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High and Low Trait Anger, and the Recognition of Anger Problems

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This study compared three groups of people: (a) high trait anger individuals who recognized personal anger problems (HR); (b) high trait anger individuals who did not recognize personal anger problems (HNR); and (c) low trait anger individuals not reporting personal anger problems (LNR). Compared to LNR participants, HR and HNR groups reported more anger-out (i.e., outward negative expression of anger such as arguing with others), anger-in (i.e., anger suppression and harboring grudges), greater desire to use and actual use of physically aggressive anger expression (e.g., pushing or shoving someone), and less anger control-in (i.e., emotionally focused strategies to lower anger such as relaxation) and anger control-out (i.e., behaviorally focused strategies such as being patient with others). HR individuals reported more trait anger (i.e., higher propensity to experience anger) and less anger control-out than the HNR group. Gender did not relate to the recognition of anger problems. Findings were discussed with regard to theory and clinical implications.

Keywords: anger, recognition, trait anger, STAXI.

Esta investigación comparó tres grupos de personas: (a) individuos con alta ira rasgo que reconocieron tener problemas de ira (AR); (b) individuos con alta ira rasgo que no reconocieron tener problemas personales de ira (ANR); y (c) individuos con baja ira rasgo que informaron no tener problemas de ira (BNR). En comparación con los participantes BNR, los grupos AR y ANR tuvieron mayor ira-externa (i.e., manifestar negativamente la ira como discutir con otros), ira-interna (i.e., contener la ira y guardar rencores), mayor deseo de usar y emplear en los hechos expresiones físico agresivas de ira (e.g., empujar a alguien), menor control-interno (i.e., estrategias enfocadas en la emoción para disminuir la ira, tal como la relajación) y menor control-externo (i.e., estrategias enfocadas conductualmente como ser paciente con otros). Los individuos AR tuvieron más ira rasgo (i.e., mayor tendencia a sentir ira) y menor control-externo que el grupo ANR. El género no se relacionó con el reconocimiento de problemas de ira. Los hallazgos se discuten con respecto a implicaciones clínicas y teóricas.

Palabras clave: ira, rasgo, reconocimiento, STAXI.

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Anger is a common and frequent emotion and can lead to both positive and negative outcomes (Averill, 1983). Problematic anger can have a profound impact not only on the person him/herself, but also on those associated with him/her. High trait anger or the propensity to become angry across time, people and situations (Spielberger, 1988) appears to be a risk factor for problem anger. Compared to low trait anger individuals, high trait anger individuals (a) are angered by more types of events, (b) experience more frequent and intense anger, (c) express their anger through dysfunctional anger suppression and in outwardly negative, less controlled ways, (d) experience more frequent and, in some cases, more severe anger consequences, and (e) report their anger to be more of a personal problem (Deffenbacher, Oetting, Thwaites, et al., 1996; Deffenbacher, Oetting, Lynch, & Morris, 1996; Spielberger, 1988, 1999; Tafrate, Kassinove, & Dundin, 2002). Moreover, high trait anger people admit that their thinking is distorted (e.g., they exaggerate the consequences or level of hardship associated with aversive events) and tend to view many of their anger reactions as overreactions and undesirable because they interfere with optimal functioning (Tafrate et al., 2002).

Angry individuals, however, differ in the level of recognition of anger problems. Some recognize and acknowledge that their anger causes difficulties for themselves and others, whereas others demonstrate little or no such awareness. Although high trait anger is associated with problem anger, it is not clear whether high trait anger is related to the recognition of anger problems. Some authors (e.g., DiGuiseppe, 1995) suggest that most angry people do not recognize their anger problems. Other studies, however, suggest the opposite (e.g., Tafrate et al., 2002). For example, 84% of high trait anger individuals indicated that their anger was a definite (73%) or possible (11%) problem in their lives (Rosen et al., 2001).

Of special interest are those angry individuals who do not report recognition of problems. Two possibilities exist. First, they are highly angry, but do not experience problems stemming from their anger. In this case, they should be studied to understand what they are doing that prevents or mitigates problems. Understanding these characteristics could inform the design of anger management therapies. Second, they may be experiencing anger problems or have characteristics (e.g., aggressive anger expression) that are likely to lead to problems. That is, they may actually have anger problems, but do not recognize them. The inability to acknowledge problems suggests a poor prognosis, because they are unlikely to consider change and take advantage of therapy (Deffenbacher, Filetti, Richards, Lynch, & Oetting, 2003). That is, recognition of the problem is essential for solving it (Deffenbacher, 1999; DiGuiseppe, 1995, Prochaska & Prochaska, 1999; Stiles, 2001). With regard to angry drivers (Deffenbacher, 2010; Deffenbacher et al., 2003), high anger, problem admitting angry drivers appear slightly more angry and aggressive than high anger, non-problem

admitting angry drivers, but both groups are significantly more angry and aggressive in their anger expression and less controlled in their anger expression than low anger drivers. However, this issue of recognition of anger problems has not been addressed in high general anger or trait anger individuals. This was the primary focus of this research, namely exploring the similarities and differences of high trait anger individuals who recognize and do not recognize anger problems.

The Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) (Miller & Tonigan, 1996) was chosen for the present study, because it includes a specific recognition scale. This scale can identify individuals “high” in recognition or people who directly acknowledge problems and “low” in recognition who do not recognize and potentially deny problems. Sometimes, it is believed that the SOCRATES derives from the Transtheoretical Model of Change (Prochaska & DiClemente, 1982, 1986). However, SOCRATES “does not appear to measure the stage constructs as conceived by Prochaska and DiClemente (1982, 1986). Rather the scales of SOCRATES seem better understood as continuously distributed motivational processes that may underlie stages of change” (Miller & Tonigan, 1996, p. 84). Therefore, the SOCRATES was chosen over the University of Rhode Island Change Assessment (McConaughy, Prochaska, & Velicer, 1983), because the SOCRATES specifically assessed the recognition (of anger problems) dimension central to the present research.

Contrary to popular belief, research shows few consistent gender differences in anger and anger expression. For example, in his classic study, Averill (1983) concluded that the only consistent gender difference was that women were more likely to cry when angry than were men. A more recent meta-analytic review (Archer, 2004) reported no gender differences in anger, and other research finds few gender differences in how men and women experience, express, and control their anger (Bartz, Blume, & Rose, 1996; Deffenbacher, Oetting, Thwaites, et al., 1996). Gender, however, was included in the present study to explore whether it is related to recognizing anger problems. Because there was no empirical base relative to gender in problem recognition, no gender predictions were made with regard to recognizing problems.

The goals of this research are threefold. First, potential differences between high trait anger individuals who recognize anger problems (HR) and high trait anger individuals who do not recognize anger problems (HNR) were explored to assess potential differences in anger or anger expression that might be associated with problem recognition. Potential similarities and differences in these two groups were contrasted by a comparison to a low trait anger control (LNR) group. Second, comparison of the two high anger groups to the low anger control provided test of the negative expression and aggression hypotheses of the state-trait theory of anger (Deffenbacher, Oetting, Thwaites, et al., 1996;

Spielberger, 1988, 1999). Specifically, it was predicted that compared to the low anger group, the high anger groups would report more (a) anger-out, (b) anger-in, (c) desire to express anger physically, (d) physically aggressive anger expression and less (e) anger control-in and (f) anger control-out. Third, this research explored these relationships in a non-English speaking (Mexican) sample, extending findings and theory testing into a different cultural context.

Method

Participants

Groups were drawn from 503 (221 male, 282 female) undergraduate students from 20 different majors at a private, Mexican university (M age = 21.67, SD = 1.96, range = 18-30). Most (98%) participants were single. Religious breakdown was 83.5% catholic, 5.0% other religions (e.g., Jehovah's Witnesses or Mormons), and 11.5% no religious preference. Average family income ranged from 30,000 to 35,000 Mexican pesos per month (approximately \$2308 to \$2692 monthly income USD). Instruments were completed in class, and students received no compensation or class credit for participation. One percent (n = 5) declined participation, indicating that participation took too much time (approximately 20 minutes).

High and low trait anger designations were operationally defined by upper (TAS > 22 and lower (TAS < 16) quartiles from the current sample's distribution of the Trait Anger Scale (TAS) from the Multicultural Latin American Inventory of Anger Expression and Hostility (ML-STAXI) (Moscoso & Spielberger, 1999). Problem recognizers were identified as those who agreed or strongly agreed with all four items on the Recognition scale of the Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES), whereas the group that did not recognize problems was defined as those who answered disagree or strongly disagree to these same four items. These criteria led to 23 (7 male, 16 female) high anger, problem recognizing (HR) participants, 49 (22 male, 27 female) high anger students who did not recognize anger problems (HNR), and 95 (38 men, 57 women) low anger individuals not reporting or recognizing anger problems (LNR).

Instruments

The Demographic Questionnaire. This asked students about their age, gender, marital status, religious preference (e.g., Catholic, Jehovah's Witness, Mormon, and no religious preference), and the income of the family to which the participant belonged to (with choices *From \$5000 to 10000*, *From 10001 to 15000*, and so on until *More than 60001*).

The 38-item Multicultural Latin American Inventory of Anger Expression and Hostility (ML-STAXI) (Moscoso, 2000;

Moscoso & Spielberger, 1999). The inventory was used to measure the experience (one scale), negative expression of anger (three scales) and positive, controlled expression of anger (two scales). Items were rated on a four-point scale (1 = *almost never*, 4 = *almost always*) regarding how often the person feels or does the content of the item. Higher scores reflect more of the characteristic measured. The 10-item trait anger scale (TAS) measures the person's general disposition or proneness to experience anger. The 6-item anger-out scale measures the person's tendency to express anger outwardly and negatively (e.g., arguing with others), whereas the 6-item anger-in scale assesses the individual's tendency to suppress anger and harbor grudges (e.g., boiling on the inside but not showing it). A 4-item scale measures the person's desires to express anger physically (e.g., feel like hitting someone). Two scales measure positive or controlled anger expression. The 6-item anger control-in scale assesses strategies to reduce angry feelings (e.g., relaxing to calm down), and the 6-item anger control-out index measures the tendency to employ interpersonal behaviors to reduce or manage anger (e.g., being patient with others). The ML-STAXI has been validated with Latin American, including Mexican populations. It has a consistent factor structure, alpha reliabilities ranging from .61 to .99, and appropriate correlations with other measures of anger and anger expression (Moscoso, 2000). Current alpha reliabilities, for men and women respectively, were: .82 and .84 for trait anger, .69 and .73 for anger-out, .63 and .66 for anger-in, .82 and .84 for desire to express anger physically, .85 and .88 for anger control-in, and .79 and .85 for anger control-out.

Because the ML-STAXI scale regarding physically aggressive anger expression only addressed the desire to express anger physically, the *Questionnaire about Anger Expression with Physical Aggression* was developed for this study. It contained six items regarding aggressive anger expression: (a) hit objects, (b) push someone, (c) hit someone, (d) do something to hurt your own body, (e) throw things at someone, and (f) damage or break things. In response to the question, "How often, being angry, do you..." participants rated on a 10-point scale (1 = *I never do it*; 10 = *I do it more than 10 times per week*) how often they engaged in the behavior when angry. To obtain the validity of the questionnaire, responses were subjected to a principal component analysis with a varimax rotation which yielded a two-factor solution with eigen values > 1 (i.e., 2.81 and 1.004). A 3-item factor involved anger expression through physical aggression toward other people (pushing, hitting or throwing things at another). The second 3-item factor involved expressing anger toward oneself or the physical environment. In separate factor analyses for men and women, both factors had eigen values > 1.0 for women, but the second factor had an eigen value of 0.96 for men. The second factor was, therefore, dropped. Variance explained for the Physical Aggression toward Others scale (α = .79 for men and .71 for women) was 47% for men

and 35% for women (eigen values of 2.86 and 2.71, respectively). Higher scores on the Physical Aggression toward Others scale reflect greater use of physically aggressive means of expressing anger towards others.

The 19-item Stages of Change Readiness and Treatment Eagerness Scale (SOCRATES) (Miller & Tonigan, 1996). This scale has been widely used in studies of substance abuse and possesses adequate reliability and validity (Maisto, Chung, Cornelius, & Martin, 2003; Mitchel & Angelone, 2006; Zullino et al., 2007). It assesses motivation to change problem behaviors related to addictions and assesses three motivational processes: (a) ambivalence (i.e., the individual wonders if he/she has a problem), (b) recognition (i.e., the individual accepts he/she has a problem), and (c) taking steps to change (i.e., the person is taking action to solve the problem). Respondents rate items on a five-point scale from strongly disagree to strongly agree regarding how the item describes him/her. Individuals are considered high on a dimension if they rate all those items as agree or strongly agree and low if they rate all items as disagree or strongly disagree.

SOCRATES was translated into Spanish and back-translated by Salazar (2008) for an investigation of alcohol and drug use in Mexico. This Spanish version of the SOCRATES was the starting point for this study. SOCRATES has not been employed with anger issues and required modification. Words such as “drinking,” “alcohol,” and “drugs” were replaced by the phrase “anger problems.” For example, the item, “I really want to make changes in my drinking” was reworded to “I really want to make changes in my anger problems.” Two doctoral level psychologists (not authors of this paper) who were familiar with the SOCRATES reviewed modified items with the first author. Changes were made until consensus was achieved.

Because the SOCRATES had not been applied to anger problems, it was not clear whether factors in prior research (Miller & Tonigan, 1996) would replicate. To address this issue, the 19 items were subjected to a principal components factor analysis (Bryant & Yarnold, 1995) with varimax rotation (Nunnally & Bernstein, 1994). If a “recognition factor” emerged, it would suggest construct validity applied to anger and valid use to assess recognition of anger problems. Factor analysis yielded three factors with eigen values > 1.0 (i.e., 8.36, 2.09, and 1.19) with factors accounting for 21.75%, 21.28%, and 18.28% of variance, respectively. Two factors had seven items each and the last five items. To ensure homogeneity within factors and heterogeneity between factors, item loadings were explored. Items were retained in a factor if they had high loadings (i.e., $> .6$) within the factor and were deleted if they loaded highly on another factor. Two items were deleted from the first factor, three from the second, and one item from the third factor. The principal components analysis with varimax rotation was re-run, resulting in three factors with eigen values > 1.0 (i.e., 5.73, 1.86, and 1.11) with factors accounting for 24.35%, 21.53%, and 21.09%

of variance, respectively. These factors maintained similar items from earlier versions of SOCRATES and reflected the three motivational processes described by Miller and Tonigan (1996). Specifically, one 4-item factor addressed recognition of anger problems. Items assessed the acceptance that anger problems cause harmful consequences and specific actions are needed in order to change. Items in another factor were consistent with taking steps to change (i.e., positive changes in anger management or taking action to manage anger successfully). Items in the third factor reflected ambivalence (i.e., anger problems were seen in a general way without specific consequences and uncertainty as to whether anger was a problem).

In summary, the final Recognition Scale employed in this study contained four valid items which loaded for both men and women, and had acceptable reliability ($\alpha = .76$ for men and $.81$ for women). Items were: (a) I need help to keep from going back to the same problems because of my anger; (b) My anger is causing a lot of harm; (c) I have serious problems because of my anger; and (d) If I do not do anything soon to solve my anger problems, they will get worse. They were rated on a five-point scale (strongly disagree, disagree, undecided, agree, strongly agree) regarding how the item applied to the person recognizing his/her anger problems.

Procedure

This research was approved by institutional review processes and individual instructors. Research assistants administered questionnaires during class. They informed students that the project would take about 20 minutes, participation was entirely voluntary, and responses were completely anonymous. Students then completed the questionnaires in the following order: (a) demographic information (age, gender, marital status, religious preference, and family income); (b) ML-STAXI; (c) Questionnaire about Anger Expression with Physical Aggression, and (d) SOCRATES. When students finished, they were thanked for their participation.

Results

The design of the study is 2 (Gender) \times 3 (Group). A MANOVA employing Wilks' Lambda was followed up with univariate ANOVAs. Significant group and interaction effects were followed by Tukey *post hoc* tests. Partial eta-squared served as the measure of effect size and was interpreted within Cohen's (1988) criteria in which eta-squared values from $.01$ to $.04$ are considered small effects, $.04$ to $.14$ moderate, and greater than $.14$ large.

A MANOVA on anger and anger expression variables revealed significant multivariate effects for group and the interaction $\lambda_s = .116$ and $.820$, $F_s(14, 310) = 42.88$ and

Table 1
Anger and Anger Expression as a Function of Anger Level and Recognition of Anger Problems

Measure	Group						Univariate Anger	
	LNR		HNR		HR		Anger <i>F</i> (2, 161)	Effect Size (η^2)
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>		
Trait anger	13.41	1.48	25.96	2.43	28.04	4.61	583.29**	.879
Anger-in	9.85	2.71	12.80	3.64	14.26	4.14	19.82**	.198
Anger-out	11.01	2.80	13.33	3.32	14.17	3.70	14.28**	.151
Desire Physical	4.12	0.46	4.82	2.06	5.43	2.66	7.78*	.088
Physical Exp.	4.69	3.33	6.59	4.40	8.00	6.93	7.64*	.087
Control-in	19.14	3.92	16.22	4.93	15.35	4.35	11.19**	.122
Control-out	19.25	3.59	15.27	3.82	12.43	3.49	34.71**	.301

Note. Desire Physical = Desire to Express Anger Physically, Physical Exp. = Physically Aggressive Anger Expression, LNR = Low Anger, No Recognition, HNR = High Anger, No Recognition, and HR = High Anger, Recognition.

* $p < .01$, ** $p < .001$.

2.31, $ps < .001$ and $.01$, $\eta^2s = .659$ and $.095$, but not for gender, $\lambda = .945$, $F(7, 155) = 1.27$. The multivariate effect size for group status was large and moderate for the interaction.

Univariate ANOVAs revealed a significant interaction only for the desire to express anger physically, $F(2, 161) = 8.92$, $p < .001$, $\eta^2 = .100$. Post hoc exploration of the interaction showed that HR and LNR men and women did not differ, but that HNR men reported a significantly ($p < .01$) stronger desire to express anger physically than HNR women ($Ms = 5.77$ and 4.04 , respectively).

Because there were no gender main effects and only one significant interaction, Table 1 summarizes findings by group status. A consistent group effect was found across measures with large effect sizes for trait anger, anger-in, anger-out, and both anger control measures and with moderate effect sizes for the two measures of physically aggressive anger expression. Not surprisingly because groups were partially defined by trait anger, high anger groups (HR and HNR) reported significantly more trait anger than the low anger group (LNR). HR and HNR groups also reported significantly (ps at least $< .01$) more anger suppression (anger-in), outward negative expression of anger (anger-out), desires to express anger physically, and actual physically aggressive anger expression towards others. High anger groups also reported less internal control of angry feelings (anger control-in) and outwardly directed anger management (anger control-out). While consistently differing from the low anger group, high anger groups differed from one another on only two measures. HR individuals reported significantly more trait anger ($p < .01$) and significantly less outwardly directed anger control ($p < .001$) than did HNR participants. That is, high anger participants who recognized anger problems reported a higher propensity to

become more frequently and intensely angered across a wide range of situations and more difficulty in controlling or reducing their anger in positive, constructive ways than high anger individuals who did not report an awareness of anger problems.

There were no gender effects on anger and anger expression measures and only one significant interaction involving gender, suggesting minimal gender differences. A chi square test showed that gender was not associated with group membership either, $\chi^2(2, n = 167) = 1.36$.

Discussion

This study, like every study, has its limitations. One limitation is the nature of the sample which consisted of university students. Although university students are a large, meaningful group some of whom experience significant anger problems (Deffenbacher, Oetting, Thwaites, et al., 1996), findings await replication and extensions to other samples (e.g., youth, clinical or general community samples).

Another limitation is that all instruments were self-report in nature. However, self-report is most appropriate for some phenomena studied. For example, when measuring someone's internal experience such as anger experienced and recognition of anger problems, self-report is the appropriate assessment strategy, because it is the person's internal emotional and cognitive experience that is the object of assessment. Forms of anger expression, however, might be measured from another perspective. Future research may consider collateral report as another way of assessing anger expression.

A third potential limitation involves the order of administration of the instruments. The ML-STAXI and the measure of physically aggressive anger expression were

administered before the SOCRATES. It is possible that completing questions on these questionnaires (e.g., I get angry easily) could have raised recognition of anger issues for some individuals and influenced their responses to the SOCRATES. On the other hand, this did not seem to bias findings strongly, because HR participants agreed or strongly agreed to all items on the Recognition Scale, whereas HNR participants disagreed or strongly disagreed with all items. An alternative potential bias had been considered in selecting the order of administering instruments. Specifically, if participants completed the SOCRATES first, then responding to recognition items may have led them to respond with elevated levels on the other instruments in order to be consistent with their level of reported recognition (i.e., reports of greater anger and negative anger expression for HR participants and reports of less anger and negative anger expression for the HNR group). Given that this was an initial study, this potential influence was considered more likely to bias findings, hence the administration of the SOCRATES after anger and anger expression measures so that those responses were gathered prior to the problem recognition measure. Future research should counterbalance instruments and assess these potential influences. With these limitations in mind, this research continues hypothesis testing in another cultural context and explores an understudied area, namely the issue of anger problem recognition in high anger individuals.

The results did not show gender differences. Men and women did not differ on the level of anger reported or in the ways that it was expressed, replicating a relative absence of gender differences reported by others (Archer, 2004; Bartz et al., 1996; Deffenbacher, Oetting, Thwaites, et al., 1996). Gender was not related to group membership either; men and women were found in all groups and in proportionate numbers. Additionally, there was only one significant interaction involving gender and group status. This interaction did not replicate on other measures, suggesting that it was not a consistent, robust finding and providing minimal evidence of gender mediation of findings. The absence of gender differences suggests that, with regard to anger and anger expression, men and women may be much more alike and that anger management groups can contain men and women in the same group (Deffenbacher & McKay, 2000).

Portions of this research are anchored in the state-trait anger theory (Deffenbacher, Oetting, Thwaites, et al., 1996; Spielberger, 1988, 1999). This theory predicts that compared to low trait anger individuals, those high in trait anger will be angered by more things (elicitation hypothesis), experience more frequent and intense anger over time and situations (frequency and intensity hypotheses), engage in more aggressive behavior (aggression hypothesis), and experience more adverse anger-related outcomes (negative consequence hypothesis). Since positive, adaptive ways of handling and expressing anger are not opposite ends of continuum, but more orthogonal to aggressive, dysfunctional responding, the model also predicts that high anger individuals are less

likely to express their anger in constructive, adaptive ways (reduced positive coping hypothesis).

The current research tested the aggression and reduced positive coping hypotheses. Compared to low anger participants (LNR), HR and HNR (high anger) participants reported more aggressive anger expression on all three relevant measures (anger-out, the desire to express anger in a physically aggressive manner, and physically aggressive anger expression towards others). High anger groups also reported reduced positive coping as reflected in greater anger suppression (anger-in) and less anger control-in and anger control-out. These findings are consistent with other tests of the state-trait anger theory (e.g., Deffenbacher, Oetting, Thwaites, et al., 1996) and extend them cross-culturally to Mexican university students.

With regard to the recognition of anger problems, the HR responded in a more dysfunctional or less constructive manner in all comparisons than the HNR group; however only two of these differences reached statistical significance. HR participants reported more trait anger than the HNR group, even though both groups were in the upper quartile on trait anger. HR students, therefore, experience even more frequent and more intense anger episodes than HNR participants. Additionally, the HR group reported less anger control-out than the HNR group. That is, they reported that they were less able to manage and deal with their anger constructively when dealing with others. Repeated episodes of intense anger with which they are less able to handle and deal with adaptively and constructively may lead to more adverse consequences (e.g., feeling out of control, damaged friendships, more difficulties at school, more distance in family relationships) and lead HR individuals to be more aware of their anger and accept it as a problem. While these findings await replication in this and other populations, they point to some of the issues that may lead individuals to recognize and accept anger as a personal problem.

These findings also point to the value of the SOCRATES in measuring recognition of anger problems. The SOCRATES was adapted to anger with measurement factors being similar to those used in the substance abuse literature. Specifically, the Recognition Scale was useful in identifying individuals who were high and low in their recognition of anger problems. The SOCRATES, therefore, may have clinical utility in assessing ambivalence about and recognition of problems, and taking action to change problem anger.

The results of the present study have some clinical implications. One issue is the potential relevant need of clinical services. Some (e.g., DiGuiseppe, 1995) have suggested that most angry individuals are at a low stage of recognition and therefore unlikely to avail themselves of clinical services. Other research (e.g., Rosen et al., 2001; Tafrate et al., 2002) suggests that the perception of anger problems is much higher and therefore need might be much higher. In the current research, HR (the group recognizing anger problems and most likely to take advantage of therapy

focused on anger reduction) comprised 4.6% of the overall sample and 31.9% of the high anger group (i.e., HR and HNR combined). These figures suggest approximately a third of high anger individuals clearly recognized anger as problematic and are consistent with the approximately 3-5% of college students who generally recognized their anger as a personal problem and took advantage of anger reduction therapy in treatment studies by Deffenbacher and colleagues (e.g., Deffenbacher et al., 2003).

HR participants were significantly higher than their low anger peers in terms of their general anger level, outward and aggressive anger expression, and anger suppression, and lower in their ability to manage their angry feelings and expression constructively in dealing with others, suggesting that all of these should receive clinical attention. Overall anger frequency and intensity and outward positive ways of dealing with anger might receive additional attention in intervention design, because they were what distinguished those who showed a high degree of recognition of anger problems compared to those low in recognition of anger issues.

Although future research may identify some protective factors, the HNR group also appeared to be significantly at risk for negative anger consequences, because they showed the same pattern of significant differences from their low anger peers, albeit not quite as high on trait anger and as low on anger control-out as the HR group. That is, they showed the same elevation of anger and same general pattern of anger expression characteristics as the HR group and are likely to experience anger-related consequences. Yet, they showed minimal awareness of anger issues. They may normalize anger experience and expression, deny or minimize anger and its consequences, and/or externalize the sources and causes of anger. Whatever the processes, they are poor candidates for anger reduction interventions, because they do not recognize a problem. Researchers and clinicians interested in may want to identify such low recognition interventions and design and evaluate interventions that might increase the individual's recognition and acceptance of anger problems, for instance, through motivational interviewing (Arkowitz, Westra, Miller, & Rollnick, 2008; Miller & Rollnick, 1991, 2002) or nonjudgmental exploring of anger processes and consequences in their lives (Deffenbacher & McKay, 2000). Such interventions might fit the individual at his/her level of recognition of anger problems and motivation to reduce anger. This may make them more amenable to anger reduction interventions.

In summary, the present research supported the aggression and reduced positive coping hypotheses of the state-trait model of anger, replicated the absence of gender differences on trait anger and anger expression indices, and extended findings cross-culturally to Mexican university students. The research also adapted the SOCRATES from substance abuse to anger problems and showed that elevated trait anger and lower anger control-out distinguished high anger, high recognition (HR) from high anger, low

recognition (HNR) participants. Implications for anger reductions interventions for both HR and HNR groups were briefly discussed.

References

- Archer, J. (2004). Sex differences in aggression in real-world settings: A meta-analytic review. *Review of General Psychology, 8*, 291-322. doi:10.1037/1089-2680.8.4.291
- Arkowitz, H., Westra, H. A., Miller, W. R., & Rollnick, S. (2008). *Motivational interviewing in the treatment of psychological problems*. New York, NY: Guilford Press.
- Averill, J. R. (1983). Studies on anger and aggression: Implications for theories of emotion. *American Psychologist, 38*, 1145-1160. doi:10.1037/0003-066X.38.11.1145
- Bartz, A. E., Blume, N. E., & Rose, J. (1996). Gender differences in self-report measures of anger: The role of social desirability and negative affect. *Journal of Social Behavior and Personality, 11*(5), 241-253.
- Bryant, F. B., & Yarnold, P. R. (1995). Principal-components analysis and exploratory and confirmatory factor analysis. In L. G. Grimm & P. R. Yarnold (Eds.), *Reading and understanding multivariate statistics*. Washington DC: American Psychological Association.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Erlbaum.
- Deffenbacher, J. L. (1999). Cognitive-behavioral conceptualization and treatment of anger. *Journal of Clinical Psychology, 55*, 295-309. doi:10.1002/(SICI)1097-4679(199903)55:3<295::AID-JCLP3>3.3.CO;2-1
- Deffenbacher, J. L. (2010, January). *Characteristics of individuals high in driving anger: Prevention and intervention*. Paper presented at the colloquium of Universidad Iberoamericana Puebla, México.
- Deffenbacher, J. L., Filetti, L. B., Richards, T. L., Lynch, R. S., & Oetting, E. R. (2003). Characteristics of two groups of angry drivers. *Journal of Counseling Psychology, 50*, 123-132. doi:10.1037/0022-0167.50.2.123
- Deffenbacher, J. L., & McKay, M. (2000). *Overcoming situational and general anger (therapist protocol)*. Oakland, CA: New Harbinger Publications.
- Deffenbacher, J. L., Oetting, E. R., Lynch, R. S., & Morris, C. D. (1996). The expression of anger and its consequences. *Behavior Research and Therapy, 34*, 575-590. doi:10.1016/0005-7967(96)00018-6
- Deffenbacher, J. L., Oetting, E. R., Thwaites, G. A., Lynch, R. S., Baker, D. A., Stark, R. S., ... Eiswerth-Cox, L. (1996). State-trait anger theory and the utility of the trait anger scale. *Journal of Counseling Psychology, 43*, 131-148. doi:10.1037/0022-0167.43.2.131
- DiGiuseppe, R. (1995). Developing the therapeutic alliance with angry clients. In H. Kassinove (Ed.), *Anger disorders: Definition, diagnosis and treatment* (pp. 131-149). Washington, DC: Taylor & Francis.

- Maisto, S. A., Chung, T. A., Cornelius, J. R., & Martin, Ch. S. (2003). Factor structure of the SOCRATES in a clinical sample of adolescents. *Psychology of Addictive Behaviors, 17*, 98-107. doi:10.1037/0893-164X.17.2.98
- McConaughy, E. A., Prochaska, J. O., & Velicer, W. F. (1983). Stages of change in psychotherapy: Measurement and sample profiles. *Psychotherapy: Theory, research, and practice, 20*, 368-375. doi:10.1037/h0090198
- Miller, W. R., & Rollnick, S. (1991). *Motivational interviewing: Preparing people to change addictive behavior*. New York, NY: Guilford Press.
- Miller, W. R., & Rollnick, S. (2002). *Motivational interviewing: Preparing people for change* (2nd ed.). New York, NY: Guilford Press.
- Miller, W. R., & Tonigan, J. S. (1996). Assessing drinker's motivation for change: The stages of change readiness and treatment eagerness scale (SOCRATES). *Psychology of Addictive Behaviors, 10*, 81-89. doi:10.1037/10248-014
- Mitchel, D., & Angelone, D. J. (2006). Assessing the validity of the stages of change readiness and treatment eagerness scale with treatment-seeking military service members. *Military Medicine, 171*(9), 900-904.
- Moscato, M. S. (2000). Estructura factorial del Inventario Multicultural Latinoamericano de la Expresión de la Cólera y la Hostilidad [Factor structure of of the Multicultural Latin American Anger Expression Inventory]. *Revista Latinoamericana de Psicología, 32*(2), 321-343.
- Moscato, M. S., & Spielberger, C. D. (1999). Evaluación de la experiencia, expresión y control de la cólera en Latinoamérica [Assessment of the experience and expression of anger in Latin America]. *Revista Psicología Contemporánea, 6*(6), 4-13.
- Nunnally, J., & Bernstein, I. (1994). *Psychometric theory* (3rd ed.). New York, NY: McGraw- Hill.
- Prochaska, J. O., & DiClemente, C. C. (1982). Transtheoretical therapy: Toward a more integrative model of change. *Psychotherapy: Theory, Research, and Practice, 19*, 276-288. doi:10.1037/h0088437
- Prochaska, J. O., & DiClemente, C. C. (1986). Toward a comprehensive model of change. In W. R. Miller & N. Heather (Eds.), *Treating addictive behaviors: Processes of change* (pp. 3-27). New York, NY: Plenum Press.
- Prochaska, J. O., & Prochaska, J. M. (1999). Why don't continents move? Why don't people change? *Journal of Psychotherapy Integration, 9*, 83-102. doi:10.1023/A:1023210911909
- Rosen, C. S., Murphy, R. T., Chow, H. C., Drescher, K. D., Ramirez, G., Ruddy, R., & Gusman, F. (2001). Posttraumatic stress disorder patient's readiness to change alcohol and anger problems. *Psychotherapy, 38*, 233-244. doi:10.1037/0033-3204.38.2.233
- Salazar, L. (2008). *Evaluación de dos intervenciones breves para la disminución del consumo del alcohol en adolescentes rurales de Aguascalientes* [Evaluation of two brief interventions to reduce alcohol consumption in rural adolescents from Aguascalientes]. (Unpublished doctoral thesis). Universidad Nacional Autónoma de México.
- Spielberger, C. D. (1988). *Manual for the State-Trait Anger Expression Inventory*. Odessa, FL: Psychological Assessment Resources.
- Spielberger, C. D. (1999). *Manual for the State-Trait Anger Expression Inventory-Revised*. Odessa, FL: Psychological Assessment Resources.
- Stiles, W. B. (2001). Assimilation of problematic experiences. *Psychotherapy, 38*, 462-465. doi:10.1037/0033-3204.38.4.462
- Tafra, R. C., Kassino, H., & Dundin, L. (2002). Anger episodes in high and low trait anger community adults. *Journal of Clinical Psychology, 58*, 1573-1590. doi:10.1002/jclp.10076
- Zullino, D. F., Krenz, S., Frésard, E., Montagrin, Y., Kolly, S., Chatton, A., ... Broers, B. (2007). Psychometric properties of a French-language version of the stage of change readiness and treatment eagerness scale (SOCRATES). *Addiction Research and Theory, 15*, 153-160. doi:10.1080/16066350601179514

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