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ORIGINAL ARTICLE

Examining U.S. and Japanese College Students' Differences in Psychological Distress: the Mediating Roles of Valued Action and Experiential Avoidance

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Abstract Acceptance and Commitment Therapy (ACT) is a counseling modality that features values clarification interventions. However, a well-established ACT-consistent measure of values for practitioners and researchers is lacking. The present study, therefore, examined an exploratory measure called the Valued Time and Difficulty Questionnaire (VTDQ; Wilson et al. 2010) and investigated the possible explanatory role of multiple ACT constructs on psychological distress. Obtained cross-national differences with a sample of 188 U.S. and 223 Japanese students were consistent with previous research. Moreover, a multiple mediator model revealed significant indirect effects of VTDQ subscale scores for time and difficulty on the association between culture and symptoms.

Keywords Values · Experiential avoidance · Psychological flexibility · Distress · Cultural differences

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Introduction

Counseling is a multifaceted activity intended to be useful for a diversity of problems, situations, and individuals. Acceptance and Commitment Therapy (ACT; Hayes et al. 2012) is an applicable treatment modality for counseling (Hill 2012; Murdock et al. 2012). ACT is a theory-driven (Hayes et al. 1996), evidence-based (A-Tjak et al. 2015), and transdiagnostic approach (Levin et al. 2014) to addressing human suffering and facilitating mental health. The purpose of ACT is to help and even to empower those who are suffering by increasing psychological flexibility, defined as "contacting the present moment as a conscious human being, fully and without needless defense… and persisting with or changing behavior in the service of chosen values" (Hayes et al. 2012. pp. 96–97).

As the definition of psychological flexibility indicates, values are an essential element of psychological flexibility, and values clarification is one core intervention of ACT (Dahl et al. 2009) as well as many perspectives in counseling (Kirschenbaum 2013). The ACT model views values as personally chosen, deeply meaningful, life directions, and in a sense, they represent precursors to committed action, or engagement in any behavior that is consistent with values. Values represent complex human motivations (e.g., love, integrity, justice), while committed action is any behavior that serves one's values. From an ACT point of view, psychological health is characterized by a values-centered life.

Psychological flexibility is a dimensional construct; clarity about one's values and engagement in values-consistent behaviors are markers of psychological flexibility, while a lack of values clarity and failure to engage in values-consistent behaviors are markers of psychological inflexibility, which has been defined as "…the rigid dominance of psychological reactions over chosen values and contingencies in guiding action" (Bond et al. 2011. p. 678). According to Hayes et al. (2006), psychological inflexibility is not just a lack of values clarity and engagement in values-consistent behavior, but also an excess of a class of behavior known as experiential avoidance. Experiential avoidance is any behavior that serves a reduction in unwanted psychological events (e.g., critical thoughts, painful memories, unpleasant emotions), and stands in contrast to acceptance, or a willingness to experience unwanted psychological events. Prioritizing the avoidance of unpleasant emotions as well as the development of comfortable or at least coherent thoughts about one's self and life over values clarity and committed action represent a relatively inflexible approach to living. To put it simply, the ACT model views human suffering as an overinvestment in the management of unwanted thoughts and emotions and an underinvestment in long-term, meaningful patterns of behavior. Thus, the provision of ACT involves efforts to disrupt and discourage inflexible behaviors and also develop the practice and maintenance of flexible behaviors.

Psychological inflexibility is often characterized by distress and dysfunction, but it may or may not merit a diagnosis. For example, a father may present for counseling reporting discouragement and distress regarding his coping with the demands and responsibilities of parenting young children. While the father's distress does not exceed diagnostic criteria for any disorder on the DSM, nevertheless he is able to provide a long list of difficult experiences (e.g., screaming kids, messy house) that generate a variety of unpleasant emotions (e.g., anxiety, frustration) and thoughts (e.g., "I'm a horrible parent"; "My kids are so bad"). He is also able to report coping behaviors that may be characterized as inflexible (e.g., yelling, permitting bad behavior).

A counselor might attempt to clarify the client's values in this situation by acknowledging and normalizing the suffering the client is experiencing and asking about what is truly and profoundly important to the client in the larger picture of his

life. After a careful and considerate discussion, the client may talk about his deeply-held desire to love and nurture his children as well as possible so that they may grow up to be healthy and functional adults. The counselor might provide other interventions to build more flexible alternatives to the client's attempts to cope with his thoughts and feelings during distressing experiences, so that he may respond to his children on the basis of his values rather than his distress. This conversation may have an emotional depth to it that can augment the experiences of suffering reported, and efforts to assist the client in remembering this heartfelt conviction even in the midst of difficult parenting experiences may contribute to more satisfying and effective interactions with his children.

This view of human functioning as a continuum between inflexible and flexible repertoires represents a step away from the categorical focus of many evidence-based treatments developed for specific diagnoses (e.g., Chambless and Klonsky 2013; but see also Chambless et al. 2006). ACT appears to be applicable not only for different diagnostic presentations but also to have potential for counseling centers (e.g., Levin et al. 2015) and for individuals from a variety of cultures. ACT has been shown to predict positive therapy outcomes for a variety of disorders in western countries such as the United States and the United Kingdom (Arch et al. 2012; Flaxman and Bond 2010; Zettle et al. 2011), and cross-cultural studies indicate that the construct of inflexibility is also applicable in eastern countries such as Japan (Masuda et al. 2014; Muto et al. 2011; Muto and Mitamura 2015).

ACT Measures

A relative lack of values clarification interventions, as well as a lack of measures of values that might facilitate a values clarification intervention, has been reported in the field of counseling psychology (Kinnier 1995). One study reported that a sample of counselors and clients reported different values, an effect that conceivably might impact the provision of counseling (Khan and Cross 1983). However, the means of assessing values in this study was not a clinically-relevant measure involving a conceptualization of values consistent with the ACT model. Although ACT practitioners and researchers have developed a variety of activities for clarifying values (Dahl et al. 2009; Levin et al. 2012), there has been comparatively little investment in developing specific measures of values, perhaps in part because values are an intensely idiographic issue and difficult to conceptualize into a specific measure.

The most common and well-established ACT-consistent measure is the Acceptance and Action Questionnaire (AAQ; Bond et al. 2011; Hayes et al. 2004). The original AAQ was developed as a measure of experiential avoidance (Hayes et al. 2004), while the second version, the AAQ-II (Bond et al. 2011) represents a psychometric improvement on the first version as well as a measure of the broader construct of psychological inflexibility. The AAQ-II also has been translated into a variety of languages, including a Japanese version that exhibits acceptable psychometric properties (Kishita et al. 2008) and utility as a measure for Japanese respondents (Masuda et al. 2014; Muto et al. 2011). Relevant to the present study, Masuda et al. (2014) revealed that Japanese college students reported greater experiential avoidance and inflexibility than their U.S. counterparts, in addition to higher levels of psychological distress. Given a demonstrated higher self-reported level of psychological distress of Japanese samples relative to that of U.S. samples (e.g., Abe 2004; Cheng et al. 1993), and a well-established relationship between distress and inflexibility in both U.S. and

Japanese samples (e.g., Bond et al. 2011; Masuda et al. 2014), psychological inflexibility may provide a constructive focus in cross-cultural research and applied practices.

In spite of these promising results, the construct validity of the AAQ-II has been a focus of scrutiny (e.g., Rolffs et al. 2016; Wolgast 2014). An inspection of the AAQ-II items reveals that many are oriented to experiential avoidance (e.g., "I'm afraid of my feelings.") and related cognitive reactions (e.g., "I worry about not being able to control my worries and feelings."), which is more consistent with the initial construct focus of the measure (Hayes et al. 2004). Some items seem to refer to obstacles in accomplishing desirable outcomes (e.g., "My painful memories prevent me from having a fulfilling life", "Worries get in the way of my success"), but do not seem to directly reflect values clarity or values-consistent action as detailed in many ACT protocols. Overall, most of these items seem more weighted to experiential avoidance, and no systematic approach to item content has been conducted to balance the multifaceted nature of inflexibility. Indeed, experiential avoidance is not regarded as problematic in and of itself, but only in relation to opportunities for committed action. As such, the AAQ-II may not adequately capture the full range of repertories of interest, especially the contributions of values clarity and committed actions, in predicting outcomes such as psychological distress or quality of life.

Unlike the AAQ and its many variants, measures that explicitly address values as described within the psychological flexibility model have been limited in number and very slowly developed empirically. Values are intensely idiographic matters and as a result, present challenges to measurement developers, in contrast to the relatively common emotional and cognitive experiences that can occasion experiential avoidance. One early approach to values assessment that has been examined in multiple studies is known as the Valued Living Questionnaire (VLQ; Wilson et al. 2010). The VLQ contains twenty items addressing ten different values domains. The items cluster into two subscales, one for the perceived degree of *importance* of each domain, and one for the perceived degree of *consistency* between values and behavior engaged in over the past week (Wilson et al. 2010). As such, the VLQ is a step toward a more personalized approach to values clarity, given the number of potential values domains included, and is sensitive to values-consistent actions via assessment of consistency with respect to the values domains.

Although Wilson et al. (2010) reported promising psychometrics with this instrument, in clinical settings clients have sometimes reported difficulty in understanding the focus of the consistency subscale items, and some studies utilizing the measure have produced disappointing results (Swain et al. 2013; VanBuskirk et al. 2012). Furthermore, no known values measure oriented to psychological flexibility has been used cross-culturally, and it is not clear how an idiographic measure of values might compare groups of individuals from distinct sociocultural contexts. Thus, a more accessible measure of values and committed action could contribute to research on the relative influence of these elements of flexibility/inflexibility in predicting outcomes of clinical interest, and could also be used to inform cross-cultural differences for these repertoires.

The Current Study

The current study sought to compare a sample of U.S. and Japanese college students on measures of psychological flexibility/inflexibility as well as psychological distress. In addition

to a between-groups comparison, the study was designed to allow for an evaluation of the ability of the AAQ to mediate the anticipated cultural difference in psychological distress, given that the AAQ has worked as a successful mediator of psychotherapy outcomes in Western cultures but has not been subjected to comparable research in another sociocultural context. Furthermore, a more accessible version of the VLQ was developed for exploratory purposes in this study called the Valued Time and Difficulties Questionnaire (VTDQ), containing subscales for 1) *importance* of the ten valued domains utilized by the VLQ, 2) amount of *time* engaged in each valued domain, and 3) *difficulty* engaging in each of these domains due to difficult private events (Drake and Keusch 2012; Sain et al. 2016). This measure was included to provide a broader basis for comparing not only the reports of psychological inflexibility repertoires between these two cultures, but also the relative influence of experiential avoidance along with variables relevant to values as potential mediators of psychological distress. Thus, the hypotheses for the present study were as follows:

Hyphothesis 1: In line with previous research (e.g., Abe 2004; Cheng et al. 1993), college students in the U.S. and Japan would differ significantly on measures of general psychological distress, with Americans reporting less distress than Japanese. Furthermore, given the theoretical and empirically supported relationship between psychological distress and psychological inflexibility (e.g., Bond et al. 2011; Masuda et al. 2014), we also hypothesized that the U.S. sample would report lower experiential avoidance, less difficulty engaging in valued action due to private events, and higher importance and time engaged in valued action than the Japanese sample.

Hyphothesis 2: The subscales of the VTDQ would correlate in theoretically consistent ways with experiential avoidance and psychological distress in the total sample as well as within each culture. Specifically, the importance and time subscales would negatively correlate with experiential avoidance and psychological distress, and the difficulty subscale would correlate positively with experiential avoidance and psychological distress.

Hyphothesis 3: The AAQ-II and the subscales of the VTDQ would exhibit significant indirect effects on the relationship between nationality (i.e., U.S. vs. Japan) and psychological distress.

Method

Participants

A total of 411 participants were recruited from introductory psychology courses at Doshisha University ($n = 106$) and Kyoto University ($n = 117$) in Kyoto, Japan, and the University of South Carolina ($n = 188$), in Aiken, South Carolina, USA. Data collection was conducted at all sites during the same time period. Participants received course credit in exchange for their participation. The average age of the total sample was 19.3 years ($SD = 3.3$), with the average American age of 19.6 ($SD = 4.1$) and the average Japanese age of 19.1 ($SD = 2.4$). The total sample was mostly female ($n = 270$; 65.7%), with 131 (69.7%) American females and 139 (62.3%) Japanese females. The Doshisha University sample was entirely female ($n = 106$), while the Kyoto University sample contained a minority of females ($n = 33$; 23.2%). The American sample consisted mostly of freshmen ($n = 105$; 55.9%) and Christians ($n = 165$;

87.8%). Regarding racial demographics, the American sample was mostly Caucasian ($n = 119$; 63.3%) and African-American ($n = 59$; 31.4%).

Measures

Demographics Questionnaires

A brief demographics measure was devised separately for the U.S. and Japanese sites. The U.S. form assessed for age, race, religious affiliation, and sex. The Japanese form assessed for age and sex.

Acceptance and Action Questionnaire-II

The AAQ-II (Bond et al. 2011) is a 7-item questionnaire designed to measure overall experiential avoidance. Items are rated on a Likert-type scale ranging from 1 (*never true*) to 7 (*always true*). Responses to all seven items are totaled, resulting in scores that may range from 7 to 49, with higher scores indicating higher levels of experiential avoidance. The AAQ-II has demonstrated adequate reliability and validity across a variety of samples (Bond et al. 2011), including as a transdiagnostic predictor of various categories of psychopathology (Levin et al. 2014). A Japanese translation of the AAQ-II has been created, developed by Kishita et al. (2008), bearing acceptable psychometric properties among a Japanese sample, with a subsequent factor analysis providing additional support for its validity (Shima et al. 2013).

General Health Questionnaire-12

The GHQ-12 (Goldberg 1978) is a 12-item self-report measure of one's general level of psychological distress. Participants rate statements regarding their recent functioning in life on a scale of 0 (e.g., *much less than usual*) to 3 (e.g., *better than usual*), with the anchors assigned to each value varying somewhat based on the wording of each individual item (e.g., *much less than usual*, *much less capable*, *much less able*, etc.). Item responses are totaled yielding a score that may range from 0 to 36, with higher scores indicating greater distress. A Japanese version of the GHQ-12, which had been subjected to a back translation and evaluated for reliability and validity (Nakagawa and Daibo 1985), was used in the current study.

Valued Time and Difficulty Questionnaire

The VTDQ is a 30-item measure containing 3 items for each of the ten values domains utilized by the VLQ (family, intimate relationships, parenting, friendship, work, education, recreation, spirituality, citizenship, and health; Wilson et al. 2010). Instead of inquiring about the importance of the valued domain itself, as is done with the VLQ, the importance subscale of the VTDQ inquires about the importance of engagement in each valued domain (e.g., "How important is it to you to do things for or with family?"), with response options ranging from 0 (*not at all important*) to 10 (*extremely important*). Instead of inquiring about the consistency of behavior with respect to valued domains, as is done with the VLQ, the time subscale of the VTDQ inquires about the amount of time engaged in each domain in the past week (e.g., "In

the last week, how much time have you spent doing things for or with family?"), with response options ranging from 0 (*no time at all*) to 10 (*a lot of time*).

In order to assess for the potential interference of experiential avoidance and related cognitive reactions in respect to each valued domain, the difficulty subscale of the VTDQ inquires about the amount of difficulty engaging in each valued domain during the past week due to psychological obstacles (e.g., "In the last week, how difficult was it to do things for or with family because of unpleasant thoughts, feelings, memories, or bodily sensations?"), with response options ranging from 0 (*not at all difficult*) to 10 (*extremely difficult*). Scores on each subscale are summed and could range from 0 to 100, with higher scores indicating more importance, time, and difficulty. The Japanese version of this measure was translated from the English version by a bilingual Japanese graduate student, and then this Japanese translation was back-translated into English by another bilingual Japanese graduate student. This back-translation was evaluated by one of the authors (DD), a native English speaker raised in the United States, for equivalence in meaning.

Procedure

Upon arrival for the study, participants read and signed a consent form and were informed that they would be responding to a collection of questionnaires. Participants were instructed to take their time and to be as honest as possible, reminding them of the confidentiality agreement. Upon completion of the questionnaires, participants received a debriefing form and were credited for their participation.

Data Processing

Missing data (8.4%) were handled using the hot deck imputation procedure with a macro designed by Myers (2011). The hot deck procedure imputes values based on a "donor" matched on predefined characteristics (i.e., age and gender). The PROCESS macro for SPSS (Hayes and Preacher 2014) was used to test a hypothesized mediation model. The PROCESS macro was ideal for the current analyses because it allows for a categorical independent variable and simultaneous testing of multiple mediators. The multiple mediation model was preferred to traditional mediation analyses (Baron and Kenny 1986) because in addition to testing traditional 'a, b, c, and c' path coefficients, the macro estimates the direct and indirect effects of the independent variable on the dependent variable through a set of mediating variables, and estimates the relative contribution of each mediator variable on the model. The current study used 1000 bootstrapped samples with bootstrapped biased corrected 95% confidence intervals. Next, pairwise contrasts of the indirect effects were conducted in order to compare the variable's unique ability to mediate the relationship between the independent and dependent variable, beyond the effects of other mediators. The analyzed database was uploaded to Open Science Framework (Drake 2017).

Results

Descriptive Statistics and Cultural Comparisons

Descriptive statistics for the total sample and cultural sub-samples are included for each measure in Table 1. A collection of independent samples *t*-tests was conducted to examine

Table 1 Descriptive statistics for the full sample and each cultural subsample

	Full sample		American sample		Japanese sample	
	M	*SD*	*M*	*SD*	*M*	*SD*
AAQ-II	21.9	9.1	18.1	8.2	25.2	8.4
VTDQ-Importance	72.8	13.0	80.1	11.3	66.4	11.0
VTDQ-Time	48.8	13.3	56.3	12.5	42.2	10.1
VTDQ-Difficulty	25.2	17.4	17.0	16.5	32.5	14.8
GHQ-12	12.4	5.3	11.4	5.4	13.2	5.1

group differences on the measure totals. As predicted, the U.S. participants reported significantly less experiential avoidance, $t(409) = -8.746$, $p < .001$, $d = -.866$, and significantly less psychological distress, $t(409) = -3.557$, $p < .001$, $d = -.352$, than the Japanese participants. Also as predicted, American participants reported significantly higher scores on the perceived importance of the value domains, $t(409) = 12.417$, $p < .001$, $d = 1.229$, significantly more time spent on valued actions, $t(359.10) = 12.369$, $p < .001$, $d = 1.246$, and significantly less difficulty engaging in valued actions, $t(409) = -10.038$, $p < .001$, $d = -.994$, than Japanese participants. Levene's test indicated unequal variances for the analysis of time spent on valued actions, which merited an adjustment of the degrees of freedom.

Internal Consistency and Bivariate Correlations

Cronbach's alphas were obtained for each measure to evaluate internal consistency, with the results depicted in bold in Table 2. With respect to the full sample, the AAQ, GHQ, and the Difficulty subscale of the VTDQ exhibited good internal consistency, whereas the Importance subscale exhibited acceptable consistency and the Time subscale exhibited questionable consistency. When examining the cultural subsamples, these patterns were the same, except that the Importance subscale yielded questionable internal consistency among the Japanese participants and the Time subscale was poor for both U.S. and Japanese participants.

Table 2 Internal consistency and bivariate correlations for the full sample and each cultural subsample

	1	2	3	4	5
Full sample					
1. AAQ-II	**.87**				
2. VTDQ-Importance	−.32**	**.73**			
3. VTDQ-Time	−.32**	.59**	**.65**		
4. VTDQ-Difficulty	.54**	−.31**	−.15**	**.86**	
5. GHQ-12	.52**	−.17**	−.22**	.47**	**.83**
American sample | Japanese sample					
1. AAQ-II	**.88** | **.82**				
2. VTDQ-Importance	−.22** | −.08	**.71** | **.63**			
3. VTDQ-Time	−.26** | −.04	.52** | .35**	**.55** | **.51**		
4. VTDQ-Difficulty	.58** | .32**	−.16* | −.04	−.04 | .30**	**.84** | **.80**	
5. GHQ-12	.58** | .42**	−.11 | −.08	−.19** | −.12	.44** | .44**	**.84** | **.83**

Values in **bold** are Cronbach's alphas

*$p < .05$

**$p < .01$

To evaluate convergent validity, a collection of Pearson correlations were conducted on all measure totals for the total sample as well as for the American and Japanese samples separately, with results depicted in normal font in Table 2. As hypothesized, VTDQ scores for Importance and Time were negatively related to experiential avoidance and psychological distress, while the VTDQ score for Difficulty was positively related to experiential avoidance and distress. Results for each cultural subgroup were less uniform. Among U.S. participants, all correlations were significant except the relationship between Importance and general distress. Among Japanese participants, experiential avoidance and general distress were significantly related only with Difficulty.

A collection of post-hoc analyses involving Fisher's z transformations were computed in order to test for significant differences in correlations between the cultural subgroups. Results are displayed in Table 3. All comparisons were significantly different, except for those contrasting Importance with experiential avoidance, psychological distress, and Difficulty and for psychological distress with Time and Difficulty. In sum, the VTDQ subscales were related to experiential avoidance and psychological distress, but the relationship was stronger for American than Japanese participants, and there were significant differences in these relationships between cultures.

Mediation Analyses

Multiple Mediator Model

A multiple mediator model was used to examine the direct and indirect effects of experiential avoidance, amount of time, level of importance, and difficulty engaging in valued activities on the association between culture and psychological distress. See Table 4 for direct effects, indirect effects, and bias corrected and accelerated bootstrapped confidence intervals. The overall model predicting psychological distress was significant, $F(5, 405) = 43.06$, $p < .001$, and explained 34.71% of the variance in psychological distress. The direct effect (c path) of nationality group (i.e., U.S. vs. Japan) on psychological distress was significant, $b = -2.06$, $SE = .57$, $t = -3.58$, $p < .001$. The total effect model (the direct and indirect effect of culture on psychological distress) was also significant, $F(1, 409) = 12.66$, $p = .0004$. Of the *a* paths, nationality predicted experiential avoidance, amount of time, level of importance, and difficulty engaging in valued activities. Results from the *b* paths indicated that experiential avoidance, time, and difficulty engaging in valued activities predicted psychological distress,

Table 3 Fisher Z transformation significance tests of correlation differences between American and Japanese subsamples

	1	2	3	4
1. AAQ-II				
2. VTDQ-Importance	−1.40			
3. VTDQ-Time	−2.24 *	2.16 *		
4. VTDQ-Difficulty	3.32 ***	−1.16	−3.56 ***	
5. GHQ-12	2.15 *	−0.28	−0.77	0.48

*$p < .05$

**$p < .01$

***$p < .001$

Table 4 Mediation model indirect effects and confidence intervals

	Indirect effects		
		Bootstrapped BC 95% CI	
Mediator	Point Estimate (SE)	Lower	Upper
AAQ-II	1.52 (.29)	.99	2.11
VTDQ-Importance	−.39 (.27)	−.94	.16
VTDQ-Time	1.12 (.33)	.47	1.77
VTDQ-Difficulty	1.65 (.34)	1.06	2.38
	Contrasted effects		
		Bootstrapped BC 95% CI	
Contrasts	Point Estimate (SE)	Lower	Upper
AAQ vs. Importance	1.91 (.42)	1.07	2.74
AAQ vs. Time	.40 (.44)	−.46	1.23
AAQ vs. Difficulty	−.13 (.46)	−1.12	.72
Importance vs. Time	−1.50 (.52)	−2.58	−.50
Importance vs. Difficulty	−2.04 (.48)	−3.15	−1.21
Time vs. Difficulty	−.53 (.41)	−1.40	.21

Bootstrapped BC 95% CI = Bootstrapped Bias Corrected 95% Confidence Intervals. The Sample (American versus Japanese) was included as the independent variable and the GHQ was included as the dependent variable

but the rated importance of valued activities was not significant. See Fig. 1 for a graphical description of the mediation model.

Bias corrected bootstrapped confidence intervals indicated that the indirect effects of experiential avoidance, amount of time, and level of difficulty engaging in valued activities were significant. However, there was not a significant indirect effect of the importance of the valued activities. Pairwise comparisons suggest that experiential avoidance yielded a significantly larger indirect effect than the level of importance of valued activities. In addition, amount of time and level of difficulty engaging in valued activities showed significantly larger indirect effects than the importance of the valued activities. Notably, there were no significant differences between the indirect effects for experiential avoidance and level of difficulty or amount of time spent on valued activities. Neither was there a significant difference between the indirect effects of the amount of time and difficulty engaging in valued activities.

Discussion

The findings of the current work replicated studies reporting a difference in psychological distress between U.S. and Asian cultural groups (e.g., Abe 2004; Cheng et al. 1993) and provided additional support that this between-group difference extends to measures of psychological flexibility/inflexibility, a known predictor of psychological distress (Bond et al. 2011). The U.S. sample, compared to the Japanese sample, reported less experiential avoidance and difficulty engaging in valued action due to psychological obstacles, and also endorsed more importance for a list of values domains and time spent engaging in behaviors consistent with those domains.

The current study also demonstrated that measures of psychological flexibility/inflexibility partially accounted for the cultural difference in self-reported distress. The AAQ-II, arguably the primary current measure of psychological inflexibility, successfully mediated a portion of the variance in the cultural difference in psychological distress. Furthermore, two of the three subscales of the VTDQ – time spent engaging in valued action and difficulty engaging in valued action due to psychological obstacles – also successfully mediated a portion of the

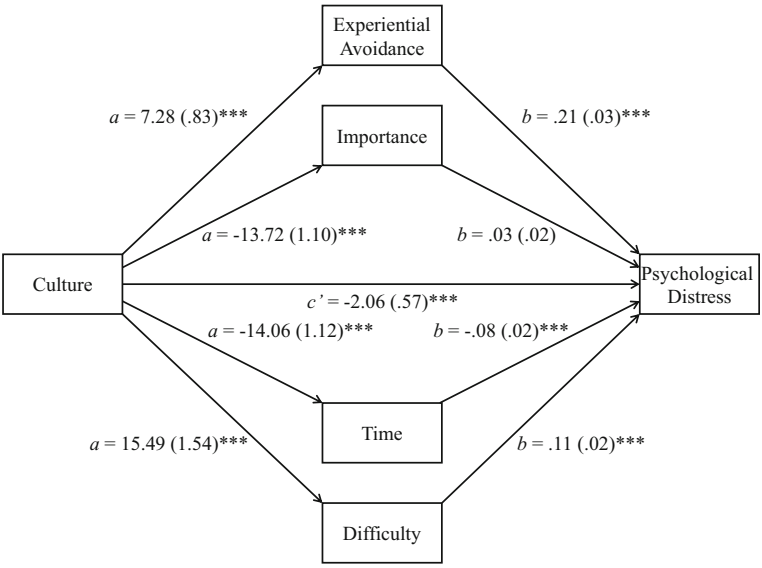

Fig. 1 Graphic depiction of mediation models with path coefficients followed by standard error values in parentheses. *$p < .05$. **$p < .01$. ***$p < .001$

variance in the cultural difference in psychological distress. The degree of importance for a list of values domains, however, did not yield a significant indirect effect on the cultural difference in psychological distress. This study may provide a preliminary basis for additional work on predictors of psychological problems from a cross-cultural perspective, especially for the constructs of experiential avoidance and valued actions.

Although central to the focus of ACT and many other types of psychotherapy (Hayes et al. 2011) and counseling (Kirschenbaum 2013), clinically relevant measures of valued living are relatively sparse in both clinical and counseling psychology as well as the field of psychology more broadly. Although some values-oriented measures have been developed in other areas of psychology, they tend to focus on common values across cultures and individuals, do not necessarily cohere with the notion of values within the psychological flexibility model, and are not conceptualized with respect to psychological difficulties (e.g., Schwartz 1992). The current study provided some supportive psychometric evidence for the VTDQ, a new measure of values clarity and values-consistent action. More specifically, the VTDQ exhibited promising albeit preliminary psychometric support for the Time and Difficulty subscales, including evidence of convergence with the AAQ-II and prediction of scores on the GHQ.

Furthermore, the current study provided general support for committed action in addition to experiential avoidance as active elements of the psychological flexibility/inflexibility model. The results suggest that time spent engaging in valued action and difficulty engaging in valued action due to psychological obstacles are significant predictors of psychological distress, and importantly, have cross-cultural implications that may inform assessment and treatment planning. As such, the results of this study provide support for elements of the psychological flexibility model that have not received as much attention due to the limited availability of measures that explicitly target values and committed action. However, it may be important to note that the analyses for convergence between the VTDQ and the other measures revealed a

cultural difference; the VTDQ was not as strongly related to other measures in the Japanese sample as it was in the U.S. sample.

The meaning of the obtained cultural differences in both distress and psychological flexibility in the current study is unclear. This may be particularly the case for the observed differences for scores on the AAQ and the VTDQ, since previous studies have reported differences in distress between U.S. and Japanese samples. Extant literature suggests that whereas U.S. culture is predominantly individualistic, Japanese culture is predominantly collectivistic (e.g., Markus and Kitayama 2010). One possible explanation is that collectivist cultures promote a more psychologically inflexible pattern of behavior among individuals in comparison to individualistic cultures. Another possibility is that members of collectivistic cultures simply view and respond to these measures differently. The psychological flexibility model is a product of researchers and practitioners mostly from individualistic cultures, although elements of the model, such as mindfulness and acceptance, are often related to features of collectivistic cultures (Cheng and Sue 2014). Nevertheless, it is possible that the measures bear an inherent cultural bias reflective of the predominant culture in which the instrument was originally developed.

Given the seemingly greater emphasis on acceptance and group sensitivity in social norms among collectivistic cultures, it is perhaps surprising that the Japanese sample exhibited relatively less flexible average scores on the measures in this study. Alternatively, perhaps collectivistic cultures promote a different style of introspective and interpersonal awareness than individualistic cultures. Although the comparison of scores implied less flexibility among Japanese participants, it may be the case that the differences are rooted in these different styles of awareness and social expression rather than differences in inflexibility per se. While the AAQ-II and two of the three subscales of the VTDQ explained variance in cultural differences in distress, differences were also apparent that were not accounted for by measures of flexibility, which suggests cultural differences in these constructs that are different or more fundamental than what is being measured in the present study.

Perhaps the cultural differences observed in the current study are driven less by genuine differences in the constructs being measured and more by simple response tendencies that vary between individualistic and collectivistic cultures. Some studies have reported that Japanese people tend to avoid extreme responding (e.g., Chen et al. 1995; Iwawaki et al. 1969), which could impact scores from measures in the current study that include response anchors such as “never true”, “always true”, “extremely important/difficult”, “much more/less than usual”, etc. The cultural difference observed with the AAQ-II in this study implied that the average Japanese participant was reporting clinically significant levels of experiential avoidance, based on norms published by Bond et al. (2011), but these norms were derived from studies conducted in individualistic cultures and may not be valid for a collectivistic culture. If a hypothetical collection of participants responded moderately to the scale utilized for all items of the AAQ-II, the total score would closely resemble the obtained average score among Japanese participants even though it happened to be at or above an established clinical level among western samples.

This phenomenon seems consistent with the scores obtained for the Importance and Difficulty subscales of the VTDQ and also with the GHQ-12; Americans exhibited a more extreme average score while Japanese exhibited a relatively moderate score.

However, the Time subscale of the VTDQ was ambiguous in this regard; American participants reported an average slightly above a hypothetical moderate score, while Japanese participants reported an average slightly below a hypothetical moderate score. It seems conceivable that this response tendency might also account for the observed lower correlations between the VTDQ and the other measures with the Japanese sample, as this tendency could introduce error variance into the data and restrict the range of scores that might detrimentally impact the correlational analyses conducted. In any case, it appears that the measures in this study, if they were to be used in future research with these cultural groups, may require separate norms.

Limitations and Future Directions

Certain methodological issues also may account for some of the findings reported here. In particular, the results of the mediational analysis were derived from a cross sectional approach to data collection. In strict terms, mediation was not fully demonstrated because temporal precedence of the declared mediators was not established. As such, this type of analysis would be greatly bolstered by a future endeavor embracing a longitudinal approach to examine the impact of psychological inflexibility variables on psychological distress over time. Furthermore, although all data collection occurred in university settings in the same time period, the subsamples may have differed in ways that could account for some of the effects observed. While the U.S. sample was heterogeneous with respect to sex, the two Japanese samples were quite homogenous by comparison; one sample was exclusively female while the other was predominantly male. It is possible that the assessment context as well as the broader social context of the Japanese sites compared to the U.S. site contributed to cultural differences that were observed in the current data. Furthermore, the U.S. sample may bear limited representativeness of U.S. college students, as data collection occurred exclusively in a small university in the Southern region of the U.S. Future research could be improved by efforts to minimize these potential confounds.

The VTDQ was developed in a therapy setting and designed for use both as a potential measure of treatment response but also as a vehicle for discussion and intervention planning in the context of therapy. As such, it was not subjected to any empirical approach to item selection or values domain inclusion. This shortcoming was also true of its predecessor, the VLQ, which also was created in a treatment context and only later incorporated into research activities. It is possible that a more systematic and empirical approach to the wording of items, the inclusion or exclusion of values domains, and the development and focus of subscales might improve the psychometric properties of this measure. The current data suggest that the measure bears insufficient internal consistency, at least for certain subscales, which may limit its usefulness for studies of validity. The cultural differences with respect to internal consistency, and especially convergent validity, suggests that the measure may bear differential levels of suitability for research based on the culture in which it is used.

Finally, given that the VTDQ is a clinically-relevant measure, it will be crucial to investigate the usefulness of it in the context of treatment provision. Our qualitative observations suggest that the measure has potential as a tool for treatment planning and as an outcome measure, but only a systematic and quantitative approach will reveal its true value. As such, future projects that include the measure in the context

of counseling research should provide information about the utility of measuring valued action for individuals, within and outside of their culture.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

Ethical Approval All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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