

Validation of the Pictorial Pediatric Symptom Checklist – Filipino Version for the Psychosocial Screening of Children in a Low-income Urban Community

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ABSTRACT

Rationale. The timely identification of children with psychosocial problems is very important in facilitating early intervention. Detection of these children in the community setting requires the development of an easy-to-use screening tool that can be used by community health workers.

Objective. To develop a valid and reliable screening tool that can be easily used by community health workers for the detection of psychosocial problems in Filipino children. Specifically, 1) To develop a Filipino version of the Pictorial Pediatric Symptom Checklist (PPSC) for use by community health workers; and 2) To culturally validate the PPSC-Filipino version in a low-income urban community.

Methods. This study consisted of three phases: Phase 1 (Exploratory Study) consisted of focus group discussions and key informant interviews for content validation. Phase 2 (Questionnaire Development) involved refinement of the Filipino translation of the PPSC. In Phase 3 (Actual Survey), the PPSC was administered by health workers to 127 primary caregivers of children aged 4 to 7 years residing in a low-income community in Pandacan, Manila. Data gathered were subjected to reliability testing and factor analysis for construct validation. Chi-square analyses were done to determine the association of sociodemographic factors to overall PPSC results.

Results. Construct and content validity were confirmed. The Filipino PPSC showed high internal consistency (Cronbach's alpha 0.89). Factor analysis resulted in three new domains: 1) Attention & Externalizing Problems, 2) Internalizing Problems, and 3) School & Learning Problems. Among the 127 children screened, 24 (18.9%) were positive for psychosocial problems. Externalizing behaviors (fighting, rule-breaking, teasing) dominated among those who screened positive. The child's age and number of siblings were the factors significantly associated with the overall PPSC results.

Conclusions. The Pictorial Pediatric Symptom Checklist-Filipino Version is a valid and reliable tool in screening for psychosocial problems in children aged 4 to 7 years old residing in a low-income urban community. Administration by community health workers is feasible and its use in the community setting is particularly relevant since many cases of psychosocial disorders remain undetected.

Key words: psychosocial problems, behavioral symptoms, community screening services, validation study

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Introduction

With the changing environment of children—characterized by increased exposure to violence, sex and drugs through different forms of media—and the changing face of the Filipino family, with one or both parents leaving their children to work overseas, there has been increasing concern about the effect these changes may have on the psychosocial development of children. Psychosocial problems that may arise include disturbances in behavior, emotions, bodily functions or school performance.¹ These manifestations of dysfunction can result when changes in the environment and social conditions combine with familial and individual risk factors.²

Early detection of psychosocial dysfunction in children will allow for early intervention and better outcomes. They are more likely to graduate from high school, hold jobs and live independently compared with those who are diagnosed late. They are also less likely to have violence and delinquency in later years.^{3,4} If untreated, these psychosocial problems can cause considerable distress for the afflicted children, and will most likely persist to cause functional impairment in adulthood.

The Philippine government acknowledges the importance of addressing the needs of these children, as evidenced by specific directives in Presidential Decree No. 603 or the Child and Youth Welfare Code. Article 87 states that every barangay shall organize a local Council for the Protection of Children that shall, among other duties, “take steps to prevent juvenile delinquency and assist parents of children with behavioral problems so that they can get expert advice.”⁵

However, many at-risk children might not be getting proper attention. Early detection needs to be community-based, especially in urban poor communities where significant adversity occurs with a low likelihood of children being brought to experts for medical intervention. One important strategy is to equip the community health workers with a culturally validated and easy-to-administer screening tool that will specifically address behavioral and psychosocial problems. The objective of this study is to develop a valid and reliable screening tool that can be easily used by community health workers for the detection of psychosocial problems in Filipino children.

The Pediatric Symptom Checklist as a Screening Tool

Among the various psychosocial screening tools already available, the Pediatric Symptom Checklist (PSC) developed by Jellinek and Murphy⁶ stands out because it is easily administered. It consists of only 35 items that are rated as never, sometimes or often present (scored 0, 1 and 2 respectively). The sum of item scores is recoded into a dichotomous variable indicating the presence or absence of psychosocial impairment. The PSC has been shown in several studies to validly and reliably detect behavioral and emotional problems in American and Mexican populations.^{6,7,8,9}

Gardner et al.¹⁰ identified 17 out of the 35 items in the PSC to strongly correlate with specific domains, which he named subscales of the PSC, as follows:

Attention Subscale: items 4, 7, 8, 9, 14 (positive if total score for these items ≥ 7)

Internalizing Subscale: items 11, 13, 19, 22, 27 (positive if total score for these items ≥ 5)

Externalizing Subscale: items 16, 29, 31, 32, 33, 34, 35 (positive if total score for these items ≥ 7)

Children who screen positive on the Attention Subscale need to be evaluated for Attention Deficit Hyperactivity Disorder. The Internalizing Subscale screens for depression and anxiety; thus, those who screen positive need counseling and may eventually be considered for psychopharmacotherapy. Children who screen positive on the Externalizing Subscale need behavioral intervention as this subscale screens for conduct disorder, oppositional defiant disorder and rage disorder, among others.

Talavera-Icban in 2007¹¹ translated the PSC into Filipino and administered it to 104 subjects in a private tertiary hospital in Angeles City, Philippines. This study established the relevance of psychosocial problems in Filipino society and the usefulness of a screening tool like the PSC in a hospital setting. A total of 12 out of the 104 children (11.5%) screened were found to be positive for psychosocial problems based on their PSC scores. Reliability analysis showed that the Filipino PSC items demonstrated high internal consistency (Cronbach's alpha = 0.87). However, the study had a checklist completion rate of only 76%. Many questionnaires had four or more items unanswered and were hence considered invalid. This was far below the completion rate of 97% in the US National Feasibility Study⁸ and suggested that despite the translation of the PSC to Filipino, this may still not be considered easily acceptable to a large number of Filipino mothers who may have some issues with literacy.

Similar problems with completion and acceptability were noted in low-income Hispanic populations¹² prompting Leiner and Shirsat to add pictorials to the PSC, resulting in the Pictorial Pediatric Symptom Checklist (PPSC).^{13,14} Compared with the original PSC, the PPSC used on a Mexican population yielded better psychometric properties and prevalence rates consistent with most epidemiologic studies. Considering that the setting for this current study is a low-income urban community, where the educational attainment of the respondents may only be elementary or high school level, validation of a Filipino version of the pictorial PSC was deemed most appropriate.

Methods

This study consisted of three phases: 1) Exploratory Study, 2) Questionnaire Development, and 3) Actual Survey. The study site is a community (locally known as *barangay*) in Pandacan, Manila composed of approximately 600 households, with children aged 4 to 7 years old comprising about 4% of the total population. It is officially classified by the Manila Health Department as a depressed area based on the appearance of the dwellings (improved from thin wooden or iron sheets) and the general socioeconomic status of the residents.

Phase 1 utilized qualitative methods in order to culturally validate the relevance of the screening instrument to be used. Focus group discussions established the presence of behavioral problems in the barangay. Available literature was reviewed to corroborate the output of the group discussions. Finally, expert opinions of developmental and behavioral pediatricians as well as a health social scientist were sought regarding the definition of the constructs, the content of the

questionnaire and its applicability to the local setting and the target population.

In Phase 2, the Filipino version of the Pediatric Symptom Checklist translated and back-translated from the original in the previous study by Talavera-Icban¹¹ was examined and modified by two bilingual physicians, a Filipino literary expert and a health social scientist for applicability in the urban community setting of Metro Manila.

Further refinement of the questionnaire was done by using key informant interviews of community health workers and mothers of children aged 4 to 7 years old with a similar socio-demographic profile as the intended survey respondents. Comments were also elicited from two focus group discussions regarding the cultural applicability of the PPSC illustrations. Pre-testing of the translated questionnaire was done on 10 respondents meeting the inclusion criteria (see below). These respondents answered the questionnaire then were asked additional questions for cognitive debriefing on the following: (1) their reaction to the format, (2) readability, (3) facility to answer, and (4) suggestions on how to improve the questionnaire. All their comments were considered in the process of enhancing the questionnaire content, translation, phrasing and format.

In Phase 3, respondents were included if they were primary caregivers of children aged 4 to 7 years old residing in the identified community and if they could read and understand Filipino. They were excluded if they were unable to make daily observations of the child's behavior or if the child had been previously diagnosed with a chronic mental or neurological disease or disability. If more than one eligible caregiver was present for interview, the following was the pre-determined order of priority in choosing the respondent: mother > father > other caregiver. A health worker previously trained in the administration of the questionnaire acquired consent for participation in the study. The respondent was then given the PPSC-Filipino version to complete (see Figure 1). The health worker was available for any question the respondent may have had while completing the checklist but did not directly administer it. Demographic and contact information were also collected.

The community health workers involved in this study were residents of Pandacan who had prior basic training on primary healthcare. Because of their previous experiences in conducting community surveys in line with their work, they already had skills in acquiring consent and interviewing. Their one-day training for the present study included a detailed discussion of the survey instruments and a briefing on the study methodology. They were given compensation for their involvement in this study.

Data gathered from Phase 3 were subjected to statistical analysis which included descriptive and chi-square analysis of demographic information, as well as reliability analysis and factor analysis of PPSC items. Children who screened positive for psychosocial problems were referred to the Philippine General Hospital for further evaluation and management.

Results

Phase 1

To get the proper perspective on the problem in the local setting, two focus group discussions (FGDs) were conducted involving community health workers (salaried barangay health workers as well as healthcare volunteers), who were all residents of Pandacan, Manila. There were seven to eight participants per group, mostly women who were themselves parents. They had varying levels of education. The participants in both FGDs were asked about their perceived prevalence of

behavioral and psychosocial problems among young children in their community. They were asked if there was an increase in the magnitude of these problems, and if these children were being given adequate attention and intervention by their families and the community. Their knowledge of the importance of intervention was also probed by asking what they thought would happen to problematic children who are recognized early and given intervention as opposed to those not given intervention.

There was general agreement within and between groups in answering the questions posed, with no contradicting information gathered. All the participants agreed that many children in their community had psychosocial problems, and one participant pegged it at 20% of the 4 to 7 year old age group. They mentioned hyperactivity, aggression, cursing and imitating other bad adult behavior as common among young children. They agreed that the number of these problematic

lack adequate infrastructure and require a small monthly contribution from parents. Other suggested projects include seminars for parents on values formation and good parenting. These seminars should be implemented at the barangay level and should specifically target parents of children identified to be problematic. They emphasized, however, that livelihood programs need to be strengthened as well because any talk about parenting may not be effective in very poor families who are first and foremost concerned about basic survival.

Phase 2

From the original English Version of the PSC/PPSC, the Filipino translation evolved through several revisions: from the first translation by Talavera-Icban¹¹ to further refinements resulting from the key informant interviews, pretesting and final appraisal. Comparison of these different versions is shown on Table 1.

Regarding the drawings of the PPSC, the participants of the focus groups and the pretesting were in agreement that the general appearance and facial expressions were representative of Filipino children and that there were no pictorials that appeared culturally inapplicable. The general format of the questionnaire was considered very attractive, readable and easy to answer, such that the respondents did not mind spending time to complete the questionnaire. The pretesting showed that questionnaire completion took only five to ten minutes. Only one of 10 respondents required clarification of the written instructions. All respondents completed the PPSC in a self-administered manner without coaching from the researcher who was present for assistance.

Phase 3

Sociodemographic Profile of Respondents

A total of 127 subjects were included in the study. There was a 100% completion rate of questionnaires. Of the 127 questionnaires, 115 were answered by mothers, 6 by fathers and 6 by other primary caregivers (three by grandmothers, and three by aunts).

Sociodemographic information about the parents was elicited whether or not they were the main caregivers of the child. Maternal age ranged from 21 to 50 years, with a mean of 32 years (standard deviation 1.28). Paternal age ranged from 20 to 65 years, with mean of 36 years (standard deviation 8.96).

Most of the main caregivers (77%) reached at most only a high school level of educational attainment. Majority (76%) of the mothers were housewives, while majority of the fathers were employed in blue-collar jobs. Monthly family income ranged from Php1,200 to 40,000, with mean of Php8,471 (standard deviation Php5,792). Using the official Poverty Threshold for the National Capital Region (National Statistical Coordination Board, 2006),¹⁵ 65.35% of subjects fell below the poverty line. The Poverty Threshold refers to the cost of the basic food and non-food requirements and may be viewed as the minimum income required. This is expressed in annual per capita values published every three years. The latest statistics for the National Capital Region (1996) showed the Annual Per Capita Poverty Threshold to be Php20,566.

Profile of Children

Of the 127 children screened using the PPSC, 24 (18.9%) yielded scores equal to or above the cutoff scores for age. This is higher than the findings (11.5%) of the only other PSC study done in the Philippines by Talavera-Icban.¹¹ There was a higher proportion of girls screening positive (13/52 or 25%) compared with boys (11/75 or 14.67%). Figure 2 shows the distribution of children screened according to age and total score interpretation.

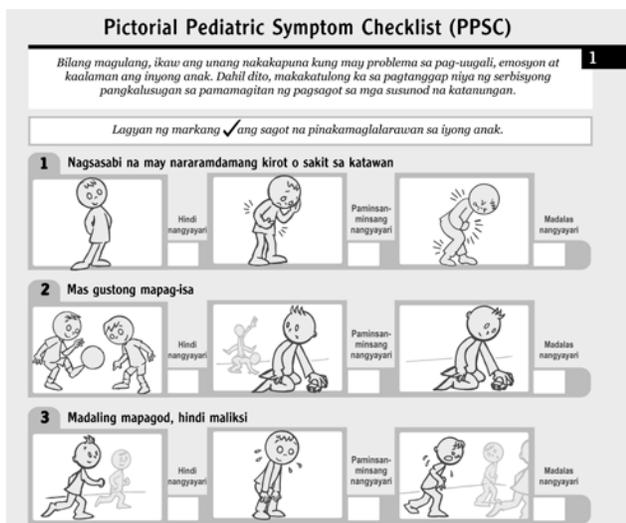


Figure 1. Excerpt of the Pictorial Pediatric Symptom Checklist-Filipino Version

children seems to have increased compared to the previous generation and blamed a changing environment as the main cause. They cited the following contributory factors: the neglect of children by parents who have pressing financial concerns; the proliferation of violent games in computer shops and arcades; and the lack of parental education and good modeling. It was also mentioned that in families with inadequate birth spacing in between siblings, children of the preschool age tended to be neglected in favor of younger siblings, and were sometimes even given inappropriate responsibilities like taking care of infants. Changing family values like diminishing respect for parents are also apparent in the children's lack of fear about bending rules and not following commands.

The participants agreed that such problematic children were not adequately given attention in the present system and that these children would probably grow up to be drug addicts or other problematic adolescents and adults. They believed that bringing these children to a medical specialist will identify what the problems in the child are, but there should also be corresponding education for the parents.

They suggested strengthening the public daycare system in order to include all children in the preschool age group and keep them off the streets. Currently, there is a public daycare in each barangay providing structured educational services to preschool children; however, many of these places

Chi-square analysis was used to determine the association between the overall result of the PPSC and the following factors: child's age, child's sex, schooling, number of siblings, birth order, history of chronic illness in the child, mother's employment status, poverty threshold classification, family history of psychosocial problems, prenatal complications, perinatal complications, as well as age, sex and educational attainment of the main caregiver. Results showed that only

4 to 5 year olds. Placement in a school or daycare for these younger children was not significantly associated with the overall result of the PPSC.

The dominant problem in the 4 to 5 year olds was externalizing behavior. Out of the nine 4-year-old children who screened positive on the entire scale, eight screened positive on the Externalizing Subscale. Among the 5-year-old children, all of the 10 who screened positive on the entire scale were also positive on the Externalizing Subscale.

Table 1. Comparison of the English and Filipino versions of the PSC/PPSC (excerpt)

Original English Version of PSC/PPSC	Talavera-Icban et al 2006 (PSC)	Canceko-Llego et al 2008 (PPSC) post-FGD and key interviews	Canceko-Llego et al 2008 (PPSC) post-pretest and appraisal
Emotional and physical health go together in children. Because parents are often the first to notice a problem with their child's behavior, emotions or learning, you may help your child get the best care possible by answering these questions.		Ang emosyonal at pisikal na katangian ay parehong importante sa kalusugan ng bata. Ang mga magulang ang unang nakakapuna kung may problema sa pag-uugali, emosyon at kaalaman ng kanilang anak. Dahil dito, makakatulong ka sa pagtanggap niya ng pinakamagandang serbisyong pangkalusugan sa pamamagitan ng pagsagot sa mga susunod na katanungan.	Bilang magulang, ikaw ang unang nakakapuna kung may problema sa pag-uugali, emosyon at kaalaman ang inyong anak. Dahil dito, makakatulong ka sa pagtanggap niya ng serbisyong pangkalusugan sa pamamagitan ng pagsagot sa mga susunod na katanungan.
Please mark with a ✓ the statement that best describes your child.		Lagyan ng markang ✓ ang sagot na pinakamaglalarawan sa iyong anak.	Lagyan ng markang ✓ ang sagot na pinakamaglalarawan sa iyong anak.
1. Complains of aches and pains	1. Dumadaing ng sakit at kirot	1. Nagsasabi na may nararamdamang kirot o sakit sa katawan	
2. Spends more time alone	2. Madalas gustong nag-iisa	2. Mas gustong mapag-isa	
3. Tires easily, has little energy	3. Madaling mapagod, kaunti lamang ang lakas	3. Madaling mapagod	3. Madaling mapagod, hindi maliksi
4. Fidgety, unable to sit still	4. Di mapakali, di makaupo nang matagal sa isang lugar		
5. Has trouble with teacher	5. Hindi kasundo ang kanyang mga guro	5. Laging napapagilitan o napupuna ng guro	5. Nagkakaroon ng problema sa titser
6. Less interested in school	6. Hindi siya masyadong interesado sa eskwelahan	6. Hindi masyadong interesado sa eskwelahan	6. Hindi masyadong interesado sa pag-aaral
7. Acts as if driven by a motor	7. Mabilis magkikilos na parang di-motor	7. Sobrang likot	
8. Daydreams too much	8. Madalas managinip	8. Madalas tulala, nangangarap nang gising	8. Madalas nangangarap nang gising

Note: Blank spaces denote no change in translation from the previous column.

two factors were significantly associated with the overall result of screening positive or negative: the number of siblings (p-value 0.018) and the child's age (p-value 0.026).

Children with two or three siblings tended to screen negative on the PPSC, with only 7.6% of this group screening positive. In the group of children with only one or no sibling, 25% screened positive, while among those with four or more siblings, 30.8% screened positive.

Regarding the child's age, those in the 4 and 5 year old groups tended to have a greater proportion (23.1% and 34.5%, respectively) who screened positive on the PPSC compared to those in the 6 and 7 year old groups (7.1% and 9.7%, respectively). Since majority of the 4-year-old children (30 of 39) and about half of the 5-year-old children (14 of 29) had no schooling, additional subgroup analysis was done among the

Validity and Reliability of the PPSC-Filipino Version

Using STATA 9.0, reliability analysis was done by measuring inter-item correlation, item-total correlation, and Cronbach's coefficient alpha. The three subscales from the original PSC (Attention, Externalizing and Internalizing) were initially analyzed. Table 2 shows the results of the reliability analysis for each of these subscales.

There are no strict cut-off values for good correlation, but generally these are set at 0.4 to 0.6 for inter-item correlation, > 0.2 for item-total correlation and > 0.6 for Cronbach's alpha. The judgment of the investigator as to which items to retain or delete after reliability testing is important.¹⁶ From Table 2 we see that the Externalizing and Internalizing Subscales had good item-total correlation and acceptable values for

Table 2. Reliability analysis results for the original subscales

Subscale	Average Inter-item Correlation	Average Item-total correlation	Overall Cronbach's alpha
Attention Subscale	0.22 (range 0.03-0.41)	0.34 (range 0.19-0.44)	0.58
Externalizing Subscale	0.35 (range 0.14-0.51)	0.52 (range 0.47-0.59)	0.79
Internalizing Subscale	0.28 (range 0.16-0.40)	0.41 (range 0.35-0.46)	0.65

Cronbach's alpha. Only the Attention Subscale showed poor internal consistency (Cronbach alpha <0.60). Further analysis showed that Item #8 ("Daydreams too much") consistently had low scores in inter-item and item-total correlation. When this item was removed from the subscale, the Cronbach alpha improved.

Analysis of the entire checklist showed a high Cronbach coefficient of 0.89. There was also good item-total correlation.

Face and content validity of the PPSC-Filipino Version were established through qualitative methods like small group discussions, key informant interviews and expert assessments as described in the Methods section.

For construct validation, factor analysis was employed. Factor analysis is a statistical method that aims to discover simple patterns in the relationships among variables.¹⁷ For this study in particular, the goal is to discover if the variables (questionnaire items) can be explained in terms of a smaller number of factors which correspond to constructs. The 35 items were subjected to Factor Analysis. Factors with eigenvalues greater than one were retained. Varimax rotation was employed to the unrotated factor matrix. Four factors were extracted, which explain 74.2% of the total variance. The first factor explains 46.8% of the variance, while the other factors are less significant, each explaining about 10% of the total variance.

The first factor covered 12 items (See Table 3). This factor seems to describe a hyperactive child who frequently gets into trouble with adults and into fights with peers because of his impulsive behavior. Four of the 12 items (#4, 7, 9, 14) belonged to the Attention Subscale of the original English version while four other items (#16, 29, 34, 35) belonged to the original Externalizing Subscale. Thus, this first factor can be said to correspond to the domain of Attention and Externalizing Problems.

The second factor covered 13 items (Table 3) and seems to describe a quiet, timid child lacking in self-confidence and who is often sad or anxious. Five of the 13 items (#11, 13, 19, 22, 27) belonged to the original Internalizing Subscale. Thus, this second factor corresponds to the domain of Internalizing Problems.

The third factor has six items which do not seem to belong together conceptually, thus these items are designated as unclassified.

The fourth factor includes only four items and these all pertain to School and Learning Problems. Figure 3 shows the comparison of item distribution according to the original subscales and the new domains resulting from the factor analysis. The PSC English version had three identified subscales comprising a total of 17 items¹⁰, with 18 items left unclassified. This Filipino version of the PPSC defines three new domain classifications, with six items unclassified. Reliability analysis of these new domains showed increased values for Cronbach's alpha (see Table 3).

Discussion

The addition of pictorials to the Pediatric Symptom Checklist-Filipino Version, used for the first time in the Philippines in this study, was deemed important in the success of information gathering in a low-income community setting where the biggest proportion of respondents only had

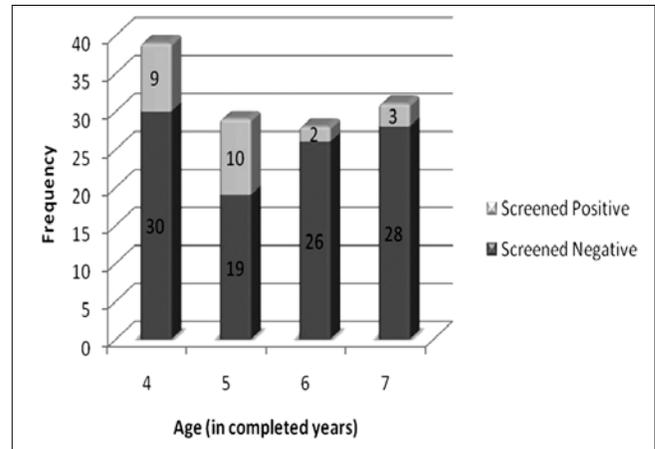


Figure 2. Distribution of children screened according to age and total score interpretation.

a high school level of educational attainment. Although the availability of an interviewer for questions contributed to the 100% completion rate of the PPSC, the pictorial format by itself generated good feedback from respondents in all phases of the study. Respondents agreed that the PPSC is an attractive, interesting and easy-to-understand instrument because of the pictorials.

Validity and reliability of the Filipino PPSC necessarily had to be established especially since it is the first time that this tool, usually administered in the medical clinic setting, was used in the community setting. Cultural considerations including language, socioeconomic status and perceptions about psychosocial problems also came into play in the development and validation of the translation.

Reliability analysis of the entire checklist showed very good internal consistency (Cronbach alpha 0.89), similar to the findings of the Talavera-Icban¹¹ PSC study (Cronbach alpha 0.87). However, there was poor internal consistency of the Attention Subscale. This can be attributed to language artifact: item #8 "Daydreams too much" was translated as "Madalas nangangarap nang gising." Taken in the context of the Attention Subscale, this item was meant to describe a child's lack of focus on tasks at hand, but this purpose is not necessarily reflected in the translation. The Filipino version of this particular item may be more culturally consistent with another construct like internalizing behavior.

This was confirmed by the results of the factor analysis (Table 3), which showed item #8 to be grouped together with other items descriptive of internalizing problems. On the other hand, item #21 "Has trouble sleeping" when translated as "Hirap matulog" was found to be more consistent with attention-hyperactivity problems rather than internalizing problems. Although it is not among the items in the original Internalizing Subscale, it is reflective of sleeping difficulties classically associated with anxiety or depression. However, in the Philippine setting, where perhaps anxiety or depression is not common among children, the item was likely perceived as the caregiver's difficulty in making a child go to sleep, usually

seen in hyperactive children.

Also shown by the factor analysis was the grouping together of attention-hyperactivity items with externalizing behavior items. This suggests that in Filipino culture, the young hyperactive child with attention problems is also often seen to get into trouble with adult caregivers and to get into fights with peers. Such behavior is often described by the Filipino words “*malikot at makulit*” or “*pasaway*”.

When the new domains formed were checked for internal consistency, the Cronbach alpha values were better than those of the original subscales; thus, these newly grouped items can be said to be more reliable measures of the constructs.

These shifts in items and their domains upon translation to Filipino proves that in applying an existing foreign questionnaire to the local setting, it is not enough to simply translate the words and interpret the results in the same way. The translated version has to be checked for applicability of the constructs.

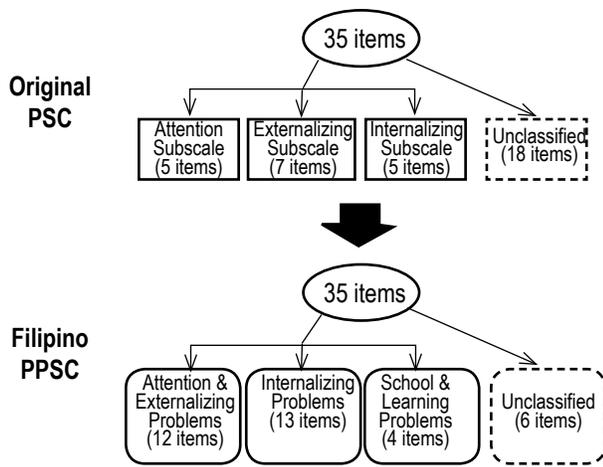


Figure 3. Comparison of item distribution according to subscales in the original PSC and domains in the Filipino PPSC.

Having established the validity and reliability of the Filipino PPSC, we now look at what it measures. Cut-off scores of 24 (for 4 to 5 years old) and 28 (for 6 to 16 years old) have been previously established⁶ such that those who score equal to or greater than these cut-offs are said to screen positive and should be evaluated further to establish the diagnosis of psychosocial disorders. In this study, the proportion of children who screened positive (18.9%) was higher than the rates seen in the Talavera-Icban study¹¹ (11.5%) and the US National Feasibility Study⁸ (10% in preschool population) both of which utilized the PSC. It is closer, however, to the findings of Leiner et al.¹⁴ (16%) which utilized the Pictorial PSC in a Mexican population. It is possible that the pictorial format is better able to detect children with problems because the drawings contribute to a better understanding of what is being asked in each question.

Another possible factor for the greater prevalence rate seen in this study is the target population of children in a low-income urban community. Compared to children consulting in clinics, the target population for all the other studies, healthcare-seeking behavior for many of those in the community may be different. The actual prevalence of psychosocial disorders may in fact be higher than estimated in clinic-based studies simply because not all of these children are brought to the doctor for consult. This reinforces the

Table 3. Comparison of original subscales and new domains

Original Subscales		New Domains	
Subscale & Items	Alpha	Domain & Items	Alpha
<u>Attention Subscale</u>	0.58	(Factor I) Attention and Externalizing Problems	0.83
4. Fidgety, unable to sit still		4. Fidgety, unable to sit still	
7. Acts as if driven by a motor		7. Acts as if driven by a motor	
8. Daydreams too much		9. Distracted easily	
9. Distracted easily		12. Is irritable, angry	
14. Has trouble concentrating		14. Has trouble concentrating	
<u>Externalizing Subscale</u>	0.79	16. Fights with other children	
16. Fights with other children		21. Has trouble sleeping	
29. Does not listen to rules		25. Takes unnecessary risks	
31. Does not understand other people's feelings		26. Gets hurt frequently	
32. Teases others		29. Does not listen to rules	
33. Blames others for his or her troubles		34. Takes things that do not belong to him or her	
34. Takes things that do not belong to him or her		35. Refuses to share	
35. Refuses to share			
<u>Internalizing Subscale</u>	0.65	(Factor II) Internalizing Problems	0.82
11. Feels sad, unhappy		3. Tires easily, has little energy	
13. Feels hopeless		8. Daydreams too much	
19. Is down on him or herself		10. Is afraid of new situations	
22. Worries a lot		11. Feels sad, unhappy	
27. Seems to be having less fun		13. Feels hopeless	
		15. Less interested in friends	
		19. Is down on him or herself	
		20. Visits the doctor with doctor finding nothing wrong	
		22. Worries a lot	
		23. Wants to be with you more than before	
		27. Seems to be having less fun	
		28. Acts younger than children his or her age	
		30. Does not show feelings	
		(Factor IV) School or Learning Problems	0.60
		5. Has trouble with teacher	
		6. Less interested in school	
		17. Absent from school	
		18. School grades dropping	

importance of community-based studies like this one.

The sociodemographic factors found to be significantly associated with the overall result of the PPSC were the number of siblings and the child's age. Those with four or more siblings had the greatest proportion perceived to have psychosocial problems. This may reflect the situation where parents who have many children to look after are less tolerant of wayward

behavior and may be more likely to perceive such behavior as problematic. On the other end of the spectrum, parents who have only one or two children are likely to be new parents who tend to be overly concerned about their child's behavior compared to those parents with two or three children whose parental experience makes them more tolerant.

The analysis also showed that regardless of sex, children aged 4 or 5 had a greater tendency to screen positive compared to those aged 6 or 7. The higher prevalence among those in the 4- and 5-year-old age groups could not be attributed to the lower cut-off score of 24 (compared with the cut-off score of 28 for those aged > 6 years), because 14 of the 19 children who screened positive had total scores above 28. This suggests that these younger children are really at higher risk for psychosocial problems. According to Illingworth², it can be normal for young children to be aggressive and quarrelsome, but excessive aggressiveness and quarrelsomeness may be early indications of future antisocial behavior. He further states that the major cause of such early problematic behavior is often an undesirable environment at home. Since younger children are more exposed to the home environment compared to older children who are mostly in school, such home-related factors must always be investigated and addressed.

Community factors that contribute to the prevalence of psychosocial problems truly need to be investigated further. This study showed that externalizing problems such as fighting, rule-breaking and teasing dominated among those who screened positive. The absence of good parental modeling or the negative influence of electronic media may be possible contributory factors, but unfortunately the investigation of the association of these factors is not within the scope of this study.

Conclusions

The Pictorial Pediatric Symptom Checklist-Filipino Version is a valid and reliable tool in screening for psychosocial problems in children aged 4 to 7 years old residing in a low-income urban community. Administration by trained community health workers is feasible and its use in the community setting is especially relevant given that many cases of psychosocial disorders remain undetected.

In the validation process, three new domains were formed: 1) Attention and Externalizing Problems, 2) Internalizing Problems, and 3) School and Learning Problems. These domains of the Filipino version of the PPSC were found to be more culturally consistent in the local setting.

Twenty-four of the 127 children aged 4 to 7 years old screened positive in this study and thus need to be evaluated further for psychosocial disorders. This study also showed that the number of siblings and a child's age were factors significantly associated with the overall result of screening positive or negative on the PPSC. The group of children with four or more siblings had the greatest prevalence of those screening positive, while those with two or three siblings had the least prevalence. Children aged 4 or 5 years old tend to have a greater proportion of screening positive compared to those in the 6- to 7-year-old age groups.

Limitations of the study

The term Filipino in this study refers to the national language of the Philippines that is taught all over the country but used primarily only in Tagalog-speaking areas. The current validation is particularly set in a low-income urban community in Manila where the nuances of language and culture may not be the same as in other areas.

The sensitivity and specificity of the Filipino PPSC as

a diagnostic tool was not measured, as it is not within the scope of this study. Previous studies on the PPSC compared its results with concurrent results on the Child Behavior Checklist; however, this was considered an inappropriate gold standard by the investigators since it has not been locally validated. Although the children who screened positive on the PPSC were referred for further clinical evaluation as part of the ethical considerations of this study, it was not feasible to measure diagnostic accuracy as it would have entailed doing clinical evaluation of all subjects, not only those who screened positive.

Recommendations

Validation of this version in other segments of the Filipino population is needed in order to widen its applicability as a Filipino version. Further study should also be done to check its stability across time and different raters. Concurrent validation of the tool with clinical evaluation should likewise be conducted to further strengthen its validity. The use of the new domains demonstrated to be internally consistent in this study should also be explored and cut-off scores established through further analysis.

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