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Validation and Psychometric Properties of the Thai Version of Phubbing Scale in Adolescents

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Abstract

This study aimed to validate and assess the psychometric properties of the Thai version Phubbing Scale in adolescents. With the proliferation of smartphone use, the phenomenon of "phubbing", or snubbing someone in favor of one's phone, has become increasingly prevalent. To address this, a reliable and culturally appropriate measurement tool was essential. The Thai Phubbing Scale, consisting of eight items, was translated following established guidelines, and tested among 280 Thai participants.

The results indicated that the scale demonstrated good internal consistency, with Cronbach's alpha coefficients of 0.80 for the total scale, 0.76 for Communication Disturbance, and 0.77 for Phone Obsession. Exploratory factor analysis confirmed a consistent two-factor structure, accounting for 59.9 percent of the total variance. Confirmatory factor analysis (CFA: CMIN/DF = 3.097, GFI = .950, RMSEA = .087, CFI = .940, NFI = .915, PNFI = .621, and TLI = .911) supported the scale's construct validity. These findings suggested that the Thai version of the Phubbing Scale is a reliable instrument for assessing phubbing behaviors among Thai adolescents.

Keywords: *Adolescents, Phubbing Scale, Psychometric Properties, Thai*

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Received: October 26, 2023; Revised: March 14, 2024; Accepted: March 21, 2024

Introduction

The widespread use of smartphones has transformed the way we connect and communicate (Buckle, 2016; Garrido, Issa, Esteban, & Delgado, 2021) These small devices have evolved far beyond their original purpose of making calls, becoming versatile tools for social networking, entertainment, work, and more. They enable us to connect and access information with ease, transcending geographical boundaries (Turkle, 2012; Karadağ et al., 2015; Chotpitayasunondh & Douglas, 2018).

Smartphones, while beneficial, have introduced behaviors detrimental to social interactions, notably "phubbing". This human behavior, where individuals focus on their phones in social situations rather than the people around them, negatively affects relationships. Since its coinage in 2012, the term "phubbing" has highlighted how such behaviors can impair interpersonal connections (Karadağ et al., 2015; Roberts & David, 2017; Schneider & Hitzfeld, 2019).

While scholars in Western countries have extensively studied phubbing and developed measurement scales, its investigation within the Thai cultural context is limited. Thailand's unique culture, communication norms, and social expectations make it an interesting context to explore phubbing. This study addresses this gap by translating the 8-item Phubbing Scale into Thai and assessing its psychometric properties. It aims to provide a valuable tool for researchers and practitioners interested in understanding phubbing among Thai adolescents.

This research sheds light on digital communication patterns in Thailand and offers insights for developing interventions to promote digital etiquette and nurture meaningful interpersonal relationships in the smartphone era. In a world where smartphones are ubiquitous, understanding and mitigating the negative effects of phubbing are crucial. By providing a reliable tool for assessing phubbing behavior in the Thai context, this study contributes to a broader discussion on responsible technology use. It seeks to tackle the challenges of phubbing while leveraging the benefits of digital connectivity in a culturally sensitive way.

Objectives

1. To translate the Phubbing scale into the Thai language for use with adolescents.

2. To assess the psychometric properties of the Thai version of Phubbing Scale, establishing its suitability for future research involving Thai adolescents.

Literature Review

While smartphones have undeniably revolutionized the way we live, work, and connect, they have also ushered in a host of behavioral complexities and societal challenges. One such challenge that has garnered widespread attention in the digital age is the phenomenon of "phubbing", a portmanteau of the words, "phone" and "snubbing." It refers to the act of snubbing or ignoring someone in favor of using your smartphone or other mobile device (Karadağ et al., 2015; Robert & David, 2017).

Coined in 2012 by McCann Melbourne in Australia and subsequently added to the Macquarie Dictionary, "phubbing" encapsulates the practice of individuals, often unconsciously, diverting their attention from face-to-face interactions to engage with their smartphones (Karadağ et al., 2015; Robert & David, 2017; Schneider & Hitzfeld, 2019). This seemingly innocuous act has become an integral part of modern communication dynamics, so ingrained in our daily lives that it often goes unnoticed (Chotpitayasunondh & Douglas, 2018).

Phubbing, however, is far from benign. It extends beyond the realm of momentary distraction and can significantly impact interpersonal relationships. Recent research suggests that individuals who fall victim to phubbing often experience negative emotional responses, including feelings of neglect, frustration, and resentment (Guadagnoli & Velicer, 1988; Ranie & Zickuhr, 2015). These emotional ramifications can cast long shadows, potentially eroding the quality of relationships and diminishing the fabric of social bonds.

To shed light on this intriguing and socially relevant phenomenon, the Phubbing Scale was developed, initially comprising two dimensions, each with five items (Karadağ et al., 2016; Blachnio et al., 2021). This scale has since undergone international adaptation and validation, offering insights into the cross-cultural variations and shared traits of phubbing behaviors (Child, 2006; Blachnio et al., 2021). Notably, a refined 8-item version of the scale emerged, exhibiting enhanced reliability and psychometric robustness in a large-scale, multi-country study that included over 7,000 participants (Kaiser & Rice, 1974; Blachnio et al., 2021).

This research underlines the significance of understanding phubbing in our interconnected world and how this behavior impacts individuals' lives and relationships. It also highlights the continuous refinement and adaptation of the Phubbing Scale to suit diverse

cultural contexts and the international collaboration of researchers in this field (Lei & Wu, 2007; Leach et al., 2008). Furthermore, it showcases the need for such standardized measurement tools to delve deeper into the complexities of phubbing behaviors and develop strategies to mitigate its negative consequences (Nunnally & Bernstein, 1994; Ranie & Zickuhr, 2015)

Methodology

Population and Samples

This study selected participants from two secondary schools in Songkhla province through convenience sampling. The sample size was calculated as 30 times the number of items on the scale used in this research, resulting in a minimum of 240 participants. To ensure the representativeness of the sample, students from 7th to 12th grades attending secondary schools in Songkhla province were specifically targeted. Furthermore, during data collection, the educational contexts of the selected schools were carefully considered by the researchers.

A total of 280 participants were recruited from Songkhla province. Table 1 provides a summary of the demographic analysis. The sample consisted of 105 male respondents, making up 37.5% of the total, and 175 female respondents, accounting for 62.5% of the sample. The age range of the participants varied from 12 to 19 years with an average age of 15.13 (SD = 1.79). Regarding the educational status of the participants, 154 (55%) were enrolled in middle school, while the remaining 126 (45%) attended high school.

Table 1 Demographic analysis of the participants

Category	Frequency	Percent
Gender		
Male	105	37.5
Female	175	62.5
Age		
12	16	5.7

Table 1 (Cont.)

Category	Frequency	Percent
13	46	16.4
14	52	18.6
15	47	16.8
16	46	16.4
17	41	14.6
18	28	10.0
19	4	1.4
Educational status		
Middle school students	154	55
High school students	126	45

Measures

The Phubbing Scale, initially developed by Karadağ and colleagues in a 2015 Turkish study, has been a pivotal instrument for assessing the prevalence of phubbing behaviors (Karadağ et al., 2015; Blachino et al., 2021). The development of this scale was deeply rooted in both theory and empirical evidence. Data from focus group interviews, in addition to theoretical considerations, played a significant role in shaping the structure of the scale, grounding it in observed behaviors and experiences (Karadağ et al., 2015; Blachino et al., 2021).

The scale was designed with two dimensions, each containing five items, taking a comprehensive approach to capturing the nuances of phubbing behaviors (Karadağ et al., 2015; Blachino et al., 2021). The first sub-factor, termed 'communication disturbance,' includes items such as “People complain about me dealing with my mobile phone” and “I’m busy with my mobile phone when I’m with friends.” The second dimension, 'phone obsession,' encompasses items like “I feel incomplete without my mobile phone.” and “When I wake up in the morning, I first check the messages on my phone.” Responses are measured on a 5-point Likert scale ranging from 1 (strongly disagree/never) to 5 (strongly agree/always).

The original ten-item Phubbing Scale demonstrated robust psychometric properties, with high internal consistency, exemplified by a Cronbach's alpha (α) of .87 for the Communication Disturbance dimension and an α of .85 for the Phone Obsession dimension (Karadağ et al., 2015). These findings attest to the ability of the scale to measure phubbing

behaviors consistently and reliably.

However, the journey of the scale did not stop with its original version. Recent research led by Blachino et al. (2021) expanded its validation on a global scale. Using a diverse sample of 7,696 participants from 20 countries, representing various genders, the study rigorously assessed the Phubbing Scale (Blachino et al., 2021).

The results of this comprehensive international study were instrumental in refining the scale. An eight-item version of the scale, following a meticulous three-step measurement invariance test, emerged as the preferred model (Blachino et al., 2021). This shortened scale displayed superior model fit compared to the original ten-item version. The decision to remove two items from each dimension, specifically item 10 from the Communication Disturbance dimension and item 5 from the Phone Obsession dimension, was driven by the scale's performance characteristics. These items exhibited weak correlations with other scale items and contributed to suboptimal fit indices, justifying their removal (Blachino et al., 2021)

In essence, the Phubbing Scale's evolution from its origin in a Turkish study to its recent international validation underlines its adaptability and utility in capturing the complexities of phubbing behaviors across diverse cultural contexts. This refined measurement tool enhances our understanding of phubbing and ensures its relevance and applicability in a globalized world where digital communication transcends borders.

In summary, this study selected the eight-item English version of the Phubbing Scale for translation into Thai, chosen for its enhanced reliability and validity. This scale comprises two sub-factors: communication disturbance (e.g., “My eyes wandering on my phone when I’m together with others” and “I am always busy with my mobile phone when I’m with my friends.” and phone obsession (e.g., “My phone is always within my reach.” And “I do not think that I annoy my partner when I’m busy with my mobile phone.”), each containing four items. Responses are collected on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Translations Process

The eight-item Phubbing Scale underwent a meticulous translation process from English to Thai, following established guidelines (Beaton, Bombardier, Guillemin, & Ferraz, 2000) The translation process in this study encompassed four distinct stages to ensure linguistic and cultural equivalence.

Firstly, a proficient bilingual translator executed a forward translation of the eight-item Phubbing Scale into Thai. This translator possessed fluency in both English and Thai languages, having been exposed to both linguistic environments since birth. Additionally, their educational background was steeped in the study of social sciences, further enhancing their linguistic and contextual proficiency. Throughout the translation process, careful consideration was given to maintaining fidelity to the original English version while ensuring cultural appropriateness.

Secondly, a backward translation was conducted by an independent bilingual translator, rendering the Thai version back into English. Crucially, the translator was kept unaware of the original scale and any related information to prevent bias. This blind back-translation process aimed to assess the consistency and accuracy of the Thai version compared to the original English text.

Thirdly, a committee of bilingual experts, all possessing advanced education in social sciences, was convened to evaluate the original scale, the forward translation, and the back translation. This committee scrutinized the translations across four critical domains: semantic equivalence, idiomatic equivalence, experiential equivalence, and conceptual equivalence (Guillemin, Bombardier, & Beaton, 1993) These multifaceted assessments ensured that the translated version effectively captured the intended meanings and nuances of the original scale while remaining culturally and linguistically appropriate.

Lastly, a pilot test was conducted to validate the pre-final Thai version of the Phubbing Scale. A cohort of ten participants, comprising four high school students, three university students, and three adults, was selected to evaluate the pre-final version. Their feedback was instrumental in confirming the equivalence between the scale and the Thai version with a focus on maintaining stability within the Thai cultural context. Notably, all participants reported ease in reading and responding to each questionnaire item, highlighting the clarity of the conceptual framework. Consequently, the pre-final Thai version was adopted as the final iteration of the Thai Phubbing Scale.

The translation process meticulously preserved the linguistic precision and cultural appropriateness of the Phubbing Scale in its Thai version, making it a trustworthy tool for evaluating phubbing behaviors among Thai speakers. To align with local usage, the term "mobile phone" from the original version was substituted with the more commonly used

"smartphone" in the Thai context.

Statistical Analysis

In the subsequent phase of this study, the psychometric properties of the final version of the scale were meticulously assessed. A four-step analysis, served as the primary analytical tool, with a particular emphasis on internal consistency and construct validity. This comprehensive evaluation included sequential exploratory and confirmatory factor analyses, aligning with established guidelines and best practices.

These guidelines encompassed considerations such as sample characteristics, factorability, extraction methods, rotation methods, item retention or deletion, factor retention criteria, and model fit indices (Worthington & Whittaker, 2006). This rigorous methodology ensured the robustness and reliability of the scale for assessing phubbing behavior among adolescents in the Thai context.

To assess internal consistency, Cronbach's alpha coefficient was employed, with a threshold of .70 or higher considered satisfactory. This statistic gauges the extent to which items within the scale correlate with one another, providing a measure of reliability.

Construct validity, on the other hand, was evaluated through exploratory factor analysis (EFA), facilitated by Principal Axis Factoring (PAF) and Promax rotation. EFA seeks to uncover the underlying structure of the scale, identifying any distinct factors or dimensions that contribute to the measurement of phubbing behaviors.

The initial steps of this analysis involved conducting the Kaiser-Meyer-Olkin test of sampling adequacy (KMO), as proposed by Cerny and Kaiser (1977), and Bartlett's test of sphericity (Bartlett, 1950). KMO values greater than .50. Bartlett's test values less than .50 are indicative of the data's suitability for factor analysis.

Following this, the correlation matrix was analyzed, with a focus on identifying coefficients greater than .30; a threshold considered appropriate for proceeding with factor analysis.

To determine the number of factors to extract, several criteria were employed. Eigenvalues greater than 1.0, a scree plot, and cumulative percentages of variance extracted were all considered in this decision-making process. These criteria collectively guide the extraction of factors and contribute to the understanding of the scale's underlying structure.

In the assessment of model fit, a set of criteria was applied, including CMIN/DF, the comparative fit index (CFI), Tucker-Lewis index (TLI), the goodness of fit index (GFI), and the root mean square error of approximation (RMSEA). For CMIN/DF, a value below 3 indicates a good model fit (Kline, 2015). Additionally, values for CFI, TLI and GFI closer to 1 indicate a better fit, while RMSEA is considered satisfactory when below .08 (Lei & Wu, 2007; Leach et al., 2008; Kline, 2015).

These rigorous analyses ensure the robustness of the final Thai Phubbing Scale, substantiating its reliability and validity for the assessment of phubbing behaviors within the Thai-speaking population.

Result

Smartphone Use Patterns

Table 2 displays the patterns of smartphone use among the participants in the study. Approximately 36.4% of participants reported using their own smartphones for 3 to 5 years, with an additional 33.9% having used smartphones for approximately 6 to 8 years. Moreover, 11.1% indicated using smartphones for more than 8 years.

When examining the duration of smartphone usage on both weekdays and weekends, interesting patterns emerged. It was found that 75.4% of participants spent less than 8 hours a day on smartphones during weekdays, while 58.9% used their smartphones for more than 8 hours daily on weekends.

When including those who used smartphones for 5 to 7 hours a day on weekends, the combined percentage reached 88.5%. In other words, only 10.7% of the entire study population (n=280) reported using smartphones for less than 2 hours a day on weekends.

It is worth noting that there were minimal missing data points in the variables related to the duration of possessing smartphones and smartphone usage, with only 1 participant (0.4%) missing from the former and 2 participants (0.7%) missing from the latter.

Table 2 Smartphone use patterns among the participants

Category	Frequency	Percent
Duration of possessing own smartphones		
Less than 3 years	51	18.2
3~5 years	102	36.4
6~8 years	95	33.9
Over 8 years	31	11.1
Duration of using smartphones on weekdays in 1 day		
Less than 2 h	5	1.8
2~4 h	25	34.3
5~7 h	110	39.3
8~10 h	42	15.0
Over 10 h	26	9.3
Duration of using smartphones on weekends in 1 day		
Less than 2 h	5	1.8
2~4 h	25	8.9
5~7 h	83	29.6
8~10 h	90	32.1
Over 10 h	75	26.8

Note: Missing system in Duration of possessing own smartphones and Duration of using smartphones on weekdays in 1 day = 1(.4%) and on weekends = 2 (.7%).

Reliability Analysis

The reliability analysis, presented in Table 3, demonstrates the internal consistency and reliability of the Thai Phubbing Scale. For the total scale of the Thai Phubbing Scale, a Cronbach's alpha correlation coefficient of .80 was obtained, indicating a high level of internal consistency.

This suggests that the items within the scale are measuring the same underlying construct consistently. Furthermore, when examining the two dimensions within the scale, Communication disturbance and Phone obsession, internal consistency coefficients of .76 and .77, respectively, were obtained. These coefficients also indicate a strong level of internal consistency within each dimension.

The corrected item-total correlation coefficients, which ranged from .37 to .60, further support the internal reliability of the Thai Phubbing Scale. These coefficients assess how each item relates to the overall scale, and the values obtained indicate a reasonable degree of consistency in the participants' responses to the items. Additionally, Cronbach's alpha values, if any individual item were deleted, were all above .76. This suggests that the deletion of any single item would not significantly improve the internal consistency reliability of the scale.

Table 3 Reliability for the Thai Pubbing Scale including item-total statistics (n=280)

	Mean	Standard Deviation	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Item 1	2.80	.99	.48	.36	.78
Item 2	2.50	1.02	.56	.52	.79
Item 3	2.76	1.18	.37	.23	.80
Item 4	2.43	1.01	.57	.48	.77
Item 5	3.22	1.15	.46	.30	.78
Item 6	3.38	1.30	.54	.45	.77
Item 7	2.94	1.18	.52	.39	.77
Item 8	2.84	1.08	.60	.38	.76

Note: Over all alpha (8) = .80; Communication Disturbance alpha (4) = .76; Phone Obsession alpha (4) = .77.

Overall, the reliability analysis provides robust evidence for the internal consistency of the Thai version of Phubbing Scale, supporting its reliability and validity for measuring phubbing behaviors in Thai adolescents.

Exploratory Factor Analysis (EFA) of the Thai Phubbing Scale

Exploratory Factor Analysis (EFA) was performed on the Thai version of the Phubbing Scale to evaluate its internal structure, specifically to verify the two-factor structure suggested by Blachnio et al. (2021) as more reliable than a single-factor construct, in alignment with the recommendations from the original scale. The principal axis factoring (PAF) method with Promax rotation was employed for this purpose.

Before conducting the EFA, several prerequisites were checked to ensure the suitability of the data for factor analysis. All items in the scale exhibited significant correlations within

the range of 0.13 to 0.64, and the determinant score was .08, meeting the requirements for exploratory factor analysis.

Additionally, the Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) was found to be 0.794, surpassing the commonly recommended threshold of 0.6. Bartlett's Test of Sphericity was also significant (χ^2 (28) = 680.766, p < .001), further supporting the appropriateness of the data for factor analysis (Kaiser & Rice, 1974). The communalities of the 8 items were all above .3, except for item 3 (see Table 3). However, following Child's suggestion (2006), it was deemed unnecessary to eliminate this item as its value exceeded 0.2.

The EFA results revealed the extraction of two factors, each with eigenvalues greater than 1. This outcome confirmed that the Thai Phubbing Scale maintained the two-subscale structure consistent with the original version. The factor loadings for all items demonstrated stable psychometric values, with each exceeding 0.46 (see Table 4).

Table 4 Exploratory factor analysis: factor loading by Pattern Matrix[a]

Component	Factor		Communalities	
	1	2	Initial	Extraction
Communication disturbance				
2. I am always busy with my smartphone when I'm with my friends	.84		.52	.67
4. I'm busy with my smartphone when I'm with my family	.75		.48	.57
1. My eyes start wandering on my phone when I'm together with others	.61		.36	.38
3. People complain about me dealing with my smartphone.	.50		.23	.25
Phone obsession				
6. When I wake up in the morning, I first check the messages on my phone		.86	.45	.67
7. I feel incomplete without my smartphone		.69	.39	.48
5. My phone is always within my reach		.61	.30	.38
8. My smartphone use increases day by day		.46	.38	.43

Table 4 (Cont.)

Component	Factor		Communalities	
	1	2	Initial	Extraction
Eigenvalues	3.38	1.41		
% of Variance	42.24	17.6		
Cumulativse %	42.24	59.88		
Cronbach's Alpha (n)	.76 (4)	.77 (4)		
Overall items Cronbach's Alpha (n)		.80 (8)		

Note: Extraction Method = Principal Axis Factoring; Rotation Method = Promax with Kaiser Normalization; a: Rotation converged in 3 iterations.

These factor loadings exceeded the commonly recommended value of 0.35 for this sample size (n=280; Guadagnoli & Velicer, 1988; Field, 2013). The two-factor structure explained 59.9% of the total variance in the scale, suggesting that it effectively captures the underlying constructs of Communication disturbance and Phone obsession.

Confirmatory Factor Analysis of the Thai Phubbing Scale

A confirmatory factor analysis (CFA) was conducted using Structural Equation Modeling (SEM) on the entire dataset. Maximum likelihood estimation, along with the robust estimation method, was employed for the analysis. Figure 1 illustrates the results obtained from the CFA.

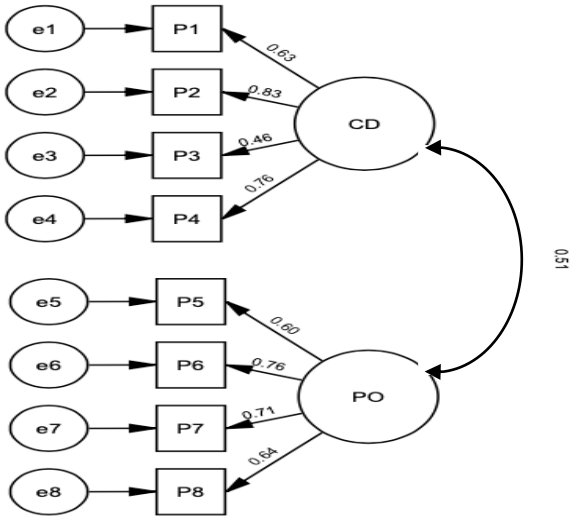

Figure 1 Confirmatory factor analysis of the Thai version of the Phubbing Scale

Note: CD = Communication Disturbance; PO = Phone Obsession; P = Item

The structural model of the Thai version of Phubbing Scale demonstrated a reasonable fit and was parsimonious based on several fit indices: CMIN/DF = 3.097, GFI = .950, RMSEA = .087, CFI = .940, NFI = .915, PNFI = .621, and TLI = .911.

The factor loadings of the items on the Thai version of the Phubbing Scale were found to be high (see Figure 1). Specifically, all factor loadings in the model exceeded .46, indicating strong relationships between the latent constructs and their respective observed items. This supports the robustness and validity of the Thai version of the Phubbing Scale.

Discussion

The present study focused on assessing the psychometric properties of the Thai version of the Phubbing Scale, an 8-item measurement tool that has demonstrated scalar invariance across 18 countries and genders (Blachnio et al., 2021). It is important to note that Blachnio et al. (2021) had previously removed two items from the original 10-item scale by Karadağ et al. (2015) due to their poor correlation with the remaining items.

This research aimed to validate the Thai version of the Phubbing Scale to screen for phubbing behavior among Thai individuals, with a sample of 280 participants. This endeavor is particularly relevant given the clear and rapid increase in smartphone usage among the Thai population.

The translation process from the English version to Thai was meticulously conducted, considering cultural appropriateness in the Thai context. For instance, the term "mobile phone" was replaced with "smartphone" to better reflect its popularity and usage (Beaton et al., 2000).

The findings of this study affirm the Thai version of the Phubbing Scale's robust validation and psychometric properties. Notably, the exploratory factor analysis (EFA) revealed a consistent two-factor structure in the Thai version, with four items dedicated to each dimension: "Communication Disturbance" and "Phone Obsession" (Karadağ et al., 2015; Blachnio et al., 2021). Comparing these results with previous validation studies of the Phubbing Scale, this study reports similar or even improved values, including significant scores in the factor loadings of the items (Blachnio et al., 2021).

Parallel findings were observed in the application of the Spanish version of the Phubbing Scale, which showed similar internal validity for its sub-factors: $\alpha_{\text{Communication disturbance}}$ = 0.77 and $\alpha_{\text{phone obsession}}$ = 0.74 (Blanca & Bendayan, 2018). Likewise, the Portuguese version of the scale exhibited psychometric properties akin to the Thai version, presenting a two-factor structure with factor loadings for communication disturbance ranging from 0.73 to 0.86 and for phone obsession from 0.58 to 0.77 (García-Castro, Abreu, Rando, & Blanca, 2022), further reinforcing the Thai version's validation.

However, several limitations warrant consideration. Firstly, the sample size is limited, encompassing only secondary students from two schools in a single province of Thailand. Secondly, this research adopts a cross-sectional design and relies on self-reported data collection, which may introduce biases in the findings. Future studies with larger and more diverse samples, as well as longitudinal designs, could provide further insights into the dynamics of phubbing behavior among the Thai population. Lastly, the use of the same sample for both EFA and CFA in this study may lead to results that are overly fitted to the data, potentially biasing the findings. To validate and ensure the scale's reliability, it is recommended that future studies conduct EFA and CFA with different samples.

Recommendations

In this study, the psychometric properties of the Thai version of the Phubbing Scale were thoroughly assessed, a crucial instrument for appraising smartphone-related conduct. The investigation affirmed its robust psychometric characteristics and cultural relevance within the Thai milieu.

Results indicate that the Thai version of the Phubbing Scale aligns with the original and often outperforms it. The two-factor structure, encompassing "Communication Disturbance" and "Phone Obsession," mirrors prior studies and frequently exhibits superior performance (Blachnio et al., 2021). This underscores its effectiveness in identifying phubbing behavior among Thai adolescent individuals.

Nevertheless, there were acknowledge certain limitations. The study's sample size was confined to secondary students in one Thai province. The adoption of a cross-sectional design and reliance on self-reported data could introduce biases. To acquire a more comprehensive

understanding of phubbing behavior in Thailand, future research should consider larger and more diverse samples, along with longitudinal designs.

In an era characterized by the escalating ubiquity of smartphones, the Thai version of the Phubbing Scale stands as a valuable tool to discern the intricate dimensions of this phenomenon. As smartphone usage continues to evolve, this scale equips researchers and practitioners with a potent instrument to gauge its impact on interpersonal interactions and psychological well-being among Thai individuals.

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