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Does the News Shape Our Views? Effects of Media Exposure on Implicit and Explicit Attitudes Toward Drug Addicts in the Philippines

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Abstract

Drug addicts as a stigmatized group became important to study due to the public sentiments, media discourses, and government actions they have stirred within the country. This research explored how information received through broadcast media (i.e. through priming) influences attitudes toward drug addicts. In this research, priming was accomplished through the exposure of the research participants to media stimuli on drug addicts. Through a 2×3 mixed design experiment, participants' perceptions of drug addicts were measured using an explicit attitude scale and implicit attitudes measurement using the Single Target-Implicit Association Test (ST-IAT). The baseline explicit and implicit attitudes were initially measured, then re-measured after each presentation of a news report about drug addicts who have either recovered from their condition or committed a heinous crime (within-subjects). Order effects on ST-IAT scores were also accounted for by counterbalancing the order of primes presented (between-subjects). Results showed that the order of prime presentation did not result in significant differences in change of attitude. Furthermore, recovery (positive) primes result in less negative to neutral but not positive attitudes, whereas criminal (negative) primes simply return participants to almost baseline negative attitudes. Therefore, although media representations can influence public attitudes toward drug addicts, such effects are nuanced and crucially dependent on the features of media information, what representations or attributes are made salient, and what domain of attitudes is being investigated.

KEYWORDS

implicit attitudes
drug addicts
priming
media effects

Introduction

In 2016, the Philippines saw the election of a new President and, along with it, a new administration replete with its own campaigns and controversies. Political analysts in the country argue that President Rodrigo Duterte's main claim to winning the election was his unequivocal stance against the illegal drug trade in the country (Worley, 2016). Among his many tirades, he has promised the imprisonment of drug lords, cleansing of drug-stricken communities, and (infamously) the elimination of drug addicts in

the country (Iyengar, 2016).

Drug use has always been perceived negatively, with drug users at the receiving end of negative reactions from the public and often treated as a stigmatized group (Cunanan & Yabut, 2019; Gershman, 2016; Kenari et al., 2019; Mora-Rios et al., 2016; Ronzani et al., 2009; Singleton, 2011). Substance users were already looked upon with more prejudice than individuals with leprosy, obesity, depression, and schizophrenia (Ronzani et al., 2009), and they are subject to judgment, mockery, inappropriate comments, over-protection, and other forms of hostile interaction (Mora-Ríos et al., 2016). The public then perceived drug dependence as a socio-political and crime-inducing predicament rather than a chronic mental health condition (McLellan et al., 2000). Even health professionals can hold negative perceptions toward patients using substances, believing them to be dangerous, violent, manipulative, irresponsible, aggressive, rude, and lazy (Ford, 2011).

Furthermore, perhaps as a function of the prominence of President Duterte's declarations in mass media, the discourse on social media regarding drug addicts had been very much rampant, especially during the height of the Philippines' drug war, with mixed sentiments of support and condemnation of the war on drugs (e.g. New York Times News Service, 2016). As such, based on the information that people selectively receive and process from both mass and social media, the attitudes that people come to accept are informed not only by their sentiments and beliefs but also how the discourse on drug addicts transpires on these far-reaching platforms (Lancaster et al., 2011). Given these circumstances, the current study is relevant to the Philippine's political context.

According to the Philippine Drug Enforcement Agency (PDEA) and the Dangerous Drugs Board (DDB), the number of drug users in the Philippines is between 1.8 and 4.7 million (Cabrera, 2017). As of 2020, the UN Human Rights Council pegged the death rate at 8000 while #RealNumbersPH pegged the death through police killings at 5,856 (Robertson, 2020). Therefore, with the high number of reported drug users in the country, the study of prejudice and attitudes concerning them is deemed important, especially in the time of President Duterte's "War on Drugs". Indeed, studies on attitudes and prejudice have typically focused on other stigmatized groups and discriminated minorities—for instance, based on age, ethnicity, or sex (Greenwald & Banaji, 1995). However, given the Philippines' unique context and the lack of literature surrounding drug dependents' experience of stigma (Cunanan & Yabut, 2019), drug addicts as a stigmatized group then become important to study due to the attitudes, arguments, and public policy that have stirred around them within Philippine society (Bueza, 2017; Labor & Gastardo-Conaco, 2017).

Measuring Implicit and Explicit Attitudes

Attitudes research typically distinguishes between explicit versus implicit attitudes, which are evaluations of a target object that a person is conscious versus unaware of, respectively (Cooper et al., 2015). Explicit attitude statements include ratings of agreement or disagreement to statements such as, "How much would you like a person if you know they are a drug addict?" and "How much would you trust a person if you know they are a drug addict?". In contrast, most implicit attitude measures (like the Single Target-Implicit Association Test or ST-IAT) are based on reaction times to ostensibly unrelated positive (e.g., wonderful, peace, health) and negative words (e.g., death, evil, disgusting) in association with stimuli related to the attitude target. Essentially, the ST-IAT elicits implicit attitudes such as biases and prejudices over which individuals do not have conscious recollection or awareness, while explicit measures ask respondents to reveal their opinions willfully yet subject to how much or how honestly they can report these sentiments (Hoewe, 2020; Charlesworth & Banaji, 2019; Yen et al., 2018). In this case, the ST-IAT is useful as a measure of implicit drug addict-related attitudes. As opposed to the original IAT (Greenwald et al., 1998), which requires judgments of two opposing categories (e.g. male-female, rich-poor), the ST-IAT requires participants to make categorizations for only one target. This configuration is necessary for the current study since drug addicts do not have a comparable evaluative target, such that attitudes related to them are better studied individually (Bluemke & Friese, 2008). The use of both implicit and explicit attitude measures then allows researchers to examine whether respondents hold constant opinions when considering their conscious versus more automatic sentiments.

Methodologically, research in other countries on attitudes and attitude change toward drug users have greatly benefited from the use of novel priming methods (Sherman et al., 2003, in the context of smoking which is also a form of addiction) and the IAT (von Hippel et al., 2008), where health practitioners were made aware of their implicit (i.e. unconscious) attitudes towards their clients. Studies on implicit attitudes toward drug addicts revealed how such attitudes affected the job satisfaction and quality of work of health practitioners directly involved in rehabilitation (Marhe et al., 2012; von Hippel et al., 2008; Zogmaister et al., 2013). Previous studies also show the possibility of sex-based differences in drug-related attitudes in changing the quality of work of health practitioners towards their patients. Men are more tolerant of illicit drug use and have more positive attitudes toward drug addicts, insofar as explicit measures are used (Kauffman et al., 1997; Sungu, 2015).

Moreover, considering that drug addiction is currently a sensitive issue in the Philippines, it is expected that people would report explicit (i.e. conscious) sentiments that differ greatly from their implicit attitudes (Fazio, 1990). Although surveys of explicit attitudes regarding drug-related issues have been fielded in the past (e.g. Labor & Gastardo-Conaco, 2017; Social Weather Stations, 2017), no studies using the ST-IAT or any other implicit measure have been conducted in the Philippines. This gap in the literature and the political context surrounding drug-related attitudes then point to the possible applicability of implicit measures like the ST-IAT in local attitude measurement.

Media and Public Opinion

In theories of communication, media can influence public opinion by setting the agenda of what audiences would find important, by priming the standards through which people judge and discern social issues, or by framing how information should be understood and interpreted (Scheufele & Tewksbury, 2007; Hoewe, 2020). Particularly, media priming works through the selective activation of features of the target (whether positive or negative) which then significantly influences implicit and explicit attitudes (Sherman et al., 2003). Furthermore, selectively activating positive or negative attributes of political agents or issues has similar effects on political decision making (Lee & Min, 2020). In essence, media primes become powerful heuristics for people to make judgments.

With the media priming context in mind, the study utilized traditional attitude measures alongside the ST-IAT to respectively measure the explicit and implicit attitudes of people towards drug addicts, with both types of attitudes possibly having both positive and negative evaluative components. Indeed, despite focusing on the same target, people may show different attitudes reflecting different valences and perceptions depending on which features of the stimuli are made salient. Although the target of categorization in the current experiment always refers to "drug addicts," the content of the media primes themselves can potentially change the implicit attitude measured depending on the valence of the exemplar of the target (Dasgupta & Greenwald, 2001). Similarly, although the effects of media priming have been established, the mechanisms through which it takes effect is not much understood (Roskos-Ewoldsen et al., 2002). An exploration into the effects of media on implicit attitudes in particular can then contribute to an understanding of these mechanisms.

In line with these gaps in the literature, we investigated whether media portrayals (positive or negative) of drug addicts affect people's social attitudes toward them. We explored how information received through broadcast media and other sources influence attitudes on drug addicts as measured through both implicit and explicit measures of attitudes and cognition. Specifically, this study 1) measured the subjects' baseline attitudes toward drug addicts with the use of implicit and explicit measures; 2) examined whether the valence of media stimuli (whether positive or negative) affects attitude towards drug addicts; 3) compared the implicit and explicit attitudes of the subjects toward drug addicts; and 4) evaluated whether there are sex differences in explicit and implicit attitudes towards drug addicts.

Following the literature review above, we hypothesize that media priming, depending on the nature of its content, would shift social attitudes toward drug addicts in the direction of the prime. In particular, a negative prime (a drug addict committing a crime) would

result in ST-IAT scores indicating more negative attitudes towards drug addicts relative to the baseline, while a positive prime (a recovering drug addict) would lead to more positive attitudes. These implicit attitudes measured using the ST-IAT are then compared against the participants' more explicit (i.e. conscious) attitudes to determine how both of them change before and after exposure to the media stimuli. Moreover, given the sensitivity of drug addiction as a social issue, the explicit measures would reveal negative attitudes toward drug addicts (as facilitated by the tolerance for such attitudes in current discourses) yet diverge from (or fail to correlate with) the scores obtained from the implicit measures. Finally, due to the possibility of sex differences, males would have more positive attitudes toward drug addicts than females.

Ultimately, this study examines implicit and explicit drug-related attitudes in the Philippines as primed by media exposure, particularly in the locally underexplored domain of implicit attitude measurement. Particularly, both traditional attitude measures and the ST-IAT provide a means for comparing and validating the discrepancy between reported implicit and explicit attitudes, as the respondents can consciously manipulate explicit attitudes. In contrast implicit attitudes are more unconscious and thus measured instead through automatic responses provided in the ST-IAT.

Methodology

Experimental Design

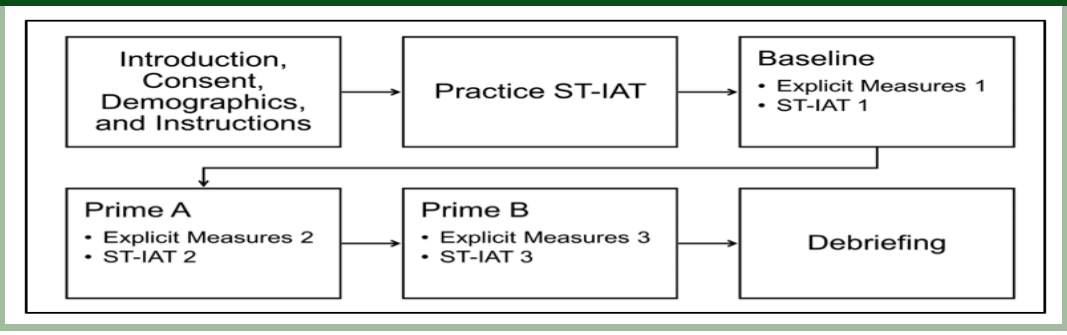
The experiment followed a 2 (Priming order: BPN, BNP) × 3 (Priming: baseline, positive, negative) mixed design, with the order of prime presentation as the between-subjects factor and priming as the within-subjects factor. In the pre-priming (baseline) phase, the ST-IAT and corresponding explicit measures were administered to participants to assess their baseline attitudes. They were then presented two sets of primes in between repeated administrations of the implicit and explicit measures with the order of the primes presented counterbalanced across participants. The dependent measures were the implicit and explicit attitudes of the participants, as measured through the survey responses and ST-IAT reaction times. The study's overall design is summarized in Figure 1 and explained further in the Procedure section below.

Participants

Sixty-three undergraduate students aged 18 to 21 years old (46 females, M_{age} = 19) enrolled in an introductory social psychology course participated in the experiment in exchange for partial course credit. Data for 13 participants were not included in the analyses due to missing or incomplete responses while another 10 were eliminated following the data preparation procedure for the ST-IATs. The final data set included 40

Figure 1

Experimental Procedure



Note: For each of the Baseline, Prime A, and Prime B phases, participants always answered the explicit measures first followed by the ST-IAT. The valence of the prime given in the Prime A and Prime B phases depended on their condition (BPN or BNP; see Procedure)

participants, 20 each in the baseline-positive-negative (BPN: 11 females) and baseline-negative-positive (BNP: 16 females) conditions.

Measures and Instruments

Explicit Measures

The affective, cognitive, and behavioral aspects of attitudes toward drug addicts were measured through a set of short measures. For the affective (prejudice) component, two feeling thermometers were used for each aspect of preference ("How much would you like a person if you knew they were/are a drug addict?") and reliability ("How much would you trust a person if you knew they were/are a drug addict?"). Both are scaled from 0 (dislike/distrust completely) to 100 (like/trust completely), for a maximum score of 200 in this domain. For cognition, five items were selected from the survey used by Bryan et al. (2000) in their national survey of drug-related knowledge, attitudes, and beliefs in Ireland. Examples of item statements are "Almost all drug addicts are dangerous" and "I would see drug addicts more as victims than criminals." These items concern the perception of drug addicts as victims or criminals, the amount of consumption required to become addicted to a drug, who is to blame for addiction, how strict penal sentences must be for drug addicts, how accessible addiction treatment must be, and how dangerous drug addicts are. These items are scaled from 1 (very much disagree) to 6 (very much agree), with some items reverse scored (to prevent response sets) such that higher scores translate to more positive attitudes, for a maximum score of 36 on this scale. Finally, the discrimination component was assessed using the Bogardus (1933) social distance scale ["Would you accept someone who was/is a drug addict as (a) a part of the family by marriage, (b) a close friend, (c) a classmate or co-worker, (d) a neighbor, or (e) a citizen of the Philippines]. A maximum of six points was given for agreeing with response (a), and one point when none of the five options had been selected. An overall measure of explicit attitudes was constructed by summing the scores across three subscales for a maximum score of 242.

Implicit Measures and Stimuli

Stimuli Pre-test. For the ST-IAT, the target is labeled as "drug addict", while the attribute dimension is positive-negative. The attribute adjectives were derived from the lists given by Greenwald et al. (1998) and Karpinski and Steinman (2006) but chosen to be more representative of drug addicts (e.g. positive: hope, negative: unclean). Target images of drug addicts were derived from the archives of multiple news agencies (e.g. news reports, the advertisements released by the government in 2016 to bolster its war on drugs; Domingo, 2016). The priming media used were one-minute and three-minute news reports of ABS-CBN (2014) and GMA News (2016) involving drug addicts. In the "negative" prime, the drug addict is depicted as a suspect who committed a crime (a saleslady held hostage by a man under the influence of and addicted to drugs; i.e. a "criminal" prime). On the other hand, the "positive" prime depicts them as victims of their condition and capable of change to become good members of society (a former drug addict who recovered from his condition and is now a successful businessman; i.e. a "victim" prime).

The preliminary lists of attribute words, target pictures (public online images), and priming videos to be used in the ST-IAT were then given to 30 college and postgraduate students (17 females, M_{age} = 23; separate from the participants in the actual study) who were tasked to rate the stimuli based on criteria most appropriate for each of the three. Specifically, they were asked to rate the 20 words from each positive and negative attribute dimension (40 in all, with the order of words reversed in two sets of surveys) on two 7-point scales of preference (from dislike very much to like very much) and familiarity (from not familiar at all to very familiar). The final list of 20 words (10 from each attribute dimension) had a liking score of $M > 6.27$ for positive words and $M < 2.13$ for negative words, with all words considered to be familiar, $M > 5.70$ (i.e. frequently used or encountered in speech or written forms). As informed by the pretest results, the final ten positive words used were brilliant, smiling, freedom, joy, truth, wonderful, health, paradise, peace, and loyal. The final ten negative words used were brutal, kill, death, evil, prison, dirty, tragic, sickness, failure, and disgusting.

The initial pool of seven target pictures (public online images) was reduced to the final three used in the study, with their minimum aesthetic preference rating (e.g. clarity of image) $M > 3.10$

(7-point scale, from dislike very much to like very much), and representativeness at $M > 4.83$ (7-point scale, from not like drug addicts at all to very much like drug addicts). Finally, the criminal and victim prime videos were assessed based on their relevance to drug addicts (7-point scale, from dislike very much to like very much), perception of being good or bad news (7-point scale, from very bad news to very good news), and the emotion they elicited from the respondent (choosing two emotions from the choices happy, annoyed, sad, afraid, amused, angry, and inspired). The negative prime was rated as very related (M = 6.03), reported bad news (M = 2.07), and elicited fear (30%) and sadness (28.33%) most, which are both negative emotions. Meanwhile, the positive prime was deemed as very related (M = 6.23), reflected good news (M = 6.20), and resulted in positive emotions such as inspiration (40%) and happiness (36.67%).

ST-IAT Administration. The ST-IAT was administered using desktop computers through the Inquisit 3.0 software designed for implicit attitude measurement. Negative responses are mapped on the "E" key (left) and positive responses on the "I" key (right). Figure 2 shows examples of the screens presented to participants.

Each of the three ST-IATs answered by the participants had three phases:

1. an attribute discrimination task where they categorized the 20 words as positive (right key) or negative (left key);

2. a drug addict-positive (DA+) block where participants pressed the right key for positive words and pictures of drug addicts and the left key for negative words; and

3. a drug addict-negative (DA–) block where participants pressed the right key for positive words and the left key for negative words and pictures of drug addicts.

More specific details about the ST-IAT (e.g. determination of the number of trials, programming, differentiation of practice versus test blocks) are provided by Bluemke and Friese (2008). Meanwhile, clarifications about procedural effects (e.g. order and counterbalancing of DA+ and DA– blocks, scoring procedures) are discussed extensively in the originating papers of the IAT and ST-IAT methods (Dijkterhuis, 2004; Friese et al., 2007; Greenwald et al., 1998).

Figure 2

Examples of ST-IAT Screens in the Study

Note: Words at the top of each panel remind participants whether to press the left or right key. Some ST-IAT trials display one of the 20 attribute words, while others show one of the three drug addict stimuli. The text at the bottom is an annotation that indicates which block the panel belongs to and is not presented to participants. The background has been rendered in white for clarity, but the original screen is in black as programmed.

Demographic Information

In addition to the implicit and explicit measures, participants were also asked to supply information regarding their age, sex, and place of origin (i.e. Luzon, Visayas, Mindanao, or others). The subject variable sex was used as an independent variable for a secondary analysis of its effects on implicit and explicit attitudes.

Procedure

Participants were informed of the tasks they will be performing, the information that will be collected from them, and the absence of any foreseeable risk should they agree to participate before being asked to sign a consent form. Once they have agreed to participate, participants were given the demographic survey to record relevant subject characteristics. Given the unfamiliar nature of the ST-IAT, participants were first given a trial ST-IAT with flowers (neutral stimuli not related to drug addicts) as the target so they can practice how to respond to the task. Afterwards, to measure their baseline attitudes, the participants were then given the explicit attitude measure questionnaire, followed by the first ST-IAT. To some extent, the participants do have conscious knowledge that the study would involve measuring their attitudes toward drug addicts, but not that their attitudes would be susceptible to change due to priming. In this case, presenting the explicit measures prior to the ST-IATs posed no threat in influencing the outcomes of the implicit measure. Nonetheless, in their meta-analysis, Hoffman et al. (2005) did not find any effects of administering the explicit measure first on the validity of the implicit measure which followed it.

After completing the baseline measures, subjects watched the first prime ("victim" prime in the BPN condition, "criminal" prime in the BNP condition) followed by the administration of the corresponding explicit and implicit measures. This process of watching the prime then completing the measures was repeated for the second prime ("criminal" prime in the BPN condition, "victim" prime in the "BNP" condition). At the end of their participation, the subjects were completely debriefed regarding the purposes and hypotheses of the study, asked if they had any questions, informed of the means to communicate with the researchers should they have any concerns in the future, and, finally, thanked for their participation.

Preparation of ST-IAT Data

The data collected were prepared for analysis following the procedure discussed by Bluemke and Friese (2008), which is based on Greenwald et al. (2003) revised algorithm for analyzing IAT data. The fundamental unit of analysis in ST-IAT data is response latency or how long it takes for the participant to press either the left (negative) or right (positive) key after being presented with an attribute word or the drug target image stimulus. Furthermore, instead of eliminating the trials where participants committed errors (as is the typical practice in IAT analysis), the trials themselves are retained while their latencies are replaced by the subject's mean latency across all test trials with an additional 400ms penalty (similar to the procedure by Karpinski & Steinman, 2006). This alteration in the procedure is made necessary because retaining and penalizing error trials results in greater implicit-explicit measure correlation, and is generally favored methodologically as opposed to deleting such trials altogether (Greenwald et al., 2003). Nonetheless, participants who made errors on more than 15% (or 14 out of 96) of the test trials attained a standard deviation (SD) greater than 400ms on any ST-IAT, or incurred a difference greater than 100ms between any of the SDs of the ST-IATs were excluded from the analysis. Only the 40 participants who met the requirements for the ST-IAT analysis were also included in the analysis of the explicit measures.

Statistical Analysis Method

Following the procedure discussed above, the raw response latency scores from the ST-IATs were transformed into D scores (equal to the mean latency from the DA– block minus the mean latency from the DA+ block, divided by the SD from all blocks), where negative values reflect negative attitudes against drug addicts. This interpretation is because negative attitudes would lead participants to more easily categorize drug addict stimuli with negative words as opposed to positive words, thus making them respond faster (i.e. have a lower mean latency) in DA– than DA+ blocks.

The primary analysis aimed to find differences (through a mixed design ANOVA following the experimental design) among the groups and treatments based on the primes given and the order of their presentation. Secondary analyses focused only on either the drug addict-negative (DA–) or drug addict-positive (DA+) standardized response latencies (block mean divided by overall SD) to explore how the primes specifically inhibited or facilitated positive and negative associations with drug addicts. Similarly, the primary analysis for the overall explicit measure aimed to explore differences based on prime content and order. On the other hand, secondary analyses used the affective, cognitive, and behavioral components to detect where the experimental intervention may have influenced specific aspects of stereotype and prejudice. Sex differences were then considered separately as another between-subjects variable given previous studies, suggesting its possible influence on drug-related attitudes (Kauffman et al., 1997). The overall explicit scale and ST-IAT scores, along with their components, were then correlated with each other across all priming sessions, trials, and order of presentation to investigate the extent to which implicit and explicit measures correlate with each other.

Results

Implicit and Explicit Measures

Overall Attitudes

Table 1 shows that both the implicit and explicit attitudes (in their entirety or by their components) of the participants across all conditions generally presented a negative to neutral attitude toward drug addicts. These are evidenced by the anchors for the ST-IAT *D* score (neutral until ± 0.15, slight until ± 0.35; Sriram & Greenwald, 2009) or the midpoint of the explicit scales (overall = 121, affect = 100, cognition = 18, behavior = 3).

Furthermore, Table 2 demonstrates that the overall measures of implicit and explicit attitudes failed to correlate significantly with each other, either within or between priming conditions.

Considering the overall ST-IAT *D* scores (i.e. the implicit measure), a 2 × 3 ANOVA with an order of prime presentation as the between-subjects factor and prime content as the within-subjects factor revealed no significant

Table 1

Mean ST-IAT (D Scores) and Explicit Measure Scores

	BPN					BNP				
	ST-IAT	Ex-O	Ex-A	Ex-C	Ex-B	ST-IAT	Ex-O	Ex-A	Ex-C	Ex-B
Baseline	–0.293	74.15	47.90	22.15	4.10	–0.137	78.30	51.55	22.45	4.30
Positive Prime	–0.059	80.10	54.15	21.80	4.15	–0.003	92.30	64.50	23.25	4.55
Negative Prime	-0.182	81.60	55.85	21.95	3.80	0.075	71.90	46.00	22.10	3.80

Note: Ex = Explicit, O = Overall, A= Affect, C = Cognition, B = Behavior

Table 2

Correlations of Overall Implicit and Explicit Measures Across Priming Order and Prime

Explicit	Implicit		
	Baseline	Positive Prime	Negative Prime
Baseline	0.290	0.079	0.128
Positive Prime		–0.190	0.154
Negative Prime			–0.019

Note: The table reports Pearson *r* correlation coefficients. All $p > .05$.

main effect of order, $F(1, 38) = 3.27$, $p = 0.078$, $\eta p^2 = 0.079$, but a significant effect of prime, $F(2, 76) = 4.02$, $p = 0.022$, $\eta p^2 = 0.096$, which are not qualified by an interaction, $F(2, 76) = 1.01$, $p = 0.368$, $\eta p^2 = 0.026$ (Figure 3). In other words, participants' attitudes were not significantly influenced by the order in which the primes were presented or its interaction with the primes themselves.

Figure 4 demonstrates a similar analysis done on the overall explicit measure scores which revealed non-significant main effects of order, $F(1, 38) = 0.04$, $p = 0.852$, $\eta p^2 = 0.001$, and prime, $F(2, 76) = 1.97$, $p = 0.146$, $\eta p^2 = 0.049$, which are also not qualified by an interaction, $F(2, 76) = 1.92$, $p = 0.154$, $\eta p^2 = 0.048$. Secondary analyses conducted in the same manner for the components of the implicit (DA– and DA+ responses) and explicit measures (affective, cognitive, and behavioral subscales) returned no significant results for any main effect of order and prime or their interaction (all $Fs < 2.46$, $ps > .093$, $\eta p^2 < 0.061$). Overall, no significant differences were found between the groups when comparing the BPN and BNP participants' scores against each other for the baseline, positive, or negative primes whether for the implicit (all $Fs < 21.55$, $ps > .220$, $\eta p^2 < 0.039$) or explicit measures (all $Fs < 0.69$, $ps > .411$, $\eta p^2 < 0.018$), except for a significant difference in D scores in the negative prime condition, $F(1, 38) = 5.49$, $p = 0.024$, $\eta p^2 = 0.126$. Simply put, explicit attitudes were not significantly influenced by either the prime or their order of presentation. One exception to this is that during the negative prime condition, BNP participants had significantly more positive *D* scores (yet still negative attitudes) than the BPN group. As can be seen in Table 1, the mean *D* score of the BPN participants in the "criminal" prime condition is negative (interpreted as slightly negative implicit attitudes at –0.182) compared to the slightly positive value of the BNP condition (interpreted as neutral implicit attitudes at 0.075).

Auxiliary Analyses

To identify where the significant effects (or lack thereof) of priming and order are originating, we conducted follow-up analyses. Generally, all pairwise contrast analyses between the three priming conditions, across all order of presentations (or taking BPN and BNP individually), and analyzing either implicit or

Figure 3

Overall D Scores for ST-IAT

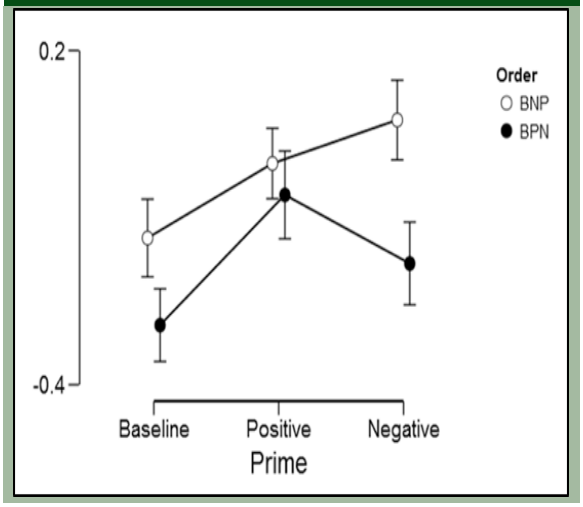
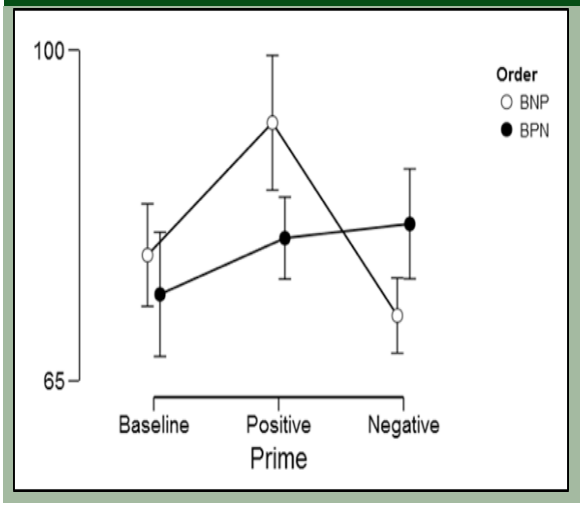


Figure 4

Overall Scores for the Overall Explicit Measure



explicit measure scores (in their entirety or their components) return mostly non-significant results (all $Fs < 2.18$, $ps > .157$, $\eta p^2 < 0.102$). Only a few comparisons were completely or marginally significant. BPN participants had more positive implicit attitudes toward drug addicts after being shown a positive prime relative to their baseline, $F(1, 19) = 5.32$, $p = 0.033$, $\eta p^2 = 0.219$. Similarly, BNP participants had marginally more positive implicit attitudes toward drug addicts after the negative prime when considering both their overall *D* score, $F(1, 19) = 4.21$, $p = 0.054$, $\eta p^2 = 0.181$, and their DA+ responses,

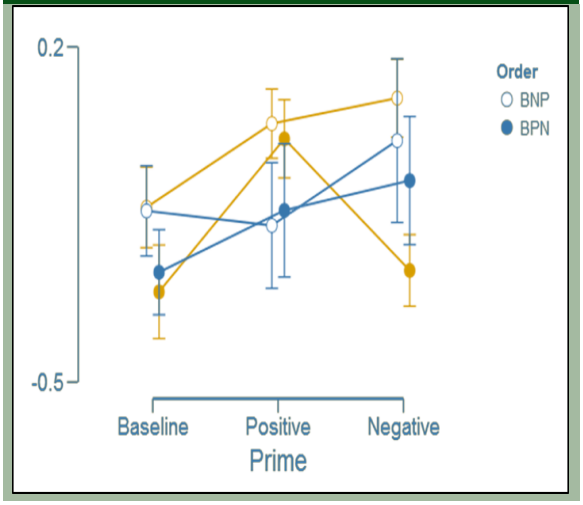
$F(1, 19) = 4.33$, $p = 0.051$, $\eta p^2 = 0.186$, relative to their baselines. Moreover, BNP participants had significantly higher scores after a positive prime against after a negative prime considering their overall explicit attitudes, $F(1, 19) = 6.02$, $p = 0.024$, $\eta p^2 = 0.241$, and specifically this measure's affective, $F(1, 19) = 5.03$, $p = 0.037$, $\eta p^2 = 0.209$, cognitive, $F(1, 19) = 6.09$, $p = 0.023$, $\eta p^2 = 0.243$, and behavioral components, $F(1, 19) = 65.38$, $p = 0.032$, $\eta p^2 = 0.221$. Essentially, the "victim" prime had minor effects in terms of making the BPN group's implicit attitudes and the BNP group's explicit attitudes just less negative than their baseline. Similarly, after the "criminal" prime, the BNP group demonstrated slightly less negative implicit attitudes as compared to their original scores.

Sex Differences

Implicit and explicit attitudes towards drug addicts were also investigated along the line of sex differences. Figure 5 illustrates the changes in implicit attitudes based on overall *D* scores, and Figure 6 shows explicit attitudes towards drug addicts. After including participant sex in the analysis, all main effects of prime, order, and gender, or their interactions become non-significant whether for the overall implicit measure D score (all Fs < 2.33, ps > .104,ηp^2 < 0.061), or only the DA– (all Fs < 1.27, ps > .286, ηp^2 < 0.034) or DA+ responses (all Fs < 1.35, ps > .265, ηp^2 < 0.036). Accounting for sex diminishes the meager effects found in the earlier analyses where this factor was omitted.

Figure 5

Overall D Scores for ST-IAT, Including Sex as a Factor

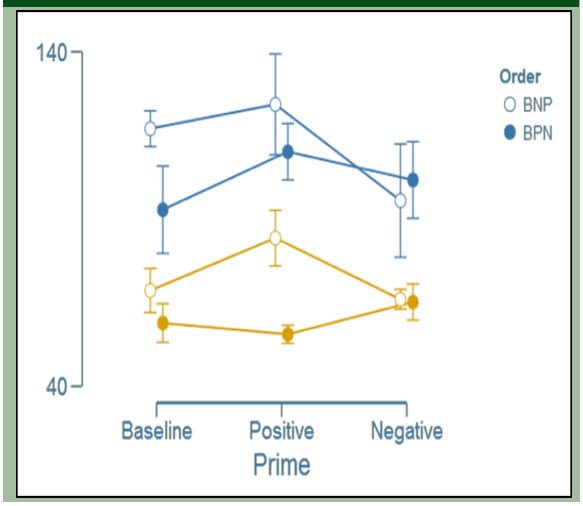


Note: Blue indicates scores of male participants and yellow for female participants.

Figure 6 shows that a similar analysis done on the explicit measure data returned non-significant results for the main and interaction effects of prime and order, whether for the overall measure or its components (all *Fs* < 2.25, *ps* > .113, ηp^2 < 0.059), with only sex differences (i.e. males having more positive attitudes than females) being significant for the overall explicit measure, $F(1, 36) = 11.69$, $p = 0.002$, $\eta p^2 = 0.245$, or its affective, $F(1, 36) = 10.74$, $p = 0.002$, $\eta p^2 = 0.230$, and cognitive, $F(1, 36) = 8.98$, $p = 0.005$, $\eta p^2 = 0.200$, but not its behavioral sub-scale, $F(1, 36) = 0.490$, $p = 0.488$, $\eta p^2 = 0.013$.

Figure 6

Overall Scores for the Explicit Measure, Including Sex as a Factor



Note: Blue indicates scores of male participants and yellow for female participants.

Discussion

At the beginning of the study, we hypothesized that exposure to positive or negative depictions of drug addicts on media would result in changes in implicit and explicit attitudes consistent with the valence of the stimulus, with men having more positive attitudes than women. Taking our results together, we find limited support for some aspects of these hypotheses. Generally, participants show slightly negative baseline implicit and

explicit attitudes against drug addicts, which become less negative to neutral (i.e. never positive) due to the positive prime. The same trend is observed for the explicit measure, except for its cognitive and behavioral sub-scales, where participants begin with a slightly more positive attitude. Moreover, the priming effects appear to be restricted to the variation in attitude change facilitated by positive primes, especially for the explicit measures. In other words, the "victim" prime promoted a shift toward less negative attitudes toward drug addicts, whereas the negative primes merely returned participants to their baseline. Given the sensitivity of issues regarding drug addicts in the Philippines and the increase in the salience of this controversy after the positive prime, it was not surprising for more pro-drug addict attitudes to follow—or even for negative attitudes to be manifested after being validated by the negative prime (Fazio, 1990).

There are many possible reasons for this study not finding conclusive results. The first set of reasons concerns the primes we used in the study and what aspects of participants' attitudes they influenced. Considering the DA– and DA+ standardized latencies, the participants' attitude shift toward a slightly more positive perspective of drug addicts is caused more by the facilitation (i.e. faster responses) of drug addict-positive associations after a "victim" prime rather than the promotion of drug addict-negative associations after a "criminal" prime (Table 3). In other words, DA+ responses tend to show greater variability following the primes, as opposed to DA– latencies. This trend follows the results of Blair et al.'s (2001) research. In this study, participants were made to create a mental image of either a neutral stereotypic (e.g., feminine), stereotypically weak (e.g., unconfident), or counter-stereotypical strong woman (e.g. brave) prior to answering the IAT. They found that while response latencies in the consistent block (i.e. female-weak) did not differ significantly between groups, participants primed with counter-stereotypical woman imagery tended to associate females with strong significantly faster than other groups in the inconsistent block of the test. As such, observed positive implicit attitudes arise from the facilitation of counter-stereotypical responses (i.e. drug addict-positive, female-strong), or making the positive features of the target more salient (Sherman et al., 2003).

In the same way, the differences between our experimental design and Blair et al.'s (2001) research may explain our inability to find more definitive results. Essentially, the latter's prime involves subjects more as they have to make their own imagery, retrieve counter-stereotypical knowledge, reconstruct their representations about women, and retain its accessibility when answering the IAT. In contrast, our research made participants passively take in counter-stereotypical information about drug addicts. Between the time when the video was being played to the instance of their completion of the ST-IAT, participants may not have paid attention to (e.g. due to fatigue, lack of interest, momentary lapses) or rejected the contents of the prime (e.g. "Not all drug addicts are capable of change; some of them are criminals"). As such, our intention to use news reports as primes to selectively activate specific perspectives about drug addicts may not have provided a robust mental representation to influence implicit and pre-existing attitudes consistently. In contrast to our multifaceted video primes (i.e. featuring more than just drug addict exemplars), Dasgupta and Greenwald's (2001) use of well-known counter-

Table 3

Mean Standardized Response Latencies for DA- and DA+ Responses

	BPN		BNP	
	DA–	DA+	DA–	DA+
Baseline	2.770	3.063	2.765	2.902
Positive Prime	2.810	2.869	2.864	2.867
Negative Prime	2.860	3.042	2.751	2.676

Note: Smaller numbers indicate shorter response latencies (i.e. faster response times), signifying easier categorization of drug addicts with positive words for DA+ and negative words for DA–.

stereotypical exemplars served as unambiguous targets that elicited strongly positive affect and evaluations, in the same way that self-created mental imageries focused specifically on the intended target (Blair et al., 2001).

Indeed, many possible construals of drug addicts (or any stigmatized group, for that matter) exist. The depiction in the news report prime that this study chose is just one of them. It might be the case that not all participants shared and came to accept the perspective the researchers intended (Scheufele & Tewksbury, 2007). Essentially, attitude change using broadcast media may not necessarily be observed after one set of priming and measurements and instead is developed across repeated exposures (Domke et al., 1998). Many individual cognitive factors, as well as ego involvement, attitude discrepancy, the advocated message, and attitude embeddedness, intervene in the change and persistence of attitudes among the participants (Sherif & Markley, 1972; Eagly & Chaiken, 1993), especially since they were not accounted for in the experimental design (Scott, 1968; Sherif & Markley, 1972). Attitudes do not exist in a vacuum and are not formed or changed easily, especially when the primes chosen are not sufficiently potent such that pre-existing attitudes based on alternative media depictions become more influential in influencing responses to implicit measures than the prime selected should do (Yan & Liu, 2016).

Another set of explanations concerns the nature of the method and experimental design itself. One issue is that the sample size may not be sufficient to compensate for the great variability in responses observed for the participants, particularly when considering the DA– and DA+ responses separately. Although assumptions of variance homogeneity and sphericity have been met, the great variance observed sufficiently obscured any effects that the experimental interventions may have contributed (Keppel & Wickens, 2004). Furthermore, the ST-IAT, in its own right and through the current manner of administration, could have contributed to the great variance observed. The need for accuracy while maintaining speed results in the inevitability of error which ultimately affects response latencies (or statistically, the inclusion of subjects in data analysis).

At the same time, the experimental design maximizes fatigue effects. Each ST-IAT test takes approximately 10 minutes to complete, which is given to the subjects in this experiment three times, after each set of primes and explicit measures, which take 5 minutes on their own. Because one of the goals of the current research is to demonstrate the feasibility and applicability of the ST-IAT as a method for attitude measurement in the Philippines, it is important for researchers who would employ this measure in their own studies to also consider these extraneous effects which are inherent in the method. Indeed, despite Greenwald et al.'s (2009) observation that IAT studies with a small sample sizes nonetheless result in reasonably sizable effects, it is still advisable to increase the sample if only to account for these factors.

Furthermore, the study can be criticized because the experimental design does not control for practice effects where research participants demonstrate faster response latencies in later tests not due to priming effects but because of mere familiarity with the ST-IAT. Counter to this issue, Greenwald et al. (2003) observed that repeated exposure to the IAT (and perhaps, its derivative tests as the ST-IAT) was not detrimental to the predictive validity or reliability of the measure. Similarly, Friese and colleagues (Bluemke & Friese, 2008; Friese et al., 2007) consistently found across their studies that the order in which ST-IATs administered in close succession (in their case, each one with a different target) does not significantly bias the results of any of the implicit measures. Although our study's design made participants susceptible instead to the carryover effects of primes presented one after the other, these previous studies demonstrate how considerations about repeated exposure and order-based practice effects do not necessarily become a concern in the current research.

Furthermore, practice effects should result in faster response times across DA– and DA+ responses and positive and negative priming conditions. As opposed to this, our results show that (1) there are no significant differences in *D* scores between the positive and negative conditions, (2) BPN participants have relatively more positive and negative attitudes respectively after a victim, and criminal prime (i.e. as hypothesized), and (3) the priming has a non-significant yet nonetheless selective effect on DA+

responses whereas DA– responses manifest greater variability and less differentiation. Moreover, the acceleration of DA+ responses from the BNP subjects is unsystematic. Response latencies are faster after the negative prime, which was presented second, followed by slower responses in the third and positive prime. The best explanation that can be offered is to attribute the anomalous variance to the faster mean DA+ latencies of the BNP participants after being presented with a negative prime. Overall, the participants' attitudes in the BNP group were more positive (albeit non-significant) than those of the BPN condition, with such intergroup differences retained across primes (although similarly non-significant). Indeed, considering the results of all the primary and secondary analyses together, most of the findings deemed statistically significant come from the inter-condition differences observed from the BNP group's data.

Turning to the explicit measures, although the overall measure revealed that participants held mostly negative views about drug addicts, the measure's subscales reflect a more nuanced set of attitudes. An example would include the attitude that people dislike and distrust drug addicts but view them as victims of their condition and thus deserve treatment as long as they stay away from close relationships and familial ties (Labor & Gastardo-Conaco, 2017). This divergence in affective, cognitive, and behavioral evaluations was evident at baseline and carried over consistently across the two priming conditions. Such findings are consistent with other national surveys in Ireland and in the United Kingdom on attitudes toward drug-related issues, where respondents agree with prevention- and treatment-based government policies for drug addiction, education, and rehabilitation while expressing apprehension and distress in interacting with and living near known drug addicts (Bryan et al., 2000; Singleton, 2011). These studies also explored sex differences as a factor, considering how males and females have been noted to differ in their perceptions of drug addicts (Kauffman et al., 1997). In this research, results showed limited effects of sex where men had more positive overall, affective, and cognitive evaluations of drug addicts as opposed to women. However, both in previous studies and in this research, sex differences on explicit attitudes are typically non-significant or of small effect size, with their influence on implicit attitudes unclear and largely unexplored using IATs and related implicit measures (von Hippel et al., 2008; Zogmaister et al., 2013). Nonetheless, although considering sex difference as a variable in this study's implicit data analysis rendered all previously observed differences as non-significant, such results have limited generalizability as the number of participants of each sex in each order condition is severely unequal thus unrepresentative.

Conclusions and Recommendations

There are several limitations inherent in this study. First, the sample relied on undergraduate students only. However, the study does not attempt to make any generalizations. The measurement of implicit and explicit attitudes would be more representative of the general population when sampling individuals across more geographical locations, and enlisting equal numbers of participants by sex across conditions. Similarly, drug-related attitudes may be influenced by the extent to which people interact with drug addicts, such that participants from professions directly in contact with and catering to the needs of drug addicts (e.g. law enforcers, health professionals) may manifest different attitudes than the general public who only encounter them through secondhand sources of information (von Hippel et al., 2008; Zogmaister et al., 2013). Another limitation of this study is that the type of media portrayals of drug addicts may not have provided a robust mental representation to influence implicit and pre-existing attitudes consistently. It is important that the nature and content of the primes themselves should be given great attention due to the specificity required of the depicted exemplar and elicited mental imagery to have an appreciable effect on attitude change (Blair et al., 2001; Dasgupta & Greenwald, 2001).

This study's conclusion, which needs further verification given the above limitations, is that implicit and explicit attitudes of the participants across all conditions of order and prime, whether including sex differences in the analysis or not, represented a negative to neutral attitude toward drug addicts. However, a positive prime (and surprisingly,

a negative one) resulted in ST-IAT scores representing a less negative (i.e., slightly unfavorable to neutral) attitude toward drug addicts deviating significantly from the baseline measures taken prior to priming. Overall, no significant differences were found between the groups for both order and prime (in their entirety or their components alone), whether considering sex differences or not, except for very isolated sex differences and effects of the positive prime. The effects of priming (or their absence) can be attributed to methodological artifacts, the specificity of primes, the potency of media priming, and the differential activation of drug addict representations.

Nevertheless, this study can offer two nuanced findings on how media priming can influence attitudes, particularly those concerning drug addicts. First, whereas the negative prime simply validated the negative attitudes already possessed by the participants (thus their attitudes' return to baseline following the "criminal" prime), the positive prime had a small effect in terms of fostering drug addict-positive associations (but not weakening drug-addict-negative connections) which then manifested as minimal increases in pro-drug addict attitudes. Second, how explicit attitudes toward drug addicts are measured matters: a singular summative measure showed that the study participants view drug addicts negatively. However, by partitioning this measure into its affective, cognitive, and behavioral components, the study participants are seen to dislike and distrust drug addicts, but this did not necessarily translate into negative beliefs concerning rehabilitation and other similar interventions. Furthermore, it is in this cognitive dimension that the media primes had the most noticeable sustained positive effect. Essentially, despite the limited confirmation of our hypotheses and the need for further investigations, this study found that the news does shape people's views, but it requires great nuance and precision to identify in which attitude type (implicit or explicit) and domain (affective, cognitive, or behavioral) this shaping occurs.

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