Development and Testing of a Culturally-Adapted Measure of the Drinker Prototype for Thai Adolescents

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THESIS
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This dissertation is dedicated to my family who are supporting me in this endeavor. Additional dedication goes to the Thai adolescents who provided me the inspiration to develop and undertake this study.

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LIST OF ABBREVIATIONS

alpha	Coefficient alpha
GSHS	Global School-Based Student Health Survey
IRB	Institutional Review Board
KMO	Kaiser-Meyer-Olkin
N	Number
NIAAA	National Institute on Alcohol Abuse and Alcoholism
PCA	Principal Component Analysis
REDCap	Research Electronic Data Capture system
rho	Spearman Rho Correlations
SD	Standard Deviation

SUMMARY

Under-age alcohol consumption is a serious problem throughout Thailand, but most research has focused on prevalence with little focus on factors that contribute to adolescent alcohol use. One factor that has been shown to predict early alcohol use in adolescents in other countries is favorability of and similarity to the drinker prototype – a vivid image of adolescents who drink alcohol. The attributes that characterize this image are referred to as the drinker prototype. The attributes that comprise the drinker prototype differ in different cultures, and are unknown in Thailand. This dissertation is focused on culturally adapting an existing drinker prototype measure and psychometrically testing it in Thai adolescents. The first paper describes a study to identify the attributes of the adolescent drinker prototype in Thailand. Focus groups were conducted with Thai adolescents (*N*=43) the 7th, 8th, and 9th grades (age 13-15) at a public middle school in Ubon Ratchathani Province in the northeastern region of Thailand. The attributes that characterize the drinker prototype were *sociable, fighter, talkative cool, mature, and funny*. The second paper describes a study designed to psychometrically test the adapted measure. First, the newly identified attributes were incorporated into the measure which was then translated using the committee approach. Second, cognitive interviews were conducted with a different group of Thai adolescents (*N*=20) to verify that the questions were clear and understandable. . Third, psychometric testing of the culturally adapted measure was conducted in a large sample of Thai adolescents (*N*=306). Participants first rated each of the six drinker prototype attributes for favorability on a 1-5 scale. Then they rated each of the six drinker prototype attributes for similarity on a 1-5 scale. Finally, they reported lifetime alcohol use, past year alcohol use, number of drinking days in past year, and maximum number of drinks/occasion.

SUMMARY (continued)

The mean favorability and similarity ratings were near the midpoint of the scale (3.2 and 3.0 respectively). Fifty-eight percent of the adolescents reported ever drinking; 33% reported drinking in the last year. Average number of drinking days in the past year was 7.4 and the maximum quantity was 4.1 drinks per occasion on average. Cronbach's alpha was .56 for the favorability and .70 for similarity. Principal components analysis revealed that favorability had two factors (fighter loaded on a separate factor), but similarity had one factor. For girls, favorability of the drinker prototype was modestly positively associated with alcohol use variables (*rho* ranged from .15-.19). Similarity to the drinker prototype was more strongly associated with alcohol use (*rho* ranged from .38-.51); the strongest correlation was with ever drinking. But for boys, favorability of the drinker prototype was not associated with alcohol use variables (Rho ranged from 0-.03) and perceived similarity to the drinker prototype was associated modestly with ever drinking (*rho* = .21) only. Findings suggest that our culturally adapted adolescent drinker prototype measure is valid and reliable for Thai adolescent girls, but not for Thai adolescent boys. Because this is the first study to examine gender differences in relationships between prototype favorability/similarity and alcohol use variables, these findings should be replicated in other regions of Thailand (and around the world).

I. ATTRIBUTES OF THE DRINKER PROTOTYPE AMONG THAI ADOLESCENTS

A. Introduction

As in other countries, adolescent alcohol use is a significant problem in Thailand. Across different studies, the lifetime prevalence of adolescent alcohol consumption (aged between 13-15) was 24% (Assanangkornchai, Mukthong, & Intanont, 2009; Balogun, Koyanagi, Stickley, Gilmour, & Shibuya, 2014). Data from the Global School-Based Student Health Survey (GSHS) shows that among Thai adolescents age 13-15, 18% reported consuming alcohol in the past 30 days (Balogun et al., 2014). The adverse consequences of alcohol consumption among Thai adolescents include intoxication (24%), accidents (23%), violent behavior (17-22%), suicidal thoughts (6%), risky sexual behavior (7%), and academic problems (33%) (Assanangkornchai et al., 2009; Balogun et al., 2014).

One modifiable factor that contributes to alcohol use among adolescents is favorability of and perceived similarity to the attributes that characterize the prototypical adolescent drinker. A prototype refers to the perceived image of a typical person who engages in a behavior (Chassin, Tetzloff, & Hershey, 1985; Gerrard et al., 2002; Gibbons & Gerrard, 1995). Children and adolescents have clear images of the type of person their age who engages in a specific type of risk behavior (Gerrard, Gibbons, Houlihan, Stock, & Pomery, 2008). Studies have shown that having a favorable image of a sexually active teen predicts casual or unprotected sex (Blanton et al., 2001; Houlihan et al., 2008), having a favorable image of adolescents who smoke predicts smoking (Piko, Bak, & Gibbons, 2007; Spijkerman, van den Eijnden, Vitale, & Engels, 2004), and having a favorable image of adolescents who drink alcohol predicts drinking (de Leeuw, Blom, & Engels, 2014; Litt, Stock, & Gibbons, 2015; Teunissen et al., 2014). In addition to favorability, studies have also shown that perceived similarity to the prototype predicts risk

behavior. For example, studies have shown that perceiving that one is similar to the image of typical teen smoker is associated with smoking behavior (Aloise-Young & Hennigan, 1996) and perceiving that one is similar to the image of a typical adolescent drinker predicts binge drinking (Norman, Armitage, & Quigley, 2007; Teunissen et al., 2014).

According to the Prototype/Willingness Model, individuals attempt to emulate the perceived characteristics or attributes of the typical person [the same age] who engages in a specific risk behavior (Blanton, Gibbons, Gerrard, Conger, & Smith, 1997; Gibbons & Gerrard, 1995). The attributes of the prototype may differ in their relevance depending on the type of behavior, culture, and age. For example, among Dutch adolescents, Spijkerman et al. (2004) found 19 attributes that characterized the smoker prototype and 22 attributes that characterized the drinker prototype. Among U.S. adolescents, Gibbons and Gerrard (1995) found 12 attributes (*smart, confused, popular, immature, cool , self-confident, independent, careless, unattractive, dull, considerate, and and self-centered*) that characterized the college drinker prototype, and six attributes (*popular*, *selfish*, *smart*, *cool*, *unattractive,* and *dull*) that characterized the pre-adolescent drinker prototype among African American adolescents aged 10-12 (Gerrard et al., 2006). Among Native American Indian adolescents 10-12 years of age, Armenta and colleagues found that nine attributes (*popular, smart, cool, tough, good-looking, mature, dull or boring, independent,* and *self-confident)* characterized the adolescent drinker prototype (Armenta, Hautala, & Whitbeck, 2015).

The attributes of a prototypical adolescent drinker in Thailand are unknown. The purpose of this study is to identify the key attributes that characterize an adolescent drinker in Thailand. Once identified, these attributes can be incorporated into an existing drinker prototype measure (Gerrard et al., 2006) that can be culturally adapted and tested among Thai adolescents. Given

that perceived favorability of and similarity to the drinker prototype are modifiable, this work holds great potential for new intervention targets to prevent adolescent alcohol use in Thailand.

B. Methods

Determining the attributes that characterize the adolescent drinker prototype involves asking adolescents to reflect on a typical adolescent who drinks alcohol, list the attributes that characterize adolescents who drink alcohol, and then rate the attributes in terms of relevance (Armenta et al., 2015; Gibbons & Gerrard, 1995). In this study, we used focus groups to identify the key attributes of the Thai adolescent drinker prototype.

1. Setting and Participants

This study was conducted at a public middle school in Ubon Ratchathani Province in the northeastern region of Thailand (Secondary Educational Service Area Office #29, 2014). Thai adolescents aged 13-15 years were recruited from the school. Inclusion criteria included: (1) 13 to 15 year-old Thai adolescents attending a specific public middle school in Ubon Ratchathani Province in the northeastern region of Thailand who had the (2) ability to read, write, and speak in Thai in order to respond to the questions in the focus groups, which were in Thai.

2. Procedures

After receiving permission from a public middle school to collect data, the researcher met the adolescents' parents at a school-parent meeting to inform them of the study and tell them that in order for their child to participate in the study, they needed to provide parental permission. Adolescents who had received parental permission were invited to participate. Those interested were informed of the study's purpose, potential risks/ benefits, and their rights during the study. They were told that it was their decision to participate and that they could choose not to participate even if their parent had given permission. They were also told

that if they chose not to participate, there would be no consequences for them. Fifty-seven parents gave permission and three parents did not give permission.

Eighty-one percent (*N*=43) of the adolescents who received parental permission (*N*=53) participated (10 adolescents who were missing). Six age- and gender-matched focus groups were conducted. In a private room at the school during their self-study hour, the researcher first asked the children in each focus group to independently list characteristics of Thai adolescents who drink alcohol on a card (free list). The researcher collected the free listings and over the next 1-2 weeks, the researcher conducted the six focus groups designed to identify attributes of the typical Thai adolescent who drinks alcohol. Each focus group lasted 30-45 minutes. Following the focus groups, all participants (*N*=43) validated the attributes derived in the focus groups. After completing the focus groups, the investigator gave each adolescent US$3.20 (100 Baht) to provide assistance with their lunch or school supplies.

3. <u>Focus Groups</u>

Before conducting the focus groups, adolescents provided a fictitious name without recording their class. Participants were told to "*think for a minute about the type of person [girl/boy] your age [13, 14, or 15] who drinks (alcohol)*" and to write a list of all of the adjectives they could list that described this type of adolescent. Then, the researcher conducted the focus groups using semi-structured interviews with participants. Six focus groups (ages 13, 14, and 15 separately) were conducted in a private room during self-study time. The focus groups were gender and age-matched to avoid gender and age-based dominance. The focus groups were conducted by the researcher, who had been trained in and had experience in conducting focus groups. Following a semi-structured interview format, the adolescents in each focus group were asked to describe the characteristics of someone their age who drinks alcohol.

Each focus group was audio-taped. All attributes were written on flip charts and the researcher took field notes during the focus groups. Then, adolescents were asked to arrive at a group consensus about the key defining attributes of an adolescent who drinks alcohol. Before completing each focus group, three of the adolescents from each focus group volunteered (total of 18 volunteers) to help confirm the agreement of the information through member checking within 2-4 weeks after the focus group sessions.

The semi-structured interview was developed based on a review of the existing literature on the drinker prototype in English. Then, the researcher translated the guidelines for the interviews about the attributes of drinker prototypes from English to Thai. Next, a Thai nursing instructor who had graduated with a PhD in nursing from a program in the United States confirmed the accuracy of the Thai translation. Lastly, a Thai teacher who teaches Thai language courses for 13-to-15 year adolescents confirmed the Thai language attributes as appropriate for the target population.

The audio-taped record was transcribed into the central-Thai language dialect and English. The researcher re-listened to the audio-taped records and compared them to the central-Thai language dialect transcripts and then re-read the central-Thai language dialect transcripts and compared them to English translations to check accuracy. Codes were applied to the attributes. To confirm the researcher's coding comparisons, Drs. Colleen Corte (an expert in alcohol-related cognitions) & Linda L. McCreary (an expert in instrument development and focus groups) provided feedback on the codes derived from the focus groups. Then, a Thai nursing instructor who is experienced with focus groups, transcription, and coding and the researcher independently conducted coding to confirm the consistency.

4. Data Analysis

Content analysis was used to identify the most relevant drinker prototype attributes identified in the focus groups. As part of the process, the researcher examined the attributes that had been identified and chose the most frequently identified attributes. After checking the data, *frequencies and percentages* were analyzed to describe the characteristics of the participants and the attributes of the drinker prototypes. *Percent agreement* that can be expected by chance and *Scott's pi* were used for determining inter-coder reliability (Krippendorff, 2004). The reason to apply chance percent agreement was because the adjectives describing the attributes may occur multiple times in the sentences within the transcripts being coded with coders potentially agreeing about the attribute in one instance but not in another where it appears within the transcript. Neuendorf (2002) suggests that *Scott's pi* and *Kappa's alpha* would be appropriate to use for two coders with nominal data.

5. Protection of Human Subjects

The study was approved by The Institutional Review Board (IRB) of the University of Illinois at Chicago and the Boromarajonani College of Nursing, Sappasithiprasong, Ubon Ratchathani, Thailand (Appendix A). To protect the privacy of participants, no identifying information was collected. Flip charts and field notes were stored in a file cabinet inside the research office at Boromarajonani College of Nursing, Sappasithiprasong, Ubon Ratchathani, Thailand. All of audio-taped and transcripts were stored on a password protected laptop computer and then transferred into RedCap at researcher's office, College of Nursing, the University of Illinois at Chicago.

C. Results

1. Description of the Study Sample

Forty-three Thai adolescents in the 7th to 9th grades participated in the study (54% were girls). The average age was 13.93 (*SD*=.83), ranging from 13-15 years old. Most of them (65%) lived in an urban area.

2. Drinker Prototype Attributes Listed in Individual Sessions

In total, 28 attributes were listed by individual participants (see Table I). Across all youths, the most frequently listed attributes were "fighter," "sociable," "the life of a party," and "funny" respectively.

3. Focus Group Discussions

The new adjectives generated during the focus groups were compared with the individually prepared lists and the lists produced in the focus group. After discussion of the new adjectives in each focus group, the final adjective lists were comprised of the most frequently mentioned adjectives. Moreover, 2-4 weeks after the focus groups were conducted, representatives from each focus group (total 16, two were missing because of illness) confirmed that the adjectives came from their groups. Lastly, the focus groups provided more detailed information about the six adjectives that were the most frequently voted as characterizing adolescent drinkers (see Table II).

a. Sociable

The first attribute was sociable. Participants emphasized the "sociable" image of adolescents who drink alcohol, which often involved commemorating special events like a birthday, graduation, and "turning point," as a few participants stated:

"*Like when we want to celebrate something with friends, we have alcohol …. as a way to socialize."* (Peggy-M14 in group3)

"*But sometimes, it is a way to 'party'…. Like on a friend's birthday, on the final day of class, or after the exam day, drinking can be a way to party. Just like today, some will go out for a party."* (Nong Thoek-F15 in group 6)

b. Fighter

The second attribute was fighter. Participants talked about the image of adolescents who drink alcohol as characterized by fighting or aggressive behavior.

"When having …. alcohol, many I know like to pick a fight…." (Fon-M14 in group 3)

"….I even saw those who were in grade 8 or higher …. guys put up a fight." (Singhaa-M13 in group 1)

"The way they speak impolitely; act and speak disrespectfully to adult; and behave rowdily…..Yelling at this one and that one. Sometimes they fight with passersby, drive furiously, behave crazily, not listening to others' warnings, just not like sensible people at all. …. Yes, and no doubt, they are 13-15 years old." (Mee-F15 in group 6)

c. Talkative

The third attribute was talkative. Participants explained that the "talkative" image of adolescents who drink alcohol is a way of "bonding" through sharing or improving "social cohesion." As some participants said:

"*When our friends ….. are drinking whiskey, they always tell everything they have hidden …. just like that.*" (Toto-M13 in group 1)

"Getting drunk,….keep on talking a lot more and more." (Tor-M13 in group 3)

"Like talking nonsense…. Saying the same thing but not answering the questions." (Ploy Shipping-F13 in group 2)

d. Cool

The fourth attribute was cool. Participants emphasized that the image of adolescents who drink alcohol reflects enhanced social status or prestige and that they project "coolness."

"In some sense, it is cool….. Like …. they sit in a group and drink together. That makes them look cool." (Idea -F14 in group 3)

Of concern was that some participants talked about "competitive drinking" or enhancing their social standing through excessive drinking. As one participant said:

"…. it might look cool…. When they drink whiskey and compete over who can hold their liquor best…. meaning who is the last to get drunk. It looks cool." (Nadet-M15 in group 5)

e. Mature

The fifth attribute was mature. The adolescents explained that adolescents who drink alcohol are viewed as "mature" because they are "role playing" adult behaviors.

"They act like an adult. Like, drinking like adults, imitating the way grownups drink, and speaking loudly like adults do when they drink." (Bones-M15 in group 5)

This image also involved expression of masculinity. As one participant stated:

"....It seems like when you are drinking you can express your manhood." (Peng-M13 in group 1)

f. Funny

The sixth attribute was funny. Participants indicated that adolescents who drink alcohol are funny, and that drinking made social events more enjoyable, pleasurable, or light-hearted, especially when music or dancing occurred.

"....when they drink, it looks very enjoyable, just for the sake of their fun..... That's because they also dance with the music in a good mood." (Stitch-F14 in group 3)

Alcohol was considered a "social lubricant." One participant said: *"...Most people who drink usually laugh and enjoy their talk."* (Moo Noi-F15 in group 6)

4. Inter-Coder Reliability

Overall, the percent agreement between the researcher and the nursing instructor for the coded transcriptions was 88%, indicating the coding from the two coders was acceptable (Frey, Botan, & Kreps, 2000) (Table III). Also, *Scott's pi* and *Kappa's alpha* were .85 and .96 respectively which are acceptable (Neuendorf, 2002).

D. Discussions

In this study, through free listing followed by focus groups and then member checking, we found that that six attributes characterized the adolescent drinker prototype in Thailand -- *sociable*, *fighter*, *talkative*, *cool*, *mature*, and *funny*. In general, these attributes are consistent with prior literature on the attributes of a drinker prototype in North American and European youths. Our data supports the idea that children and adolescents possess a clear image of someone their age who engages in drinking behavior (Gerrard et al., 2008). These attributes will be incorporated into an existing drinker prototype measure that can be culturally adapted and psychometrically tested. Three of the attributes – *sociable*, *funny* and *talkative* -- are traits on the extraversion dimension of personality. Many studies have shown that high extraversion is associated with alcohol use in adolescents (Norman et al., 2007; Spijkerman, Van den Eijnden, Overbeek, & Engels, 2007). Investigators have found that being sociable is a characteristic of British youth aged 11-17 who drink (Davies, Martin, & Foxcroft, 2013), Dutch adolescents age 12-16 who drink (Spijkerman et al., 2007), and Dutch adolescents and young adults aged 18-25 who drink (van Lettow, Vermunt, de Vries, Burdorf, & van Empelen, 2013). This suggests that 'sociable' is a rather ubiquitous characteristic that defines drinkers from adolescence into adulthood. Given that membership in peer groups is very important to youth (Brown, 1990), being sociable may be a mechanism for inclusion in social groups. Another extraversion trait – funny – was also identified as characteristic of Dutch drinkers aged 18-25 years of age (van Lettow et al., 2013). Though being talkative was not identified as a defining attribute of adolescent drinkers in other studies of adolescents, an exaggerated version (being loud) has been identified as a key defining attribute of adult drinkers (Norman et al., 2007; van Lettow et al., 2013). In our study, Thai drinkers were viewed as talking more than usual and even divulging

secrets. Given that in Thai culture, people tend to express their thoughts or feelings less freely (Von Glinow, Shapiro, & Brett, 2004), this characteristic may stand out as unique.

Thai adolescents' views of adolescent drinkers as "cool" are consistent with several previous studies of adolescents of various ages in many parts of the world. Being 'cool' has been identified as a key defining attribute of drinkers in a variety of samples including African American adolescents aged 10-12 (Gerrard et al., 2006), Native American Indian adolescents aged 10-12 years (Armenta et al., 2015), U.S. adolescents aged 10-12 years (Stock et al., 2013), and 10-14 years (Andrews & Peterson, 2006; Dal Cin et al., 2009; Gibbons et al., 2010), Dutch adolescents aged 12-16 (Spijkerman et al., 2004), British adolescents aged 11-17 (Davies et al., 2013); and European adolescents aged 14-19 (Kalebić Maglica, 2011). Lapyai (2008) further suggested that Thai adolescents may try alcohol because it gives the image of high status in society.

In our study, Thai adolescents also identified 'mature' as a key defining attribute of adolescent drinkers. This characteristic was also identified by Litt et al. (2015) in a study of U.S. adolescents aged 13-15 and Native American adolescents aged 10-12 (Armenta et al., 2015). It is likely that adolescents consider drinking alcohol to be part of the adult role.

The last attribute – 'fighter' – was similar to attributes identified in other studies and is noteworthy because it is a more negative characteristic than the others. In U.S. adolescents (average age 15.6), Chassin et al. (1985) found "fighting" was one of images that the adolescents had of adolescent alcohol drinkers. Spijkerman et al. (2007) found "*looking tough"* to be part of the prototypical image of Dutch adolescent drinkers aged 12-16. Armenta et al. (2015) also found that being "tough" was part of the prototypical image of Native American Indian adolescent drinkers aged 10-12. In older Dutch adolescents and young adults aged 18-25, van

Lettow et al. (2013) found one of the attributes that characterize the drinker prototype was "volatile."

This is the first study to identify the attributes of the adolescent drinker prototype in Thailand. We have confidence that the six attributes that characterize the Thai adolescent drinker that were identified in this study are accurate given our methodology and our adequate inter-coder reliability. The full utility of these attributes will be determined when we use them to modify an existing drinker prototype measure.

E. Limitations

The findings of our study have to be considered in light of limitations. Our sample of Thai adolescents was drawn from a single public middle school in the northeast region of Thailand. Therefore, the results may not generalize to Thai teens from other types of schools or other regions of Thailand. In addition, the drinker prototype attributes may differ for older adolescents or children. Although focus groups are an appropriate method to explore a specific topic (Morgan, 1996), some adolescents may have been too uncomfortable to openly express their ideas, especially about a sensitive topic, i.e., adolescent alcohol use. Further studies should replicate these findings in other age groups and other regions of Thailand.

F. Conclusions

In this study, we determined that there are six attributes of the Thai adolescent drinker prototype: *sociable, fighter, talkative, mature, cool* and *funny*. These attributes will be used to modify an existing drinker prototype measure (Gerrard et al., 2006). We will determine cultural appropriateness and reliability and validity of the modified measure in another study. This work holds promise given that prototypes are modifiable and may be a viable intervention target.

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TABLE I

ATTRIBUTES GENERATED IN LISTS

Adjectives	Frequency
1. Fighter	20
2. Sociable	15
3. The life of a party	10
4. Funny	10
5. Cool	8
6. Talkative	7
7. Party	7
8. Social problems	6
9. Mature	6
10. Like adults	6
11. Accidental	5
12. Trouble maker	5
13. Clumsy	5
14. Straightforward	5
15. Enjoyable	5
16. Telling the truth	4
17. Scary	4
18. Cute	4
19. Nice-looking	4
20. Status driven	4
21. Need for attention	3
22. Uncivilized	3
23. Immoral	2
24. Coercion	2
25. Obligatory	2
26. Annoying	2
27. Crazy	2
28. Precocious	1

TABLE II

NUMBER OF VOTES FOR EACH ATTRIBUTES BY FOCUS GROUP

Attributes	Group 1 (6 boys)	Group 2 (10 girls)	Group 3 (8 boys)	Group 4 (6 girls)	Group 5 (6 boys)	Group 6 (7 girls)
Sociable	4	-	6	6	4	5
Fighter	2	No vote	5	-	6	2
Talkative	1	7	5	-	-	4
Cool	5	No Vote	-	6	6	-
Mature	-	-	-	6	1	-
Funny	-	7	-	6	-	5

Note: "No vote" means the attribute was mentioned in the group, but nobody voted for it. "-" means that attribute was not mentioned in the group.

TABLE III

PERCENT AGREEMENT ON ATTRIBUTES BY CODERS

Attributes	% Agreement
Sociable	100%
Fighter	100%
Talkative	75%
Cool	75%
Mature	100%
Funny	80%
Mean	88%

II. CULTURAL ADAPTATION AND PSYCHOMETRIC TESTING OF A DRINKER PROTOTYPE MEASURE AMONG THAI ADOLESCENTS

A. Introduction

Underage alcohol consumption is a significant problem in Thailand (Assanangkornchai, Mukthong, & Intanont, 2009; Balogun, Koyanagi, Stickley, Gilmour, & Shibuya, 2014). Though research has focused on the prevalence and consequences of alcohol use among adolescents in Thailand (Assanangkornchai et al., 2009; Balogun et al., 2014), little research has focused on identifying modifiable determinants of adolescent alcohol use in Thailand. This study is focused on a known modifiable determinant of adolescent alcohol use in the west – holding a favorable image of adolescents who drink alcohol – which is referred to as the 'drinker prototype' (Gerrard et al., 2006; Gerrard, Gibbons, Houlihan, Stock, & Pomery, 2008; Gibbons & Gerrard, 1997). More specifically, we report on the cultural adaptation and psychometric testing of a measure of the adolescent drinker prototype for use in Thai adolescents.

1. Prototypes

Prototypes are the perceived images and traits that characterize the typical person of the same age who engages in a specific risk behavior (Gerrard et al., 2002; Gibbons & Gerrard, 1997). In the U.S., the prototypical traits of an adolescent drinker are "cool," "smart," "confused," "popular," "immature," "self-confident," "independent," "careless," "unattractive," "dull," "considerate, " and "self-centered" (Gerrard et al., 2002). Studies have shown that *favorability* of the drinker prototype is associated with *ever drinking* alcohol (Litt, Stock, & Gibbons, 2015); and with an index of alcohol use (ever drank and frequency of drinking) (Gerrard et al., 2006). Studies have also shown that perceived *similarity* to the drinker prototype

is associated with *level* and *frequency of alcohol use* (Gerrard et al., 2006; Gerrard et al., 2002; Norman, Armitage, & Quigley, 2007; Teunissen et al., 2014).

2. Measurement of the Drinker Prototype

The drinker prototype measure (Gerrard et al., 2006) consists of two types of ratings of the drinker prototype traits (Gerrard et al., 2006). First, the adolescent is asked to think about the typical adolescent who drinks alcohol. He/she is then asked to rate each of the traits in terms of how much it describes the typical adolescent who drinks on a 5 point Likert scale. Because the traits are generally positive, the rating is considered a favorability rating. Then, he/she is asked to rate each of the traits in terms of how similar they are to these traits. This rating is a similarity rating. Both favorability and similarity ratings have been shown to be reliable (Gerrard et al., 2006; van Lettow, de Vries, Burdorf, Norman, & van Empelen, 2013) and valid (Gibbons, Gerrard, Cleveland, Wills, & Brody, 2004; Spijkerman, Van den Eijnden, Overbeek, & Engels, 2007), but the strength of the relationship with alcohol variables differs by age group and culture. For example, in 281 African American adolescents aged 10-12, (Gerrard et al., 2006) found the Cronbach's alpha for the favorability rating was .63, but in a larger sample (n=6522) of slightly older adolescents (10-14) in the U.S., Gibbons et al. (2010) reported a Cronbach's alpha of .83. Factor analysis of favorability of the drinker prototype revealed a single factor in 341 European adolescents aged 14-19 (Kalebić Maglica, 2011), but three factors were found in several other studies: 746 African American adolescents aged 10-12 (Gibbons et al., 2004), 463 U.S. adolescents (mean age 14.8) (Blanton, Gibbons, Gerrard, Conger, & Smith, 1997), and 1,956 Dutch adolescents age 12-16 (Spijkerman et al., 2007). The Cronbach's alpha for similarity to the binge drinker prototype has ranged from .74 in 202 British undergraduate adolescents to .82 in 226 British undergraduate adolescents (Rivis & Sheeran, 2013). A

systematic review revealed that no previous studies have reported factor analysis for similarity (van Lettow, de Vries, Burdorf, & van Empelen, 2014).

3. Cultural Adaptation of the Traits

The traits that characterize the drinker prototype vary for different cultures. For example, the drinker prototype consists of 12 attributes (*smart, confused, popular, immature, cool, self-confident, independent, careless, unattractive, dull , considerate, and and self-cented*) in U.S. college adolescents (mean age 18) (Gibbons & Gerrard, 1995), six attributes (*popular*, *selfish*, *smart*, *cool*, *unattractive*, and *dull*) U.S. pre-adolescents (Gerrard et al., 2006), and nine attributes (*popular, smart, cool, tough, good-looking, mature, dull or boring, independent,* and *self-confident)* in Native American Indian adolescents 10-12 years of age (Armenta, Hautala, & Whitbeck, 2015). Because the traits of the prototypical adolescent drinker in Thailand are unknown, we conducted a previous study to identify these traits. Using focus groups with Thai adolescents aged 13-15; we identified six traits that characterize the typical Thai adolescent who drinks alcohol– *sociable, fighter, talkative, cool, mature,* and *funny*. The goal of the present study is to incorporate these traits into the prototype measure and culturally adapt it for use with Thai adolescents.

B. Design, Methods and Procedures

This study was conducted in three parts. First, the committee translation method was used to translate the drinker prototype measure into Thai. This approach has been used successfully by other researchers who translated instruments from English to Japanese (Furukawa, Driessnack, & Colclough, 2014), English to Spanish (Martinez, Marin, & Schoua-Glusberg, 2006), and English to Thai (Youngcharoen & Vincent, 2016). Second, cognitive interviews were used to evaluate the content validity and understandability of the measure, including favorability and similarity

ratings. Lastly, a quantitative study was conducted to evaluate the reliability and construct validity of the culturally-adapted drinker prototype measure.

1. Part 1 (Translation)

a. Subjects

Three translators participated in the translation committee. One was a Thai PhD student in the United States. Fore over 15 years his work in Thailand was related to psychological nursing and he is experienced in English to Thai translation. The second translator was a nursing faculty member who has a master's degree in nursing from Thailand and who has worked in pediatric nursing in Thailand for more than 20 years. The third translator was a PhD-prepared nursing faculty member who has worked in community nursing in Thailand for more than 20 years. She works with Thai adolescent alcohol consumption. As a PhD student who has been in the United States for five years, I served as moderator. My work in Thailand has been related to pediatric nursing for more than 10 years and I am experienced in English to Thai translation. All translators are native Thais and use English in their work and their research.

b. Measurements

1) Demographic Data collected included age (year), sex (male and female), and grade (the seventh to ninth grade).

2) **Drinker Prototype Measure**

Six drinker prototype attributes (sociable, fighter, talkative, cool, mature, and funny) derived in an earlier study were rated for **favorability** and perceived **similarity** on 5-point Likert scales. For **favorability**, the stem was "A number of young people drink alcohol. I am interested in knowing about your image of them. Take a moment and think about the type of kid your age who drinks alcohol. You do not have to think of anyone in

particular, just your image of kids your age who drink." How [sociable, cool, mature, etc.] is he or she? For **similarity**, the stem was "Now I would like you think about the **kind of person you are**." How [sociable, cool, mature, etc.] are you?

Scale scores reflect the mean across the six items in the subscale (possible range = 1.0 -5.0). Higher scores indicate a more favorable perception of the drinker prototype / higher degree of similarity to the drinker prototype (Gerrard et al., 2006).

3) Alcohol use

a) Lifetime Alcohol Use was measured with a single question: "*Have you ever had a drink of beer, wine, or liquor (not just a sip or a taste of someone else's drink) in your life*?" The responses consist of "yes" (1) and "no" (0) (Donovan & Molina, 2011).

b) Past Year Alcohol Use was coded as yes if the participant drank on at least one day in the past year based on the frequency question (below) and was coded no if the participant reported no drinking in the past year.

c) Frequency of Use was measured with a question from the *Alcohol Screening and Brief Intervention for Youth* questionnaire (National Institute on Alcohol Abuse and Alcoholism (NIAAA), 2014): "*In the past year, on how many days have you had more than a few sips of beer, wine, or any drink containing alcohol?*" The frequency of drinking has a high sensitivity and specificity for identifying adolescents with alcohol-related problems (Chung et al., 2012). For 12-15 year old youth, the NIAAA suggests that drinking on 1-5 days in the past year indicates moderate risk and drinking on 6 or more days in the past year indicates high risk drinking (NIAAA, 2014).

d) Maximum Quantity was measured by a single open-ended question: *What is the largest number of drinks you've had at any one time?* A standard drink

typically contains 10 grams of alcohol in Thailand. Pictures of standard containers were shown with labels identifying the container sizes (Hongthong, Areesantichai, Kaunkaew, Chinnawattanad, & Nuddakul, 2012). We calculated the number of standard drinks that this would be equal to in liters (based on the volume of the container) multiplied that by the percent by volume of alcohol (%) multiplied by 0.789 (which is the density of ethanol at room temperature). Based on the NIAAA definition of binge drinking in children and adolescents (NIAAA, 2014), the following cutoffs were used: three drinks/occasion for boys aged 9-13, four drinks/occasion for boys age 14-15; and three drinks/occasion for girls aged 9-17.

c. Procedures and Data analysis

The drinker prototype and alcohol questionnaires were translated independently by native Thai speaking translators. After translation, the translators met to discuss and agree on suitable Thai words related to the original questionnaire. The researcher conducted the meetings as a moderator. In cases of continued disagreement, the adjustor was a nursing instructor in Thailand who works with adolescent alcohol consumption and is a native Thai. Finally, the three versions were reviewed by three committee members and adjudicated to establish the final 'translated' version.

2. Part 2 (Cognitive interview)

a. Subjects

The participants were 20 adolescents who were 13-15 years of age and in the 7^{th} -9^{th} grades in a public middle school in Ubon Ratchathani Province in the northeastern region of Thailand (Secondary Educational Service Area Office #29, 2014). There were two cycles of cognitive interviews, each with 10 adolescents.

b. Procedures and Measurements

After receiving permission from a public middle school to collect data, the researcher met the adolescents' parents at a school-parent meeting to inform them of the study. Parents were told that they needed to provide parental permission in order for the children to participate in the study. Adolescents who met the inclusion criteria and received parental permission forms were invited to participate and informed of the study's purpose, any potential risks/ benefits, and their rights during the study. Before the cognitive interview, the researcher asked participants what fictitious name they would like to be called during the interview. The researcher used the "think-aloud method," giving participants the questionnaire and asked them to think about it aloud to gain a better understanding of the cognitive processes related to the questions about drinker prototypes, alcohol use, and demographic data in the questionnaire. The researcher read each question aloud and participants were asked if they understood each question, following Willis's guidelines (2005). Willis (2005) suggested that asking participants about questions would show what they understood, what we should improve, and what questions are appropriate for the participants' understanding. An example for a question about favorability toward drinker prototype is "Please think about the question: *How sociable is he or she?* Responses range from one (not at all) to five (very). The probes for the question were: "*What does the term 'sociable' mean to you"; "How easy or difficult is it to tell how 'sociable' kids are who drink alcohol?"; "How did you come up with that answer?"; and "Was it easy or difficult to choose an answer ?"* The researcher noted each probe question's responses on note sheets and reviewed the notes with each participant to confirm the information. The interviews took 30-45 minutes per person.

After completing the first cycle with 10 participants and reaching data saturation, the researcher analyzed data and improved the questions. Then the researcher gave new participants (10 participants for second cycle who were different from the first cycle) the improved questions to confirm the understanding of the cognitive process using the "think-aloud method" and used the same probe questions as in the first cycle. The researcher also achieved data saturation with 10 participants in the second cycle. After participants completed the interview, the investigator gave $3.20 (100 Baht) to each adolescent as support for their lunch or school supplies.

c. Data Analysis

We reviewed the interview notes, categorized the most common problems with understanding the questions, and summarized them by item, problem, quotes from the participants, and suggestions for adapting the items to finalize the questionnaire.

3. Part 3 (Psychometric Testing Using Survey)

a. Subjects

The participants were 306 adolescents (different participants than in part 2) who were 13-15 years of age in the 7^{th} -9^{th} grades in the same public middle school in Ubon Ratchathani Province in the northeastern region of Thailand (Secondary Educational Service Area Office #29, 2014).

b. Measurements

Like in part 1, the questionnaire included the demographic data, favorability, similarity, and alcohol items used in the Thai version.

c. Procedures

Participant recruitment was conducted as described in *part 2*. In *part 3* the researcher met with the adolescents in a group setting in a private room at their school and participants completed a pencil-and-paper questionnaire with demographics, questions about favorability and similarity to the drinker prototype attributes, and alcohol use questions. The researcher verified that the questionnaires were fully completed and elicited any missing data from the participants. Data from the questionnaires was entered into a database using SPSS 19 software for analysis. After they completed the questionnaires, like in *part 2*, the investigator gave US$3.20 (100 Baht) to each adolescent as support for their lunch or school supplies.

d. Data Analysis

Frequencies and percentages for all variables were examined for impossible or out of range values. Next, histograms and box plots were conducted to check for the distributions of the variables. Finally, the assumptions of correlation and factor analysis (e.g., normality, linearity, homoscedasticity, and no multicollinearity) were checked. *Coefficient alpha* was used to estimate the internal consistency reliability of the Thai versions of the measurements. To test for construct validity, first, *Principal Component Analysis* (PCA) was used to determine the number of factors for perceived favorability of the drinker prototype and perceived similarity to the drinker prototype. Then, *bivariate correlations* were used to determine whether favorability toward the drinker prototype attributes and perceived similarity to the drinker prototype attributes were positively associated with alcohol use variables. Because this was the first study to examine the drinker prototype in Thailand, we examined correlations for boys and girls separately.

4. Protection of Human Subjects

The study was approved by The Institutional Review Board (IRB) of the University of Illinois at Chicago and the Boromarajonani College of Nursing, Sappasithiprasong, Ubon Ratchathani, Thailand (Appendix A). To protect the privacy of participants, each adolescent who participated was assigned a participant ID number, without recording their real name or class in order to track demographic data, characteristics of the drinker prototype, and alcohol use. The investigator also kept the parental permission, assent forms, and questionnaires at a secure location and data in the laptop computer was protected by password inside the research office at Boromarajonani College of Nursing, Sappasithiprasong, Ubon Ratchathani, Thailand and was transferred to the Research Electronic Data Capture (REDCap) system to protect the data at the researcher's office at the University of Illinois at Chicago College of Nursing.

C. Results

1. Part 1: Translation

During discussion, the committee decided the translated questionnaire needed modification (Table IV). The general data section was modified by adding items for the participant's sub-district and district. The favorability toward the drinker prototype section was rearranged to improve its flow by first explaining what participants should do for each item and the meaning of favorability. Four of the six items were changed to be more suitable in the Thai culture. The item about "sociable" was changed to be "*sangsan/khauwsangkom.*" The item about being a "fighter" was changed to be "*chainanglang/chaobtaosoo.*" Each of these two words in Thai means single related word in English. The item about being "talkative" was changed into a Thai idiom (c*hangpood changkuy).* The last item, about being *"funny",* was also changed into a

Thai idiom *(taloak khobkhan).* These idioms clearly indicate "talkative" or "funny" to Thai adolescents. Turning to the similarity of drinker prototype, the four items (sociable, fighter, talkative, and funny) related to these terms were also changed in this section based in the same rationale. The other items (cool and mature) were clear to the committee. Lastly, the alcohol use section was changed by adding each of the 12 months and asking for the number of days that they drank in each month so it would be easier for the youths to remember and make it easier to calculate total drinking days in the past year. The maximum for number of drinks at any one time was also added. Pictures of different kinds of alcohol were added to the maximum number of drinks item to make it easier for participants to understand and to do calculations. The other items and the introduction were found acceptable by the entire translation committee.

2. Part 2: Cognitive Interview

a. Characteristics of the Subjects

Table V presents the characteristics of the participants in part 2 of the study. On average, participants were 14.10 years old and 65% of the samples were girls. There were a relatively equal number of participants from each grade. The majority of participants were from urban areas (70%).

b. Content of the Cognitive Interview

The outcomes of the cognitive interviews are presented in four categories, including comprehension processing, retrieval processing, decision and judgment processes, and response processes (Willis, 2005) in Table VI. The first outcome, comprehension processing, showed that several words used in the questionnaire were understood differently by the participants. The researcher asked the participants to suggest appropriate words that would enhance understanding of the items. Second, in retrieval processing, some participants found it

hard to recall information about alcohol use from their past. Third, in decision and judgment processes, the participants found it hard to distinguish between favorability and similarity because the favorability and similarity ratings were of the same attributes (sociable, fighter, talkative, cool, mature, and funny). They needed to re-read each question before answering. Fourth, for the response processes used for each question, the participants found it hard to respond in the general data and alcohol use sections because of limited choices and a lack of representative examples. Additionally, the researcher asked the participants to suggest words which made the rest of categories more understandable to them regarding their comprehension processing.

3. Part 3: Psychometric Testing Using Survey

a. Characteristics of the Subjects

Table VII presents the sample characteristics for part 3 of the study. On average, participants were 13.86 years old (SD=.74) and 59.5% were girls. There were an equal number of participants from each grade (33.30% for each grade). The majority of participants were from urban areas (62.70%).

b. Drinker Prototype

The mean favorability rating across the six drinker prototype attributes was above the midpoint of the scale M= 3.20 (*SD* = .65). The mean similarity rating across the six drinker prototype attributes was just below the midpoint of the scale M= 2.83 (*SD* = .70). The distribution of both variables was normal (see Table VIII) with scores ranging from the low to high ends of the scale for both variables.

c. Alcohol Use

Table IX shows descriptive statistics for the alcohol use variables. Approximately 58% of the participants reported some use of alcohol in their lifetime and 33% reported drinking alcohol in the last year. Among those adolescents who reported drinking in the past year, the mean number of drinking days in the last year was 7.35 (*SD*= 12.98). The maximum number of drinks per occasion on average was 4.14 (*SD*= 7.40). Among past year drinkers, 14% of boys and 29% of girls reported at least one binge drinking episode based on NIAAA criteria (NIAAA, 2014).

Consistent with the alcohol use variables in most studies, the alcohol frequency and maximum number of drinks/occasion variables were very right skewed (*Skewedness*= 6.22 for frequency, and 5.53 for maximum). Therefore, non-parametric statistics were used.

d. Reliability of the Drinker Prototype

The inter-item correlation coefficient and the overall internal consistency are shown in Table X and Table XI respectively. For favorability, almost all of the inter-item correlation coefficients were positive values, except for “Fighter” with “Cool” and “Funny”. The corrected item-to-total correlations and the corrected item-total correlation for the six items were all positive, ranging between .07 and .39, and five had correlation values above 0.3. The alpha coefficient was consistently low (.56) even if other items were deleted; only increasing very slightly (.60).

For similarity, all inter-item correlation coefficients of the 6-item scale (Table X) were positive values. The corrected item-to-total correlations and the corrected item-total correlation (Table XI) for the six items were all positive, ranging between .28 and .51 and

five items had correlation values above 0.3. The alpha coefficient was .70 and the coefficient only increased by .01 if the item "Fighter" was deleted.

e. Factor analysis of Drinker Prototype Attributes

Table XII shows the factor analysis (Principal Components Analysis; PCA) for perceived favorability of and perceived similarity to the drinker prototype attributes. For favorability and similarity, the Bartlett's test of sphericity and Kaiser-Meyer-Olkin measure of sampling adequacy (KMO) (> .60) were acceptable for factor analysis (Kaiser, 1974). For favorability, two factors had eigenvalues greater than one. The first factor (eigenvalue 1.94) loadings ranged from .54 to .70 across five items (sociable, talkative, cool, mature, and funny). The second factor (eigenvalue 1.15) loading was .52 (fighter). For similarity, one factor had an eigenvalue greater than one (eigenvalue 2.45) with scores ranging from .45 to .71.

f. Correlation between the Drinker Prototype and Alcohol Use

Table X shows bivariate Spearman Rho Correlations between favorability of the drinker prototype, perceived similarity to the drinker prototype, and the four alcohol use variables for boys and girls separately. We used Spearman Rho Correlations because the alcohol use distributions were right skewness. Transformation of the alcohol variables did not difference from the non-transformational variables. So, we used the original alcohol variables. Correlations between favorability and alcohol use and similarity and alcohol use were much stronger for girls than for boys. For girls, correlations between favorability and alcohol use variables ranged from *rho*=.15 to .19 and correlations between similarity and alcohol use variables ranged from *rho*=.38 to .51. For boys, all correlations were near zero with the exception of perceived similarity and lifetime alcohol use (*rho*=.21).

D. Discussions

In this study, we culturally adapted a drinker prototype measure (Gerrard et al., 2006) for use with Thai adolescents. Using the **committee approach** for translation (Harkness & Schoua-

Glusberg, 1998) with native Thai translators from several backgrounds, discussions by the translators resulted in a clear and accurate translation of the measure. The translators' knowledge of the Thai culture and language facilitated a contextually meaningful translation rather than a mere word-by-word translation. The different translators's backgrounds and intimate knowledge of Thai culture, language, and information resulted in a culturally-adapted questionnaire that is appropriate for the target population (Thai adolescents). The **cognitive interviews** with Thai adolescents provided valuable information (e.g. about using simpler language, bolding some items, providing additional response options, breaking complex questions into two separate questions) to ensure that our translated version of the drinker protype questions and the alcohol questions were understandable. With the exception of low reliability for favorability ratings, **psychometric testing** of our adapted instrument revealed that our culturally-adapted drinker prototype measure for Thai adolescents works as well as similar measures used in other parts of the world (with same-aged adolescents).

The lifetime prevalence of **alcohol use** in our sample (58%) was much higher than the 24% prevalence rates found in population-based samples of adolescents aged 13-15 in Thailand (Assanangkornchai et al., 2009; Balogun et al., 2014). There are many possible explanations for this difference. First, our study is based on a non-probability sample of youth in a single province of Thailand. It is possible that adolescents in this province were more likely to have experienced drinking onset than adolescents across the nation. Other studies comducted in one single province of Thailand had similarly high prevalence estimates (Hongthong & Areesantichai, 2014; Hongthong et al., 2012). Another possible explanation is that the data for both of the population-based studies were collected in 2007 and 2008. Our data were collected in 2015. It is possible that the prevalence of alcohol use has increased over those 7-8 years.

In terms of past year prevalence, one of three adolescents in our sample were considered moderate risk drinkers based on the NIAAA definition for this age group of drinking at least one day in the past year (NIAAA, 2014). In terms of frequency, among past year drinkers 19% of boys and 31% of girls were considered high risk drinkers based on the NIAAA definition for this age group of 6 or more drinking days in the past year. Finally, based on maximum quantity per occasion, among past year drinkers, 14% of boys and 29% of girls could be classified as binge drinkers. These point estimates are consistent with recent data showing that the prevalence of binge drinking has increased for girls, but not for boys (White et al., 2015).

The prevalence and level of alcohol use data in our sample highlights the importance of having culturally-appropriate measures of a known determinant of adolescent alcohol use. Perceived favorability of and perceived similarity to the traits of the prototypical drinker are modifiable intervention targets, which makes our culturally-adapted measure of the drinker prototype particularly valuable. Consistent with several other studies, the adolescents in our sample rated the traits of the prototypical adolescent drinker as slightly favorable (over the midpoint) and perceived similarity to the traits as neutral (Atwell, Abraham, & Duka, 2011; Spijkerman et al., 2007; Spijkerman, van den Eijnden, Vitale, & Engels, 2004). The normal distribution of the favorability and similarity scores was also consistent with other studies (Atwell et al., 2011; Gibbons et al., 2010; Norman et al., 2007; Spijkerman et al., 2007; Spijkerman et al., 2004), indicating that just as many adolescents considered the traits of a drinker to be unfavorable as favorable and just as many adolescents considered themselves to be dissimilar to these traits as similar.

Reliability of the **favorability** ratings in our sample was lower than what has been reported in other studies. Almost all of the inter-item correlations of the 6-item scores were

positive and none of values had a coeffient value above 0.9, indicating no items were redundant. Alhough only two items ("fighter" and "cool"; and "fighter" and "funny") had negative inter-item coefficients, the negative values were extremely small. The corrected item-to-total correlations were all positive and five of the six correlation were above 0.2, indicating that most of the six items correlated well with the total score and the scale overall (Field, 2009). Although the Cronbach's alpha values increased slightly after the "Fighter" item was deleted, we decided to keep the "Fighter" item in the scale because it was deemed relavant to the overall construct and the values of item-total correlations was lower than .95 indicating that no item was redundant or overlapped with another item in the construct. Reliability of the fvorability ratings in other studies has varied, ranging from .63 (Gerrard et al., 2006) to greater than .70 (Armenta et al., 2015; Gibbons et al., 2010). Although the ages of participants in these studies were similar to ours (10-12, 10-14 years old), cultural differences about the meaning of favorability may explain these findings. Given that the attributes were derived from a study of Thai adolescents, further studies should be conducted to confirm that the meaning of favorability makes sense to them.

The factor structure of the favorability scale in our study is consistent with that of several other studies, though it is somewhat difficult to compare studies given that the number and content of the attributes, the sample age, and cultures differ across studies. In our study with 6 attributes in Thai sample of 13-15 year old adolescents, we found two factors, primarily because the attribute "fighter" did not load strongly on the factor with the other five attributes. While "fighter" is the only negative item, other studies have found that positive and negative items load on one factor (Kalebić Maglica, 2011). Moreover, most other studies have found three factors (Blanton et al., 1997; Gibbons et al., 2004; Spijkerman et al., 2007). Only one study – with older adolescents aged 14-19 – found one factor (Kalebić Maglica, 2011).

Associations between favorability of the drinker prototype traits and alcohol use variables in our study were modest for girls, but near zero for boys. Gender differences in these relationships have not been examined in other studies. But our findings for girls were similar to the findings of some studies (Gerrard et al., 2006; Kalebić Maglica, 2011; Spijkerman et al., 2007), but weaker than studies with older samples. Litt et al. (2015) found a correlation of .31 between favorability and ever drinking, and in a sample of undergraduate students, they found a correlation of .57 between favorability and frequency of drinking (Litt, Stock, & Lewis, 2012). The differences between our findings and the findings of these studies might be related to differences in the culture-specific views of alcohol use and age. We are not aware of any other studies that have examined gender differences in these relationships.

Reliability and construct validity of the **similarity** scale were adequate. The corrected item-to-total correlations were all positive and the correlations of all items were above 0.2, indicating that all items correlated well with the total score and the scale overall (Field, 2009). Internal consistency reliability in our study was lower than that of older British undergraduate adolescents (*Cronbach's alpha* = .74-.84) (Rivis & Sheeran, 2013) . We also found that perceived similarity to the drinker prototype traits was characterized by a single factor. Given that no previous studies have reported factor analysis for similarity, comparisons with other studies are not possible.

Correlations between perceived similarity to the drinker prototype attributes and alcohol use variables were very different for boys and girls in our study. For girls, correlations with all four alcohol use variables were fairly strong, but for boys, there was only one modest correlation between ever drinking and similarity. Our correlations for girls are consistent with or higher than correlations found in other studies. In Dutch adolescents (mean age 17 years), Teunissen et al.

(2014) found that similarity to the heavy drinker prototype had moderate to high correlations with the number of drinks in the last week (*r*=.40), drinking frequency (*r*=.41), and binge frequency (*r*=.58); similarity to the moderate drinker prototype had a moderate correlation with drinking frequency (*r*=.30). In a younger sample (10-12 year old African American adolescents), however, Gerrard et al. (2006) found no correlation between similarity to the drinker prototype and an alcohol use score based on ever drinking and frequency of drinking (*r*= .05, *ns*). The differences in the pattern of correlations between all of these studies likely reflect age and culture differences in the samples. To our knowledge, this is the first study to examine gender differences in these relationships.

E. Limitations

The findings from this study should be considered in light of certain limitations. Our convenience sample from a single public middle school may not be representative of all Thai adolescents. Moreover, the cross-sectional nature of this study prohibits causal inferences between the prototype ratings and alcohol use. Test-retest reliability was not examined in this study. Lastly, all the data reported in this study was based on the adolescents' self-reports of alcohol use.

F. Conclusions

We culturally-adapted and psychometrically tested an existing measure of the perceived favorability of and similarity to the drinker prototype in Thai adolescents. Our findings suggest that our culturally adapted measure works as well for adolescent girls in Thailand as it does with other samples around the world, but it is not valid or reliable for adolescent boys in Thailand. Given that this is the first study to examine gender differences in the relationship between favorability of and similarity to the drinker prototype and alcohol use variables, further studies are needed.

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TABLE IV

RESULTS: CHANGES IN QUESTIONNAIRE FROM COMMITTEE APPROACH

Part of questionnaire	Items	Changes
General data	Area	Adding sub-district and district
Favorability	Introduction: explaining the meaning of favorability and what participants should do for each item	Re-ordering: explaining what participants should do for each item and then the meaning of favorability
	Sociable	Adding two words for better understanding of the characteristics in Thai (*sangsan*/*khauwsangkom*)
	Fighter	Adding two words for better understanding of the characteristics in Thai (*chainanglang/chaobtaosoo*)
	Talkative	Adding a Thai idiom so that the characteristics are easier to understand in the Thai culture (*changpood changkuy*)
	Funny	Adding a Thai idiom so that the characteristics are easier to understand in the Thai culture (*taloak khobkhan*)
Similarity	Sociable	Adding two words for better understanding of the characteristics in Thai (*sangsan*/*khauwsangkom*)
	Fighter	Adding two words for better understanding of the characteristics in Thai (*chainanglang/chaobtaosoo*)
	Talkative	Adding a Thai idiom so that the characteristics are easier to understand in the Thai culture (*changpood changkuy*)
	Funny	Adding a Thai idiom so that the characteristics are easier to understand in the Thai culture (*taloak khobkhan*)
Alcohol use	Number of days for drinking in the past 1 year	Listing each of the 12 months individually for drinking
	Maximum for number of drinks at any one time	Adding pictures of kinds of alcohol to more easily calculate the number of drinks

TABLE V

SAMPLE CHARACTERISTICS (*N*=20)

Characteristics	**1st Cycle(N=10)**	**2nd Cycle (N=10)**	**Total (N=20)**
Age (years old) (mean age =14.10)			
13	3(30%)	3(30%)	6(30%)
14	3(30%)	3(30%)	6(30%)
15	4(40%)	4(40%)	8(40%)
Sex			
Male	3(30%)	4(40%)	7(35%)
Female	7(70%)	6(60%)	13(65%)
Grade			
7th grade	3(30%)	3(30%)	6(30%)
8th grade	3(30%)	3(30%)	6(30%)
9th grade	4(40%)	4(40%)	8(40%)
Area			
Urban area	7(70%)	7(70%)	14(70%)
Rural area	3(30%)	3(30%)	6(30%)

TABLE VI

PROBLEMS WITH FAVORABILITY AND SIMILARITY

Category	Part/Item	Problem	Quotes	Suggestion
Comprehension processing	*Favorability*			
	Item 1-6	Participants interpreted "he/she" differently	"I think that I only have images of males who drink alcohol" (Kimbuli-14 G1) "I think he/she means images for male's and female's drinking alcohol" (Pang-13 G1)	Change "he/she" into "one" (*Khauw*)
	Similarity			
	Item 1-6	Participants interpreted "you" (*Ther*) differently	"I think that "you"(*Ther*) means order me" (Bambam-15 G1) "I am a man; I think these questions did not ask me because of "you" (Ther)." (Thoma-15 G1)	Change "you (*Ther*)" into "you" (*Khun*)
Retrieval processing	Relevant information all items in alcohol use	"Think about alcohol use had been a long time for participants to remember information.	"It is hard to remember how much I drank. I drink more and more." (Wangtayong-14 G1)	-Provide examples for number of drinks
Decision and judgment processes	Similarity of content in items for favorability and similarity	The attributes were the same for the favorability and similarity scales.	"I think why you asked me this twice in the questionnaire. Then I reread each question about favorability and similarity again because I'm not sure that I answered them the same or not."" (Khing-13 G1) "I can't separate how the content of favorability and similarity are different" (Anna-14 G1)	Bold "take a moment and think about the type of kid your age who drinks alcohol" in favorability and "kind of person you are" in similarity.

TABLE VI (continued)

PROBLEMS WITH FAVORABILITY AND SIMILARITY

Category	Part/Item	Problem	Quotes	Suggestion
Response processes	*General data*			
	age	Participants were confused by calculating their age.	"Because I am 15 years old and 2 months, May I writing 15 years old?" (Kokori-15 G1) "I am confused about how to calculate my age. Why you don't have year and month to fill in. I think it is easier to me, like other questionnaires that I did." (Khing-13 G1)	Add years and months to fill in
	sex	Participants interpreted it as if they were gay or tomboy and therefore the choices should have more than two options	"I have some question. If I am a tomboy, I don't know which I should select" (Pan-13 G1) "Because I am gay, I don't like to select "male". Do you another choice for me?" (Anna-14 G2)	Add a choice in sex from "male" and "female" to be "male," "female," and "other"
	area	Participants misinterpreted "sub-district and district"	"I only wrote the sub-district, it is okay. Everybody knows where it is" (Pan-13 G1) "I live in Warinchrab district, I did not write the sub-district. It is enough"Michiko-15 G1	Separate the sub-district and district items to be filled in
	Alcohol use			
	Maximum number of drinks at any one times	Participants were confused about how to calculate the number of drinks	"I don't how to calculate the number of drinks" (Khing-13 G1) "I had 1 can of beer and 1 bottle How much did I drink? I cannot calculate in cc. Can you do an example for me?" (Wangtayong-14 G1)	Provide examples for numbers of drinks.

TABLE VII

SAMPLE CHARACTERISTICS (*N*=306)

Characteristics	**N**	**Percentage**	**Range**	**Median**	**Mean**	**SD**
Age			12.67-15.58	13.79	13.86	.74
Sex						
Male	120	39.20				
Female	182	59.50				
other	4	1.30				
Grade						
7th grade	102	33.30				
8th grade	102	33.30				
9th grade	102	33.30				
Area						
Urban area	192	62.70				
Rural area	114	37.30				

TABLE VIII

DESCRIPTIVE AND DISTRIBUTION STATISTICS FOR FAVORABITY AND SIMILARITY OF PROTOTYPE VARIABLES (N=306)

Drinker Prototypes	***Range***	***Median***	***Mean***	***SD***	***Skewedness***	***Kurtosis***
Favorability	1.33-4.67	3.17	3.20	.65	-.24	.03
Similarity	1.00-4.50	3.00	3.00	.73	-.49	-.25

TABLE IX

DESCRIPTIVE STATISTICS FOR ALCOHOL USE VARIABLES FOR WHOLE SAMPLE AND PAST YEAR DRINKERS

Alcohol Use	***All participants (N=306)***						***Past Year Drinkers Only (N=101)***					
	N	***%***	***Range***	***Median***	***Mean***	***SD***	***N***	***%***	***Range***	***Median***	***Mean***	***SD***
Ever Drink												
No	129	42.20					2	2.00				
Yes	177	57.80					99	98.00				
Past year drink												
No	205	67.00					0	0.00				
Yes	101	33.00					101	100.00				
Number of drinking days per year (Frequency)			0-87	.00	2.42	8.20			1.0-87.00	3.00	7.35	12.98
Maximum number of drinks/occasion			0-37.50	.00	1.37	4.67			.28-37.50	1.57	4.14	7.41

TABLE X

INTER-ITEM CORRELATION COEFFICIENTS FOR FAVORABILITY AND SIMILARITY OF DRINKER PROTOTYPE (*N*=306)

Items	**1**	**2**	**3**	**4**	**5**	**6**
1. Sociable	--	.18	.39	.33	.27	.27
2. Fighter	.11	--	.20	.26	.25	.09
3. Talkative	.15	.07	--	.35	.29	.34
4. Cool	.25	-.04	.26	--	.36	.32
5. Mature	.28	.12	.11	.35	--	.35
6. Funny	.09	-.01	.41	.26	.14	--

Below diagonal for favorability and above diagonal for similarity

TABLE XI

RELIABILITY FOR FAVORABILITY AND SIMILARITY OF DRINKER PROTOTYPE (*N*=306)

Item About	**Favorability**		**Similarity**	
	Corrected Item-to-total Correlation	**Cronbach's Alpha if Item Deleted**	**Corrected Item-to-total Correlation**	**Cronbach's Alpha if Item Deleted**
1. Sociable	31.	.51	.44	.66
2. Fighter	07.	.60	.28	.71
3. Talkative	35.	.49	.51	.64
4. Cool	39.	.46	.50	.64
5. Mature	36.	.48	.46	.66
6. Funny	31.	.51	.43	.67

Cronbach's alpha =.56 for favorability, and .70 for similarity

TABLE XII

PRICIPAL COMPONENT FACTOR OF DRINKER PROTOTYPE

Items	Favorability		Similarity
	Factor1	Factor2	Factor1
1. Sociable	**.54**	.48	**.65**
2. Fighter	.14	**.52**	**.45**
3. Talkative	**.63**	-.43	**.71**
4. Cool	**.70**	-.01	**.70**
5. Mature	**.61**	.43	**.65**
6. Funny	**.61**	-.53	**.64**

TABLE XIII

CORRELATION BETWEEN FAVORABILITY AND SIMILARITY OF DRINKER PROTOTYPE AND ALCOHOL USE FOR BOY (ABOVE DIAGONAL) AND GIRLS (BELOW DIAGONAL) (*N*=306)

Variables	1	2	3	4	5	6
1. Favorability(total)	--	.19*	**.03**	**.01**	**.00**	**.01**
2. Similarity	.24**	--	**.21***	**.04**	**.06**	**.07**
3. Ever Drink in Lifetime	**.15***	**.51****	--	.55**	.52**	.52**
4. Past Year Alcohol Use	**.17***	**.38****	.58**	--	.97**	.97**
5. Frequency	**.19****	**.40****	.57**	.98**	--	.97**
6. Maximum of Drink	**.19***	**.40****	.56**	.98**	.98**	--

*p<.05, **p<.01

APPENDICES

APPENDIX A
University of Illinois at Chicago IRB Letters of Approval

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice
Initial Review (Response To Modifications)

December 19, 2014

Patcharee Jaigarun, BSN
Health Systems Science
845 S Damen Avenue, Rm 1146
M/C 802
Chicago, IL 60612
Phone: (312) 961-8287 / Fax: (312) 996-8945

RE: Protocol # 2014-1131
"Determining the Drinker Prototype among Thai Adolescents"

Dear Dr. Jaigarun:

Please remember to obtain a copy of IRB approval from Thailand prior to recruiting or enrolling subjects, or obtaining data. A copy of the IRB approval must be accompanied by an Amendment form when submitted to the UIC IRB.

Please note that the training credits for Lorna Finnegan will expire on January 24, 2015. All UIC investigators and key research personnel involved in human subject research must complete a minimum of two hours of continuing education in human subject protection every two years. For further information, please see the OPRS website: http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/education/index.shtml

Please remember to submit the signed transcriptionist confidentiality agreement once the transcriptionist has been identified. The agreement must be submitted via an Amendment form when submitted to the UIC IRB.

Your Initial Review (Response To Modifications) was reviewed and approved by the Expedited review process on December 15, 2014. You may now begin your research

APPENDIX A (continued)

Please note the following information about your approved research protocol:

Protocol Approval Period: December 15, 2014 - December 15, 2015
Approved Subject Enrollment #: 510
Additional Determinations for Research Involving Minors: The Board determined that this research satisfies 45CFR46.404)', research not involving greater than minimal risk. Therefore, in accordance with 45CFR46.408)', the IRB determined that only one parent's/legal guardian's permission/signature is needed. Wards of the State may not be enrolled unless the IRB grants specific approval and assures inclusion of additional protections in the research required under 45CFR46.409 '. If you wish to enroll Wards of the State contact OPRS and refer to the tip sheet.
Performance Sites: UIC, Pathumpithayakorm School (Thailand)
Sponsor: None

a) Determining the Drinker Prototype among Thai Adolescents; Version 2; 12/10/2014

Recruitment Material(s):

a) Script to Meet Parent for Phase I (English); Version 1; 11/20/2014
b) Script to Meet Parent for Phase 2 and 3 (Thai); Version 1; 11/20/2014
c) Script to Meet Parent for Phase 2 and 3 (English); Version 1; 11/20/2014
d) Script to Meet Parent for Phase I (Thai); Version 1; 11/20/2014

Informed Consent(s):

a) A waiver of documentation of consent has been granted under 45 CFR 46.117 for this research to protect the identity of the subjects; primary risk is a breach of privacy and/or confidentiality; subjects will be provided with an information sheet that contains all of the elements of consent

Assent(s):

a) Assent Form for Phase I (English); Version 2; 12/10/2014
b) Assent Form for Phase I (Thai); Version 2; 12/10/2014
c) Assent Form for Phase 3 (Thai); Version 2; 12/10/2014
d) Assent Form for Phase 2 (Thai); Version 2; 12/10/2014
e) Assent Form for Phase 3 (English); Version 2; 12/10/2014
f) Assent Form for Phase 2 (English); Version 2; 12/10/2014

Parental Permission(s):

a) Permission Form for Phase I (English); Version 2; 12/10/2014
b) Permission Form for Phase I (Thai); Version 2; 12/10/2014
c) Permission Form for Phase 3 (Thai); Version 2; 12/10/2014
d) Permission Form for Phase 2 (Thai); Version 2; 12/10/2014
e) Permission Form for Phase 3 (English); Version 2; 12/10/2014
f) Permission Form for Phase 2 (English); Version 2; 12/10/2014

APPENDIX A (continued)

Your research meets the criteria for expedited review as defined in 45 CFR 46.110(b)(1) under the following specific category(ies):

(6) Collection of data from voice, video, digital, or image recordings made for research purposes., (7) Research on individual or group characteristics or behavior (including but not limited to research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
11/21/2014	Initial Review	Expedited	11/25/2014	Modifications Required
12/11/2014	Response To Modifications	Expedited	12/15/2014	Approved

Please remember to:

→ Use your **research protocol number** (2014-1131) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the enclosure,
"**UIC Investigator Responsibilities, Protection of Human Research Subjects**"
(http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf)

Please note that the UIC IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact OPRS at (312) 996-1711 or me at (312) 355-0816. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Alison Santiago, MSW, MJ
IRB Coordinator, IRB # 2
Office for the Protection of Research

APPENDIX A (continued)

Subjects

Enclosure(s):

1. **UIC Investigator Responsibilities, Protection of Human Research Subjects**
2. **Assent Document(s):**
   a) Assent Form for Phase I (English); Version 2; 12/10/2014
   b) Assent Form for Phase I (Thai); Version 2; 12/10/2014
   c) Assent Form for Phase 3 (Thai); Version 2; 12/10/2014
   d) Assent Form for Phase 2 (Thai); Version 2; 12/10/2014
   e) Assent Form for Phase 3 (English); Version 2; 12/10/2014
   f) Assent Form for Phase 2 (English); Version 2; 12/10/2014
3. **Parental Permission(s):**
   a) Permission Form for Phase I (English); Version 2; 12/10/2014
   b) Permission Form for Phase I (Thai); Version 2; 12/10/2014
   c) Permission Form for Phase 3 (Thai); Version 2; 12/10/2014
   d) Permission Form for Phase 2 (Thai); Version 2; 12/10/2014
   e) Permission Form for Phase 3 (English); Version 2; 12/10/2014
   f) Permission Form for Phase 2 (English); Version 2; 12/10/2014
4. **Recruiting Material(s):**
   a) Script to Meet Parent for Phase I (English); Version 1; 11/20/2014
   b) Script to Meet Parent for Phase 2 and 3 (Thai); Version 1; 11/20/2014
   c) Script to Meet Parent for Phase 2 and 3 (English); Version 1; 11/20/2014
   d) Script to Meet Parent for Phase I (Thai); Version 1; 11/20/2014

cc: Arlene Miller, PhD, RN, Health Systems Science
Colleen Corte (Faculty Sponsor) College of Nursing, M/C 802

APPENDIX A (continued)

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice
Amendment to Research Protocol and/or Consent Document – Expedited Review
UIC Amendment # 1

January 8, 2015

Patcharee Jaigarun, BSN
Health Systems Science
845 S Damen Avenue, Rm 1146
M/C 802
Chicago, IL 60612
Phone: (312) 961-8287 / Fax: (312) 996-8945

RE: **Protocol # 2014-1131**
"Determining the Drinker Prototype among Thai Adolescents"

Dear Dr. Jaigarun:

Members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research under expedited procedures for minor changes to previously approved research allowed by Federal regulations [45 CFR 46.110(b)(2)]. The amendment to your research was determined to be acceptable and may now be implemented.

Please note the following information about your approved amendment:

Please note that training for Lorna Finnegan will expire January 24, 2015 and she will not be eligible to engage in research protocols submitted to the UIC Institutional Review Board, (IRB). All investigators and key research personnel involved in human subject research must complete a minimum of two hours of investigator training in human subject protection every two years.

Please remember to submit the signed transcriptionist confidentiality agreement once the transcriptionist has been identified. The agreement must be submitted via an Amendment form when submitted to the UIC IRB.

Amendment Approval Date: January 8, 2015

Amendment:

Summary: UIC Amendment #1 dated January 7, 2015 (received 1/7/2015) is an investigator-

APPENDIX A (continued)

initiated amendment regarding the following:
(1) Submit Thailand IRB approval (date 1/6/2015);
(2) Submit the transcriber confidentiality agreement template.

Approved Subject Enrollment #: 510
Performance Sites: UIC, Pathumpithayakorm School (Thailand), Boromarajonani College of Nursing, Sanpasotthiprasong
Sponsor: None

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
01/07/2015	Amendment	Expedited	01/08/2015	Approved

Please be sure to:

→ Use your research protocol number (2014-1131) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the enclosure,
"**UIC Investigator Responsibilities, Protection of Human Research Subjects**"
(http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf)

Please note that the UIC IRB #2 has the right to ask further questions, seek additional information, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the OPRS at (312) 996-1711 or me at (312) 355-2764. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Betty Mayberry, B.S.
IRB Coordinator, IRB # 2
Office for the Protection of Research Subjects

Enclosure: None

cc: Arlene Miller, PhD, Health Systems Science, M/C 802
Colleen Corte, Faculty Sponsor, College of Nursing, M/C 802

APPENDIX A (continued)

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice
Amendment to Research Protocol and/or Consent Document – Expedited Review
UIC Amendment # 2

January 20, 2015

Patcharee Jaigarun, BSN
Health Systems Science
845 S Damen Avenue, Rm 1146
M/C 802
Chicagoi, IL 60612
Phone: (312) 961-8287 / Fax: (312) 996-8945

RE: **Protocol # 2014-1131**
"Determining the Drinker Prototype among Thai Adolescents"

Dear Dr. Jaigarun:

Members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research and/or consent form under expedited procedures for minor changes to previously approved research allowed by Federal regulations 45 CFR 46.110(b)(2). The amendment to your research was determined to be acceptable and may now be implemented.

Please note the following information about your approved amendment:

Amendment Approval Date: January 15, 2015

Amendment:

Summary: UIC Amendment #8, dated and received January 9, 2015 is an investigator-initiated amendment about the following:

1) Submission of a signed transcriptionist confidentiality agreement (English and Thai versions dated January 9, 2015).

Approved Subject Enrollment #: 510

Performance Sites: UIC, Pathumpithayakorm School (Thailand), Boromarajonani College of Nursing, Sanpasotthiprasong

APPENDIX A (continued)

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
01/09/2015	Amendment	Expedited	01/15/2015	Approved

Please be sure to:

→ Use your research protocol number (2014-1131) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the OPRS website under:
"**UIC Investigator Responsibilities, Protection of Human Research Subjects**"
(http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf)

Please note that the UIC IRB #2 has the right to ask further questions, seek additional information, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the OPRS at (312) 996-1711 or me at (312) 996-9299. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Anna Bernadska, M.A.
IRB Coordinator, IRB # 2
Office for the Protection of Research Subjects

Enclosure: None

cc: Colleen Corte, Faculty Sponsor, Health Systems Science, M/C 802
Arlene Miller, PhD, RN, Health Systems Science, M/C 802

APPENDIX A (continued)

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice
Amendment to Research Protocol and/or Consent Document – Expedited Review
UIC Amendment # 3

May 26, 2015

Patcharee Jaigarun, BSN
Health Systems Science
845 S Damen Avenue, Rm 1146
M/C 802
Chicagoi, IL 60612
Phone: (312) 961-8287 / Fax: (312) 996-8945

RE: **Protocol # 2014-1131**
"Determining the Drinker Prototype among Thai Adolescents"

Dear Dr. Jaigarun:

Members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research and/or consent form under expedited procedures for minor changes to previously approved research allowed by Federal regulations 45 CFR 46.110(b)(2). The amendment to your research was determined to be acceptable and may now be implemented.

Please note the following information about your approved amendment:

Amendment Approval Date: May 18, 2015

Amendment:

Summary: UIC Amendment #3, dated May 11, 2015 and received May 13, 2015, is an investigator-initiated amendment adding questions to the questionnaire to support construct validity of the drinker prototype measure in the study (Protocol, v. 2, 5/11/2015 including the updated questionnaire pp. 30-33).

Approved Subject Enrollment #: 510

Performance Sites: UIC, Pathumpithayakorm School (Thailand), Boromarajonani College of Nursing, Sanpasotthiprasong

Sponsor: None

APPENDIX A (continued)

PAF#: Not applicable

Research Protocol:

a) Determining the Drinker Prototype among Thai Adolescents; Version 2; 12/10/2014

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
05/13/2015	Amendment	Expedited	05/18/2015	Approved

Please be sure to:

→ Use your research protocol number (2014-1131) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the OPRS website under:
"**UIC Investigator Responsibilities, Protection of Human Research Subjects**"
(http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf)

Please note that the UIC IRB #2 has the right to ask further questions, seek additional information, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the OPRS at (312) 996-1711 or me at (312) 996-9299. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Anna Bernadska, M.A.
IRB Coordinator, IRB # 2
Office for the Protection of Research Subjects

Enclosure: None

cc: Colleen Corte, Faculty Sponsor, Health Systems Science, M/C 802
Lorna K. Finnegan, Health Systems Science, M/C 802

APPENDIX A (continued)

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice
Continuing Review

November 17, 2015

Patcharee Jaigarun, BSN
Health Systems Science
845 S Damen Avenue, Rm 1146
M/C 802
Chicago, IL 60612
Phone: (312) 961-8287 / Fax: (312) 996-8945

RE: **Protocol # 2014-1131**
"Determining the Drinker Prototype among Thai Adolescents"

Dear Ms. Jaigarun:

Your Continuing Review was reviewed and approved by the Expedited review process on November 13, 2015. You may now continue your research.

Please note that to add funding an Amendment form and a copy of funding paperwork/award letter are required in addition to Appendix Z.

Please note the following information about your approved research protocol:

Protocol Approval Period: November 13, 2015 - November 12, 2016
Approved Subject Enrollment #: 510 (data analysis from 369 subjects)
Additional Determinations for Research Involving Minors: The Board determined that this research satisfies 45CFR46.404', research not involving greater than minimal risk.
Performance Sites: UIC, Pathumpithayakorm School (Thailand), Boromarajonani College of Nursing, Sanpasotthiprasong
Sponsor: None
PAF#: Not applicable
Research Protocol:

b) Determining the Drinker Prototype among Thai Adolescents; Version 2, 05/11/2014

APPENDIX A (continued)

Recruitment Material:

e) N/A – Limited to data analysis only

Informed Consent:

b) N/A – Limited to data analysis only

Your research meets the criteria for expedited review as defined in 45 CFR 46.110(b)(1) under the following specific categories:

(6) Collection of data from voice, video, digital, or image recordings made for research purposes., **(7)** Research on individual or group characteristics or behavior (including but not limited to research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
11/11/2015	Continuing Review	Expedited	11/13/2015	Approved

Please remember to:

→ Use your **research protocol number** (2014-1131) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the OPRS website under:
"**UIC Investigator Responsibilities, Protection of Human Research Subjects**"
(http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf)

Please note that the UIC IRB has the right to seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact OPRS at (312) 996-1711 or me at (312) 996-9299. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Anna Bernadska, M.A.
IRB Coordinator, IRB # 2
Office for the Protection of Research

APPENDIX A (continued)

Subjects

Enclosure: None

cc: Lorna K. Finnegan, Health Systems Science, M/C 802
Colleen Corte, Faculty Sponsor, Health Systems Science, M/C 802

APPENDIX A (continued)

UNIVERSITY OF ILLINOIS
AT CHICAGO

Office for the Protection of Research Subjects (OPRS)
Office of the Vice Chancellor for Research (MC 672)
203 Administrative Office Building
1737 West Polk Street
Chicago, Illinois 60612-7227

Approval Notice
Amendment to Research Protocol– Expedited Review
UIC Amendment # 4

December 3, 2015

Patcharee Jaigarun, BSN
Health Systems Science
845 S Damen Avenue, Rm 1146
M/C 802
Chicago, IL 60612
Phone: (312) 961-8287 / Fax: (312) 996-8945

RE: Protocol # 2014-1131
"Determining the Drinker Prototype among Thai Adolescents"

Dear Ms. Jaigarun:

Members of Institutional Review Board (IRB) #2 have reviewed this amendment to your research under expedited procedures for minor changes to previously approved research allowed by Federal regulations [45 CFR 46.110(b)(2)]. The amendment to your research was determined to be acceptable and may now be implemented.

Please note the following information about your approved amendment:

Amendment Approval Date: December 2, 2015

Amendment:

Summary: UIC Amendment #4, dated November 19 and received November 20, 2015 is an investigator-initiated amendment about the following:

1) Submission of an award letter to add intramural funding from the UIC College of Nursing in addition to the previously submitted Appendix Z (Letter dated February 20, 2015 signed by Holli DeVon, Chair of the Research Committee).

Sponsor: Seth and Denise Rosen Memorial Research Award, Bevely J. McElmurry Scholarship

PAF#: Not available,Not available

APPENDIX A (continued)

Grant/Contract No: Not available,Not available
Grant/Contract Title: Not available,Not available

Please note the Review History of this submission:

Receipt Date	Submission Type	Review Process	Review Date	Review Action
11/20/2015	Amendment	Expedited	12/02/2015	Approved

Please be sure to:

→ Use your research protocol number (2014-1131) on any documents or correspondence with the IRB concerning your research protocol.

→ Review and comply with all requirements on the enclosure,
"**UIC Investigator Responsibilities, Protection of Human Research Subjects**"
(http://tigger.uic.edu/depts/ovcr/research/protocolreview/irb/policies/0924.pdf)

Please note that the UIC IRB #2 has the right to ask further questions, seek additional information, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact the OPRS at (312) 996-1711 or me at (312) 413-9680. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Jovana Ljuboje
IRB Coordinator, IRB # 2
Office for the Protection of Research Subjects

cc: Colleen Corte, Faculty Sponsor, M/C 802
Lorna K. Finnegan, Health Systems Science, M/C 802

APPENDIX A (continued)

Boromarajonani College of Nursing, Sappasithiprasong, Ubon Ratchathani, Thailand

IRB Letters of Approval

Document Number 3/2015

Approval from the Ethical Review Committee for Research in Human Subjects

Boromarajonani College of Nursing, Sanpasitthiprasong, Ubon Ratchathani, Thailand

Title: Determining the Drinker Prototype among Thai Adolescents

Protocol approval: EC. 3/2015

Investigator: Ms. Patcharee Jaigarun

Committee from the Ethical Review Committee for Research in Human Subjects of Boromarajonani College of Nursing, Sanpasitthiprasong, Ubon Ratchathani, Thailand, considered the research in Thai version. The research was approved by committee from the Ethical Review Committee for Research in Human Subjects of Boromarajonani College of Nursing, Sanpasitthiprasong, based on the research in Thai version. If there is any change or any incidents of the research (clarifying date and year), please report to the Ethical Review Committee for Research in Human Subjects until completing the research.

วิศิษฏ์ สงวนวงศ์วาน, MD

Chairperson of Committee from the Ethical Review Committee for Research in Human Subjects of Boromarajonani College of Nursing, Sanpasitthiprasong.

Apiradee Charoennukul, MSN, RN

Committee and Secretary of the Ethical Review Committee for Research in Human Subjects of Boromarajonani College of Nursing, Sanpasitthiprasong.

Protocol approval period: January 6, 2015 to January 5, 2016

VITA

NAME: Patcharee Jaigarun

EDUCATION: B.S.N., Boromarajonani College of Nursing, Sappasithiprasong, Ubon Ratchathani, Thailand, 1997

M.S.N, Chulalongkorn University, Bangkok, Thailand, 2001

Ph.D., Nursing Science, University of Illinois of Chicago College of Nursing Chicago, Illinois, USA, 2016

TEACHING: Department of Pediatric Nursing, Boromarajonani College of Nursing, Sappasithiprasong, Ubon Ratchathani, Thailand, 1997

HONORS: Royal Thai Government Scholarship, Ministry of Public Health, Thailand, 2011-2016

Lois Widley Student Scholarship for International Nurses Society on Addictions (the 36th Annual Educational Conference), 2012

Virginia M. Ohlson Scholarship Award, College of Nursing, University of Illinois at Chicago, 2013

The Seth & Denise Rosen Graduate Student Research Award, 2015

Beverly J. Mcelmurry Scholarship Award, 2015

PROFESSIONAL MEMBERSHIP: Thailand Nursing Council

Northeastern of Thailand Nursing Council

Pediatric Nurse Society of Thailand

ABSTRACTS: Sangsakul, W., Jaigarun, P., & Siriboonpipatana, P. (2008, November). *Development of teaching and learning model for nursing practicum at Pediatric Intensive Care Unit of Sappasithiprasong Hospital, Ubon Rachathani.* Oral presentation at the Proceeding of International Conference: Health and the Changing World. Bangkok, Thailand

Jaigarun, P., Corte, C., McCreary, L., Finnegan, L. , Hughes, T., & Thorkildsen, T.T. (2016, March). *Reliability and validity of drinker prototype among Thai adolescents.* Poster presented at the 40th Annual Midwest Nursing Research Society, Milwaukee, WI.