i>	Change "ketong" to leprosy	No modifications required
20	Nakararamdam ako ng kasiyahan kapag ginagamot ko ang mga pasyenteng may ketong. <i>I get a sense of satisfaction when I treat patients with leprosy.</i>	Change "ketong" to leprosy	No modifications required
21	Magpapakita ako ng suportang isang taong may ketong. <i>I would be supportive of a person who has leprosy.</i>	Change "ketong" to leprosy	No modifications required
22	Posibleng gamutin ang ketong tulad ng alin mang sakit sa pangkalahatang serbisyong pangkalusugan. <i>It is possible to manage leprosy like any other disease in the general health service.</i>	Change "ketong" to leprosy	No modifications required
23	Mas mabuting gamutin ang mga pasyenteng may ketong sa mga pangkalahatang ospital kaysa sa mga 'espesyal' na ospital ng may ketong. <i>It would be better to treat leprosy patients in general hospitals instead of 'special' leprosy hospitals.</i>	Change "ketong" to leprosy	No modifications required
24	Wala akong problemang gamutin ang mga pasyenteng may ketong na may depormasyon sa katawan o ulser sa balat. <i>I have no problem in treating leprosy patients with deformities or ulcers.</i>	Better to change "Ulser" to "sugat sa balat" for all healthcare workers to understand. Change "ketong" to leprosy	Again, ulcers - maybe "sugat sa balat"
25	Handa akong tumulong sa pagsusuri/pamamahala sa mga kaso ng ketong sa aking pasilidad pangkalusugan. <i>I am willing to be involved in diagnosing/managing leprosy cases at my health care facility.</i>	Change "ketong" to leprosy	Change "pamamahala" to "pag-aasikaso"
26	Hindi ako nag-aalalang magtrabaho sa isang ospital na paralang sa may ketong. <i>I don't mind working in an all leprosy hospital.</i>	Change "ketong" to leprosy	No modifications required
27	Nagagamot ang ketong. <i>Leprosy is curable.</i>	Change "ketong" to leprosy	No modifications required

and deformity ("depormasyon"). All experts and authors agreed to maintain "depormasyon" as this pertains to the physical aspect while disability refers to malfunctioning. For item number 14, "paglago" was added to the phrase "walang inaasahang propesyon". For item number 25, "pamamahala" was changed to "pag-aasikaso" since this is a better translation term for managing leprosy cases. All comments and suggestions were revised

into a final translated scale. All comments and suggestions were revised into a final translated scale seen in Appendix 4. Based on the i-CVI, all of the items scored were 1.00 and were all accepted and maintained in the scale (Table 3).

The items were grouped and averaged based on the ABC model of attitudes – affective component with 10 items (Nos. 2, 4, 5, 8, 10, 17, 18, 19, 20, 21), behavioral with 8 items (Nos. 7,

Table 3. Test on the face validity of the translated AT-PLWL scale from both experts and HCP participants.

Item	Item Relevance Rating (Frequency %)				i-CVI	Decision
	Not Relevant 1	Somewhat relevant 2	Quite Relevant 3	Highly Relevant 4		
1 Sa palagay ko ang leprosy ay isang sumpa at parusa. <i>I think leprosy is a curse and a punishment.</i>	0	0	1 (33)	2 (66)	1.00	Accepted
2 Maruming trabaho ang pangangalaga sa mga pasyenteng may ketong. <i>Nursing of leprosy patients is a dirty job.</i>	0	0	0	3 (100)	1.00	Accepted
3 Magkakaroon din ng ketong ang mga anak ng pasyenteng may ketong. <i>Children of leprosy patients invariably become lepers.</i>	0	0	0	3 (100)	1.00	Accepted
4 Dapat mamuhay nang nakahiwalay sa iba ang mga taong may ketong. <i>People with leprosy should live apart from other people.</i>	0	0	0	3 (100)	1.00	Accepted
5 Nandidiri ako kapag nakakakita ng pasyenteng may leprosy na may ulser sa balat. <i>There is a sense of revulsion when seeing a leprosy patient with ulcers.</i>	0	0	0	3 (100)	1.00	Accepted
6 Karamihan sa mga nagtatrabaho sa ospital ng may ketong ay kadalasang nahahawa sa sakit na ito. <i>Most workers in leprosy hospitals usually contract the disease.</i>	0	0	0	3 (100)	1.00	Accepted
7 Sa ospital, iniwasan kong hawakan ang sinumang may ketong hangga't maaari. <i>At the hospital, I prefer to avoid touching someone with leprosy if possible.</i>	0	0	0	3 (100)	1.00	Accepted
8 Dapat ihiwalay ang mga pasyenteng may ketong na may depormasyon sa katawan at ulser sa balat. <i>Leprosy patients with ulcers and deformities must be isolated.</i>	0	0	0	3 (100)	1.00	Accepted
9 Mga depormasyon sa katawan ang hindi matatakasang epekto ng ketong. <i>Deformities are an inescapable consequence of leprosy.</i>	0	0	0	3 (100)	1.00	Accepted
10 Nag-aalala akong mahawa mula sa mga pasyenteng may ketong kapag ginagamot ko sila. <i>I am concerned with getting infection from patients with leprosy when I treat them.</i>	0	0	0	3 (100)	1.00	Accepted
11 Ang pinakakaraniwang indikasyon ng ketong ay mga depormadong bahagi ng kamay at paa. <i>The commonest presentation of leprosy is deformed limbs.</i>	0	0	0	3 (100)	1.00	Accepted
12 Mas gusto kong sa isang hiwalay na klinika ginagawa ang paglilinis at pagbebenda sa mga sugat ng ketong. <i>I prefer dressing for leprosy wounds are carried out in a separate clinic.</i>	0	0	0	3 (100)	1.00	Accepted
13 Dapat ipaalam sa mga kawani at tagapangalagang pangkalusugan kapag may magpapagamot na pasyenteng may ketong. <i>Staff and health care providers should be notified when a patient with leprosy comes for treatment.</i>	0	0	0	3 (100)	1.00	Accepted
14 Walang inaasahang propesyon kaugnay ng pangangalagang pangkalusugan sa ospital ng may ketong. <i>There are no career prospects as far as nursing practice in leprosy hospital is concerned.</i>	0	0	0	3 (100)	1.00	Accepted
15 Lalo akong mag-iingat (katulad ng pagsusuot ng guwantes sa kamay at mask sa bibig) kapag gumagamot ng pasyenteng may ketong. <i>I would take special care (like wearing gloves and masks) when treating a patient with leprosy.</i>	0	0	2 (66)	1 (33)	1.00	Accepted
16 Posibleng mahawa ako kung gagamutin ko ang mga pasyenteng may ketong. <i>It is possible for me to have leprosy if I treat leprosy patients.</i>	0	0	0	3 (100)	1.00	Accepted
17 Hindi kadalasang nakadidiri ang paglilinis at pagbebenda sa pasyenteng may ketong. <i>Dressing for a leprosy patient is not disgusting most of the times.</i>	0	0	0	3 (100)	1.00	Accepted
18 Ang pagtatrabaho sa ospital ng may ketong ay isa sa pinakamagandang paraan ng pagiging makatao. <i>Working in a leprosy hospital is one of the best ways of exhibiting humanitarian nature.</i>	0	0	0	3 (100)	1.00	Accepted
19 Kung ang aking kapamilya ay may ketong, hindi ako mahihiyang sabihin ito sa aking mga kaibigan. <i>If someone in my family has leprosy I would not mind talking about it to my friends.</i>	0	0	0	3 (100)	1.00	Accepted
20 Nakararamdam ako ng kasiyahan kapag ginagamot ko ang mga pasyenteng may ketong. <i>I get a sense of satisfaction when I treat patients with leprosy.</i>	0	0	0	3 (100)	1.00	Accepted
21 Magpapakita ako ng suporta sa isang taong may ketong. <i>I would be supportive of a person who has leprosy.</i>	0	0	0	3 (100)	1.00	Accepted
22 Posibleng gamutin ang ketong tulad ng alin mang sakit sa pangkalahatang serbisyong pangkalusugan. <i>It is possible to manage leprosy like any other disease in the general health service.</i>	0	0	0	3 (100)	1.00	Accepted
23 Mas mabuting gamutin ang mga pasyenteng may ketong sa mga pangkalahatang ospital kaysa sa mga 'espesyal' na ospital ng may ketong. <i>It would be better to treat leprosy patients in general hospitals instead of 'special' leprosy hospitals.</i>	0	0	0	3 (100)	1.00	Accepted

24	Wala akong problemang gamutin ang mga pasyenteng may ketong na may depormasyon sa katawan o ulser sa balat. <i>I have no problem in treating leprosy patients with deformities or ulcers.</i>	0	0	0	3 (100)	1.00	Accepted
25	Handa akong tumulong sa pagsusuri/pamamahala sa mga kaso ng ketong sa aking pasilidad pangkalusugan. <i>I am willing to be involved in diagnosing/managing leprosy cases at my health care facility.</i>	0	0	0	3 (100)	1.00	Accepted
26	Hindi ako nag-aalalang magtrabaho sa isang ospital na para lang sa may ketong. <i>I don't mind working in an all leprosy hospital.</i>	0	0	0	3 (100)	1.00	Accepted
27	Nagagamot ang ketong. <i>Leprosy is curable.</i>	0	0	0	3 (100)	1.00	Accepted
<b>Overall</b>		0	0	0	3 (100)	1.00	Accepted

Table 4. Summary of Internal consistency analysis (Test-retest reliability).

Indicators	ICC (95% Confidence Interval)
Affective (10 items)	0.895 (0.848 to 0.928)
Behavioral (8 items)	0.927 (0.893 to 0.950)
Cognitive (9 items)	0.911 (0.870 to 0.939)
Overall (27 items)	0.935 (0.904 to 0.956)

Table 5. Summary of Internal consistency analysis.

Indicators	Cronbach's $\alpha$
Affective (10 items, first)	0.795
Affective (10 items, second)	0.781
Behavioral (8 items, first)	0.780
Behavioral (8 items, second)	0.766
Cognitive (9 items, first)	0.817
Cognitive (9 items, second)	0.761

12, 13, 15, 23, 24, 25, 26), and cognitive component with 9 items (Nos. 1, 3, 6, 9, 11, 14, 16, 22, 27). Items 1 to 16 were all negative statements; hence, in the data analysis, the negative item results (item numbers 1 to 16) were switched or converted into positive statements/attitudes so that overall there would be a homogenized result of 1 (strongly agree) to 2 (agree), which pertains to a good/positive attitude. Affective, behavioral, and cognitive scores were computed as the sum of scores after conversion based on the groupings of items. The total score was computed to represent the ICC of the whole scale.

Overall, the ICC result of the scale is 0.935, which connotes that the test and re-test reliability of the scale has good correlation with the components – affective (0.895), behavioral (0.927), and cognitive (0.911) - having good correlation respectively (Table 4). The summary of the ICC result per item can be seen in Table 5.

As seen in Table 6, all components (affective, behavioral, and cognitive) resulted in at least 0.70 value of Cronbach's  $\alpha$ , indicating an adequate internal consistency. The answers to the translated scale were also tabulated based on the age groups,

gender, and type of health care provider. Although the study was carried out mainly with the objective to translate and validate the original AT-PLWL scale, the authors decided to include additional information gathered during the study process about the attitudes of HCPs towards persons living with leprosy.

A positive attitude pertains to all positive response to >60% of the questions (>16 out of the 27 questions); 40-60% (12-16 out of the 27 questions) for intermediate attitude; and <40% (<12 out of the 27 questions) for a negative attitude towards PLWL.<sup>22</sup>

For the age group, a p-value of 0.002 (lower than 0.05) means that there is an association between age groups and attitude. Majority of the age group between 21 to 30 years old had a positive attitude towards leprosy while age groups of 31 to 40, 41 to 50, and 61 to 70 had few respondents who have negative attitude towards leprosy.

For the gender, a p-value of 0.863 shows that there is the same profile for males and females. Both resulted in having a positive attitude towards leprosy whether male or female; hence, there is no significant association between gender and attitude.

For the type of health care provider, a p-value of 0.018 connotes that there is an association between the type of health care provider and attitude towards leprosy. Although majority had positive attitude overall, amongst the barangay health workers, 10.6% had negative attitude, 23.4% had intermediate attitude, and 66% had positive attitude toward leprosy patients. Among the nurses, 5.3% had negative attitude, 26.3% had intermediate attitude, and 68.4% had positive attitude toward leprosy patients. Among the physicians, 2.9% had negative attitude, 2.9% had intermediate attitude, and 94.1% had positive attitude toward leprosy patients (Table 6).

## DISCUSSION

Overall, the results revealed good validity and reliability. A tool is considered reliable if it is consistent and stable.<sup>17</sup> Reliability for this scale was assessed in two ways. First, the internal consistency test was measured via calculating the Cronbach's  $\alpha$  coefficient. This is to measure if the same general construct produces similar scores using the translated tool; hence, assessing the degree of consistency and homogeneity between the items. In this study, the Cronbach's  $\alpha$  for all the components (affective,

Table 6. Attitude scores grouped based on the socio-demographic profile of the HCPs.

Characteristics	Negative	Intermediate	Positive	P-value
<b>Age group, years</b>				
21 to 30	0 (0.0)	4 (11.8)	30 (88.2)	
31 to 40	1 (4.5)	3 (13.6)	18 (81.8)	
41 to 50	3 (21.4)	2 (14.3)	9 (64.3)	0.002
51 to 60	0 (0.0)	4 (23.5)	13 (76.5)	
61 to 70	3 (23.1)	4 (30.8)	6 (46.2)	
<b>Gender</b>				
Female	6 (6.7)	15 (16.9)	68 (76.4)	0.863
Male	1 (9.1)	2 (18.2)	8 (72.7)	
<b>Type of health care</b>				
Barangay Health Worker	5 (10.6)	11 (23.4)	31 (66.0)	
Nurse	1 (5.3)	5 (26.3)	13 (68.4)	0.018
Physician	1 (2.9)	1 (2.9)	32 (94.1)	

behavioral, and cognitive) are greater than 0.7, which is indicative of a good internal consistency. In other words, there is adequate consistency and homogeneity between the items, whether they are connoting a positive or negative attitude.

Second is the test re-test reliability which was assessed using the intra-class correlation coefficient (ICC) of responses at two different time points. All ICCs of the items were all above 0.80, indicating a good correlation between the tests. This means that the items answered were relatively consistent across participants.

In addition, overall, another finding in this study showed that the majority (76%) of the HCPs displayed a positive attitude towards leprosy patients, 17% with intermediate attitude, and 7% with negative attitude. However, there could be associations when broken down based on different demographic profiles – age, gender, and type of health care provider. Based on the results, the youngest age group (21 to 30 years old), which comprised of majority of the respondents, had the highest percentage of positive attitude results towards leprosy patients with no negative attitude results in this age group. In contrast, the older age groups (41 to 50, 61 to 70) had a small percentage of negative attitude results. This may be attributed to the fact that the younger generations have better means of access to information because of the developments in technology, providing a quick and efficient tool in accessing information.

For the type of health care provider, in terms of the having a negative attitude towards leprosy patients, the barangay health worker group had more numbers compared to the other groups. Among the barangay health workers, 10.6% have negative attitudes, although a majority of them have positive (66%) and intermediate attitudes (23.4%). This negative attitude of barangay health workers towards leprosy patients may be due to the lack of information or misinformation, which is the reason

why this scale is translated. The investigators aim to gauge the attitudes of HCPs who are frontliners in early case detection and management of leprosy. This then would serve as a tool for future interventions geared against changing negative attitudes.

In the literature, most studies on HCPs were done in India, Botswana, Nigeria, Sri Lanka, Guyana, etc. – all countries with leprosy data and pockets of cases in far-flung areas. All studies focused on knowledge, attitudes, and/or practices of HCPs towards leprosy. According to Srinivas et al. (2018), they found that majority of the items in the different scales were more representative of knowledge and practice rather than attitude; hence, this served as their justification for developing a new scale.<sup>12</sup> The questionnaires/scales on the HCPs' knowledge, attitudes, and/or practices have varying results. Recent studies by Ahmad et al. (2010) and Ewhrudjakpo (2017) revealed average to good knowledge, positive behavior and attitude of HCPs towards leprosy, with most of the population consisting of medical officers, consistent with the results of this study.<sup>5,6</sup> However, some studies like that of Wijeratne and Ostbye (2017) conducted in Sri Lanka revealed negative results to knowledge, attitudes, and practices among HCPs towards leprosy.<sup>7</sup> Although most participants could identify lesions and suspicious signs of leprosy, still, a huge percentage believed leprosy is still easily transmitted by touch and 34% were still scared of leprosy.<sup>7</sup> Older studies by Kumaresan and Maganu (1994) revealed poor knowledge amongst 99 HCPs, which was believed to influence attitude consequently.<sup>8</sup> Although a study by Briden and Maguire (2003) revealed a relatively good knowledge of leprosy, still, certain facts about leprosy were not widely known.<sup>9</sup> Half of the respondents did not know that leprosy is curable and that leprosy can still be easily transmitted by touch.<sup>9</sup> Still, despite varying results over time, misconceptions still exist amongst countries.



## LIMITATIONS AND RECOMMENDATIONS

The translated tool has a good content validity using i-CVI with a reasonable representation based on its relevance and applicability. Although this scale was successfully translated, validated, and deemed reliable, still this scale is a pilot study with 100 participants in a limited area. To be able to come up with a good estimate of HCP attitudes, this has to be performed in a wider population and more areas. Also, although the Philippines national dialect is Tagalog, there are other regions with different dialects with natives that could not understand Tagalog. Hence, for this scale to reach on national level, further re-

search must be done to be able to translate this to other dialects and culturally adapt to ethnic groups across the country.

## CONCLUSION

The final translated Filipino version of the AT-PLWL scale is similar to the original scale and could be used to evaluate HCPs' attitudes. The translated scale was deemed valid and reliable as shown and explained in the results and discussion. This scale may serve as a tool to assess changes in HCP's attitudes following interventions/activities geared against changing negative attitudes.

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