Personality and Individual Differences 97 (2016) 203–209

Contents lists available at ScienceDirect

Personality and Individual Differences

journal homepage: www.elsevier.com/locate/paid

# The relationship between time attitudes profiles and self-efficacy, sensation seeking, and alcohol use: An exploratory study

Michael T. McKay [b,*], Andrew Percy [a], Jon C. Cole [b], Frank C. Worrell [c], James R. Andretta [d]

[a] Queen's University, Belfast, United Kingdom
[b] University of Liverpool, United Kingdom
[c] University of California, Berkeley, USA
[d] Child Guidance Clinic, Superior Court of the District of Columbia, USA

ARTICLE INFO

*Article history:*
Received 22 October 2015
Received in revised form 11 March 2016
Accepted 18 March 2016
Available online xxxx

*Keywords:*
Adolescent Time Inventory-Time Attitudes Scale
Time attitudes profiles
Self-efficacy
Sensation seeking
Alcohol

ABSTRACT

A growing body of research has begun to report on time attitudes which specifically refers to an individual's emotional and evaluative feelings toward the past, the present, and the future. The present study used data from the first wave of a longitudinal cohort study in the United Kingdom. Sample 1 consisted of 1580 adolescents (40% female, 1.7% unreported) in Northern Ireland, while Sample 2 consisted of 813 adolescents (46.7% female, 1.4% unreported) in Scotland. Five similar time attitudes profiles emerged in both countries, with one additional "balanced" profile in Scotland. Results show that there were no substantive differences between profiles in terms of socio-demographic indicators. However, in respect of academic, social and emotional self-efficacy, best results were observed for those with Positive, Ambivalent, and Balanced profiles, with the reverse true for those with Negative, Past Negative, and Pessimistic profiles. Positives were also less likely to report using alcohol.


## 1. Introduction

*Time perspective* has come to be understood as an umbrella term for a broad construct, within which other, more specific constructs exist (Lasane & O'Donnell, 2005). One of these is *time attitudes*, which refers to an individual's emotional and evaluative feelings toward the past, the present, and the future (Andretta, Worrell, Mello, Dixson, & Baik, 2013). Accordingly, what is true of the broad time perspective literature may not necessarily be true when only time attitudes are assessed.

The literature on the relationship between time attitudes and both adolescent behaviors and development has been advanced by the introduction of the Adolescent Time Inventory-Time Attitude Scales (ATI-TA; Mello & Worrell, 2007). Previously, using different assessment techniques and broadly speaking, positive attitudes toward the future have been shown to be significantly and positively correlated with psychological well-being, with moderate positive correlations to optimism and self-esteem and negative correlations to depression and perceived stress (Scheier & Carver, 1985; Wyman, Cowen, Work & Kerley, 1993). Elsewhere, hope was shown to have significant and meaningful positive relationships with self-esteem and positive affect, and an inverse association with negative affect (Snyder et al., 1996). Sensation seeking has been found to be meaningfully and negatively related to future time perspective, and significantly and positively related to present time perspective (Keough, Zimbardo, & Boyd, 1999; Zimbardo & Boyd, 1999).

Moreover, Zimbardo and Boyd (1999) reported statistically significant relationships between self-esteem and their past negative, past positive, and present fatalistic factors in theoretically congruent directions. In terms of the relationship between temporal orientation and alcohol use, results elsewhere have consistently shown that more problematic use of alcohol is significantly associated with a foreshortened future time perspective, and/or greater present focus (e.g., Beenstock, Adams, & White, 2011). Elsewhere, hopelessness in adolescents has been shown to be associated with drinking to cope with negative emotions (Hudson, Wekerle, & Stewart, 2015; Woicik, Conrod, Stewart, & Pihl, 2009); hence, it is reasonable to hypothesize that a negative temporal attitude would be significantly related to alcohol use indicators. Indeed, Linden, Lau-Barraco, and Hollis (2014) reported that having a pessimistic view of one's past may help explain the positive relationship between detrimental mental health symptoms and alcohol-related problems.

The majority of temporal studies have used bivariate or correlational analyses, however, because individuals hold attitudes toward the past, present and future simultaneously (Boniwell & Zimbardo, 2004), some recent studies have included person-oriented analyses, simultaneously accounting for scores on multiple scales using latent profile and heuristic cluster analysis (e.g., Andretta, Worrell, & Mello, 2014). Latent profile and cluster analysis are used to develop categories, so that individuals within categories have multiple, co-occurring time attitudes that are

* Corresponding author at: Centre for Public Health, Liverpool John Moores University, 15-21 Webster Street, Liverpool L3 2ET, United Kingdom.
*E-mail address:* M.T.McKay@ljmu.ac.uk (M.T. McKay).

http://dx.doi.org/10.1016/j.paid.2016.03.060
0191-8869/

as similar as possible and as dissimilar as possible with individuals between categories (Bergman, Magnusson, & El-Khouri, 2003).

Buhl and Linder (2009) reported that those with Optimistic, Balanced, and Ambivalent ATI-TA profiles reported significantly higher scores for life satisfaction, self-efficacy, perspective taking, trust in school, perceived support in school, and teacher/student relationships than adolescents with Tendentially Pessimistic or Pessimistic profiles. Subsequently, Andretta et al. (2014) found that positive ATI-TA profiles were associated with higher self-esteem and educational expectations and lower perceived stress. However, to date, there has been no data published on the association between ATI-TA profiles and adolescent alcohol use. This is an emerging literature and on-going research is needed to investigate the relationship of time attitudes profiles to other constructs.

The present study sought to examine (a) the viability of time attitude profiles in young adolescents, (b) to what extent, these relate meaningfully to a variety of other constructs, and (c) if there were socio-demographic differences in time attitude profiles. We included the third question based on the interesting and counter-intuitive findings of Andretta et al. (2013), who reported that the majority of low SES adolescents in their study had Positive or Balanced time attitude profiles, while the highest frequencies of negative time attitude profiles (i.e., Negatives and Pessimists) and the lowest frequencies of positive time attitude profiles were in high SES adolescents. However, this finding needs to be contextualized within the broader temporal literature. Where other studies examining the relationship between SES and time perspective have examined income, education, and occupation, they have yielded generally low correlations (e.g. Guthrie, Butler, & Ward, 2009; Zimbardo & Boyd, 1999).

Based on previous research, we hypothesized that there would be no association between time attitude profiles and socioeconomic status. As our measures were of alcohol use generally and not *problematic* alcohol use, it was not clear if there would be a relationship with time profiles. However, to the extent that any alcohol use in early adolescence is considered problematic, we hypothesized that adolescents with positive profiles would be less likely to drink than those with negative profiles. We also hypothesized that individuals with more positive profiles would report higher self-efficacy than individuals with more negative profiles.

## 2. Methods

### 2.1. Participants

Data were from two independent samples in the UK. At the time of data collection participants were in school Grade 8 (aged 12–13 years old). Sample 1 consisted of 1580 adolescents (40% females, 1.7% unreported) attending secondary schools in Northern Ireland.

Sample 2 consisted of 813 adolescents (46.7% female, 1.4% unreported) attending secondary schools in Scotland. Both groups of adolescents completed the ATI-TA alongside several other questionnaires as part of a large scale representative longitudinal study. The present study reports on available baseline data.

### 2.2. Measures

The ATI-TA is a 30-item instrument with six 5-item subscales assessing Past Negative, Past Positive, Present Negative, Present Positive, Future Negative, and Future Positive attitudes (e.g., "*I look forward to my future*", or, "*The past is full of happy memories*"). ATI-TA items are scored on a 5-point Likert scale with verbal and numerical anchors (1 = *totally disagree*, 5 = *totally agree*). Recently, using data gathered from adolescents in both Scotland and Northern Ireland, authors (blinded) reported good internal consistency for subscale scores in both samples ($.68 \leq \alpha \leq .83$), good structural validity ($.950 \leq CFI \leq .957$; RMSEA = .057).

The Self-Efficacy Questionnaire for Children (SEQ-C; Muris, 2001) contains 21 items assessing three domains of self-efficacy: (a) academic self-efficacy (e.g., "*How well do you succeed in passing all subjects*?", α current study = .84), (b) emotional self-efficacy (e.g., "*How well can you control your feelings*?", α current study = .78), and (c) social self-efficacy (e.g., "*How well do you succeed in staying friends with other children*?", α current study = .68). Each subscale consists of seven items, and respondents rate their competence in each self-efficacy domain on a 5-point Likert scale (1 = *not at all*; 5 = *very well*). SEQ-C subscale scores have been found to be structurally valid and internally consistent ($\alpha > .80$; Muris, 2001).

Sensation seeking was measured using the four-item Brief Sensation Seeking Scale (BSSS-4; Stephenson, Hoyle, Palmgreen, & Slater, 2003). Responses to the four items (e.g., "*I like to do frightening things*") were given on a 5-point Likert scale ranging from *strongly disagree* (1) to *strongly agree* (5). Scores in the present study were found to be internally consistent (α current study = .79).

Alcohol use was assessed using two questions concerning the consumption of a full alcoholic drink with answer options *yes*/*no*. Participants were asked if they had ever consumed a full alcoholic drink (lifetime use) and if they had consumed one in the past month.

Information was gathered on gender, and free school meals entitlement, an imperfect proxy for low-income families, and thus socioeconomic status (Hobbs & Vignoles, 2007).

### 2.3. Analyses

STATA13 software was used to conduct Ward's hierarchical cluster analysis of ATI-TA scores, and to identify a set of potential solutions using two stopping rules: (a) Caliński and Harabasz (1974) pseudo-*F* index and (b) Duda and Hart's (1973) *Je*(*2*)/*Je*(*1*) index with associated pseudo-*T*-squared. Cluster solutions were validated in several ways. First, *K*-means iterative partitioning was applied to the data to validate Ward's solutions, and to provide cluster assignments for the subsequent analyses. Second, homogeneity of ATI-TA scores within each cluster had to meet the recommended cutoff (i.e., $EV \geq 67$; Bergman et al., 2003). Third, *T*-scores were plotted to examine distinctions between and across potential profiles (see Figs. 1 and 2). SPSS (V21) was used to compute correlations and descriptive data, as well as *t*-tests between profiles and scores on dependent measures. Effect size differences were computed using Hedge's *g*.

## 3. Results

Descriptive data are contained in Table 1: means, standard deviations, subscale intercorrelations, and internal consistency estimates by sample. In all three temporal domains, mean scores for the positive valance are almost twice those for the negative.

Pearson's correlation coefficients (two-tailed) between ATI-TA scores and scores on other measures used in the study, along with descriptive statistics, are displayed in Table 2.

Results show that the correlation coefficients between time attitudes scores and sensation seeking scores were statistically significant, but too small to interpret, suggesting that the constructs are unrelated. The coefficients between time attitudes scores and scores on the self-efficacy domains were all significant, somewhat larger, theoretically meaningful, and, to a large degree, consistent across both samples. Negative time attitudes were associated with lower self-efficacy, with the reverse true for positive time attitudes.

The results of profiling of ATI-TA scores in both samples are displayed in Figs. 1 and 2 below.

In Scotland, a six-cluster solution emerged as best. The clusters were labeled (a) Positives ($n$ = 230 28.3%), (b) Negatives ($n$ = 90, 11.1%), (c) Past Negatives ($n$ = 77, 9.5%), (d) Pessimists ($n$ = 64, 7.9%), (e) Ambivalent (n = 203, 25.0%), and (f) Balanced (n = 148, 18.2%).