Argentine validation of the Consideration of Future Consequences Scale (CFC-14)

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Abstract

Consideration of future consequences is the extent to which people anticipate and are influenced by the potential future consequences of their current behavior. A well-established tool to measure this behavior is the 14-item Consideration of Future Consequences Scale (CFC-14). The CFC-14 has shown appropriate psychometric properties in several languages. This scale comprises two factors: the CFC-Immediate (CFC-I, 7 items) and the CFC-Future (CFC-F, 7 items). The main goal of this study was to assess the psychometric properties and internal consistency of the CFC-14 Scale in Spanish, using an Argentine sample. A second goal was to determine its convergent validity with impulsivity, and determine differences and invariance across gender and age groups. Using a web-based survey, data were collected from 512 participants (75.2% women) aged 13-74 years (M = 30.8). CFA showed a two-factor model as the best solution for the 13-items version (CFI .961, TLI .952, RMSEA .064 90%IC .054/.074, WRMR 0.979). Standardized regression weights (p≤ .05) ranged from .50 to .66 for CFC-F and between .43 and .83 for CFC-I. Composite reliability was also adequate: CFC-F achieved ρ = .80 and CFC-I ρ = .82. There were no differences across gender and age, but there was a progressive invariance between these groups. The CFC-F and UPPS-P subscales correlations were negative and significant, highlighting the negative and moderate correlation between CFC-F and the lack of premeditation (r=-.41). Thus, CFC-14 has adequate psychometric properties in an Argentine population, although more studies are necessary to determine the robustness of these findings.
Key words: consideration of future consequences, Argentine population, impulsivity, psychometric properties, confirmatory factor analysis.

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Validación argentina de la escala de Consideración de las Consecuencias Futuras (CFC-14)

Resumen

La consideración de las consecuencias futuras se define como el grado en el cual las personas anticipan y son influenciadas por las potenciales consecuencias futuras de su comportamiento actual, y una herramienta muy utilizada para medirla es la Escala de Consideración de las Consecuencias Futuras (CFC-14). Esta escala ha exhibido propiedades psicométricas adecuadas en varios idiomas y se encuentra conformada por dos factores: CFC-Inmediato (CFC-I, 7 ítems) y CFC-Futuro (CFC-F, 7 ítems). El objetivo principal de este estudio fue evaluar las propiedades psicométricas y la consistencia interna de la versión en español de la CFC-14 en una muestra argentina, además de identificar las evidencias de validez convergente con la Escala de Impulsividad y la invarianza en función del género y la edad de los participantes. Para esto, se evaluó mediante una encuesta *online* a 512 participantes (75.2 % mujeres) de 13 a 74 años (M = 30.8) y se realizó un AFC en el que se encontró un modelo de dos factores como aquel con mejor ajuste para una versión de la escala de 13 ítems (CFI = .961; TLI = .952; RMSEA = .064; IC 90 % = .054-.074; WRMR = 0.979). Específicamente, los pesos de regresión estandarizados (p ≤ .05) fueron de .50 a .66 para CFC-F y de .43 a .83 para CFC-I; los valores de confiabilidad compuesta fueron adecuados, con un ρ = .80 para CFC-F y un ρ = .82 para CFC-I; no se observaron diferencias estadísticamente significativas en función del sexo y la edad de los participantes, no obstante, hubo una invarianza progresiva entre estos grupos; y las correlaciones entre las subescalas de la Escala de Impulsividad (UPPPS-P) y la CFC-F fueron negativas y significativas, siendo llamativa la correlación negativa y moderada entre la falta de premeditación y la CFC-F (*r* = –.41). De este modo, la CFC-14 mostró propiedades psicométricas adecuadas en una muestra argentina, aunque se necesita de más estudios para determinar la robustez de estos resultados.
Palabras clave: consideración de las consecuencias futuras, población argentina, impulsividad, propiedades psicométricas, análisis factorial confirmatorio.

Introduction

Every day, people make decisions that influence their proximal or distant future. For example, limiting dietary fat intake may lead to improved long-term health, although in the short term, life may be less enjoyable. Similarly, when a student decides to study over the weekend to get better grades, she/he may miss having fun with her/his friends. These decisions can be made on trivial issues, like choosing between orange or apple juice, or on issues that can impact someone's life course, like deciding on a college major (Nigro, Cosenza, Ciccarelli, & Joireman, 2016). People's consideration of future consequences (CFC) plays an important role in their choices between short- and long-term goals. CFC is defined as the extent to which people anticipate and are influenced by the potential immediate and future consequences of their current behavior (Joireman & King, 2016; Strathman, Gleicher, Boninger, & Edwards, 1994).

CFC has been associated with at least four constructs: (a) health behaviors, risk behavior, and academic achievement; (b) aggression; (c) prosocial organizational behavior; and (d) pro-environmental attitudes and behaviors (Joireman & King, 2016; Joireman, Strathman, & Balliet, 2006). Additionally, several studies indicate that higher scores on the CFC scale are associated with increased life satisfaction (Azizli, Atkinson, Baughman, & Giammarco, 2015) and optimism (Geers, Wellman, Seligman, Wuyek, & Neff, 2010).

Recognizing the importance of CFC, Strathman et al., (1994) developed a scale to evaluate it. Studies focusing on its internal consistency, test-retest and internal structure (exploratory and confirmatory factor analysis) revealed a unidimensional structure composed of a latent variable and 12 items. However, despite having adequate psychometric properties, there is no consensus yet on the factorial structure of CFC (e.g. Bruderer Enzler, 2015; Joireman & King, 2016; Toepoel, 2010). Some studies argue that a model composed of two factors is more appropriate than a one-factor solution (Adams, 2012; Bruderer Enzler, 2015; Joireman, Balliet, Sprott, Spangenberg, & Schultz, 2008; Petrocelli, 2003; Toepoel, 2010). In this case, the first factor relates to the consideration of future consequences (CFC-F; e.g. "I consider how things might be in the future, and try to influence those things with my day to day behavior"). On the other hand, the second factor reflects consideration of immediate consequences (CFC-I; e.g. "I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date").

Some evidence indicates that a two-factor structure best fits the data, which explains the relationships between the consideration of future consequences, as a psychological construct, with other psychological and behavioral characteristics, like self-control and temporal discounting (Joireman et al., 2008).

In the two-factor model, the original 12 items (Strathman et al., 1994) were divided into two factors, seven items located on the immediate consequences subscale, and five items on

the future consequences subscale. In a recent update of the scale, Joireman et al., (2012) added two items to the future consequences subscale in order to equalize the number of items per factor, resulting in the CFC-14 scale. These authors reported that a two-factor model showed a better fit than a one factor model, with standardized regression weights ranging from .48 to .75 for CFC-F, and .53 to .86 for CFC-I. Similarly, reliability as measured with Cronbach's alpha coefficient was satisfactory for both subscales (α = .84 for CFC-I, and α = .80 for CFC-F).

Similar results were found in studies conducted in Italian population on a large both sexes sample aged 16- to 75-years-old (Nigro et al., 2016). Although the sample size was different, this study and the one presented here targeted general population. In the same way, a study with French population looked for evidence of factorial structure in a smaller and narrowed sample, aged 17 to 37 years-old comprised of college students (Camus, Berjot, & Ernst-Vintila, 2014). This study, following a different procedure from the study presented here, looked for convergent validity too.

However, despite the fact that a two-factor structure, with seven items per factor, has adequate psychometric properties, some translations favored the original 12-item version. For example, Vásquez Echeverría et al. (2015) observed, contrary to Strathman et al., (1994), that a two factor structure for the 12 items version showed a better fit to the data using a sample of Portuguese university students. However, the reliability indices were similar to those reported in previous studies, indicating a sub-optimal value for CFC-F factor (CFC-F, α = .58; CFC-I, α = .82). In another study (Vásquez Echeverría, Martín, Esteves, Ortuño, & Joireman, in press), the validation procedure was replicated using the 12 item version with young Uruguayan participants and found that a two-factor model showed a better fit than a one-factor model.

On the other hand, beyond testing the scale's psychometric properties, it is important to study the relation of CFC with other traits and sociodemographic variables. With respect to gender differences, there are no univocal results in the literature. Whereas some studies have reported that men and women do not differ significantly in CFC scores (Nigro et al., 2016), others have indicated that men score higher on the CFC-I subscale than women (Camus et al., 2014; Vásquez Echeverría et al., 2015, in press) which would indicate that women have a greater consideration of future consequences (Camus et al., 2014).

Although several studies have reported on the international adaptions of CFC (Camus et al., 2014; Nigro et al., 2016), according the authors of the present study, there are only two in Ibero America, the one by Vásquez Echeverría et al., (2015) for Portuguese population, and that of Vásquez Echeverría et al., (2017) for Uruguayan population. Interestingly, there are no studies of this kind in Argentine population.

Considering the cultural and language use differences between Argentina and the other countries where the CFC-Scale was adapted, it is important and useful to analyze how CFC, as a psychological construct, functions in Argentine population and, how in the near future, it may be related to healthy and risky behavior. Based on this, this study aimed to analyze the factor structure, reliability and validity of the 14 items Consideration of Future Consequences Scale (CFC-14) (Joireman et al., 2012) in a sample of adolescents, youth and adults from Córdoba, an inner city located in the center of Argentina. Additionally, the convergent validity of this scale with the construct of impulsivity was evaluated, using the UPPS-P Impulsivity Scale, a well-established measure of impulsivity with adequate psychometric properties for local population (Pilatti, Lozano, & Cyders, 2015). Finally, some analyzes were carried out in order to explore if there are gender and age differences in the participants' response pattern.

Method

Participants

This sample included 512 participants of both genders (75.2% women) aged between 13 and 74 years *(M* = 30.77, *SD* = 10.06). All were Spanish speakers, recruited via social networks (e.g. Facebook or Twitter) and e-mail, and did not receive any compensation for their participation. Because of the online recruitment process and the lack of compensations, it was not possible to get a sex-balanced sample. Regarding educational level, 35% of the sample had incomplete tertiary/college educational level; 32.8% had complete and incomplete post- graduate education; 25.1% had complete university or tertiary education; 4.7% completed high school and 2% reported having incomplete high school.

Design

This study used an instrumental design in order to adapt the CFC-Scale to Argentine population and to explore its factor structure and reliability (Montero & León, 2007).

Translation Process

Four experts, competent both in the English language and psychological assessment made the translation (direct method) of the original CFC-14 Scale. The first author of this paper compared and compiled the different versions

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making the necessary language adjustments. This process sought to maintain conceptual, semantic and functional equivalence. Conceptual equivalence means that both items (original and translated) measure the same construct. Semantic equivalence refers to the fact that the wording used in the translated version of the item mean the same than the original. Finally, functional equivalence refers to the fact that the actions described in both items, original and translated, have equivalent goals and difficulties in both cultures (Mimura & Griffiths, 2008). Considering these equivalences, all items were translated and no further modifications were made.

Instruments

Consideration of Future Consequences Scale (CFC-14; Joireman et al., 2012). This scale consists of 14 items assessing the temporal consequences of behavior, distant (CFC-F, seven items) and proximal (CFC-I, seven items). All items consist of statements (e.g. "I am willing to sacrifice my immediate happiness or well-being in order to achieve future outcomes") to which participants indicate to what extent they identify with using a Likert scale with seven response options, where 1 indicates "It does not represent me at all" and 7 "It fully represents me". In the English 14-items version, both factors show strong internal structure and consistency with Cronbach's alpha > .80 for both subscales (Joireman et al., 2012).

UPPS-P Impulsivity Scale (Verdejo-García, Lozano, Moya, Alcázar, & Pérez-García, 2010). The version used was adapted to Argentine population by Pilatti et al., (2015), consisting of 59 items that measure five distinct dimensions of impulsive personality: *negative urgency* (e.g. "I have trouble resisting my cravings for food, cigarettes, etc."), *lack of perseverance* (e.g. "I tend to give up easily"), *lack of premeditation* (e.g. "I am not one of those people who blurt out things without thinking"), *sensation seeking* (e.g. "I generally seek new and exciting experiences and sensations"), and *positive urgency* (e.g. "When I am very happy, I tend to do things that can cause problems to my life"). All items use a Likert scale with four response options, from 1 which means "strongly agree" to 4, "strongly disagree". In this study, the Spanish version by Verdejo-García et al., (2010) was used. The UPPS-P Argentine Spanish version has adequate reliability values for all subscales (Positive urgency α=.93, Negative urgency α=.82, Lack of premeditation α=.83, Lack of perseverance α=.74, and Sensation seeking α=.86 (Pilatti et al., 2015; Pilatti, Rivarola Montejano, Lozano, & Pautassi, 2016).

Procedure

Data collection was carried out during the month of February 2016. Before completing the questionnaire, participants received information about the purpose of the study and gave their informed consent. Then, at the time of answering the questions, they received electronic notices for each missing response, in order to minimize the probability of obtaining incomplete data. In total, completing the questionnaire took approximately 20 minutes.

Data Analysis

Firstly, the mean, standard deviation, kurtosis and skewness of the data were calculated. As a criterion for assessing skewness and kurtosis, values between ±1.00 were considered excellent and values between ±2.00 were acceptable (George & Mallery, 2011). Univariate outliers were identified by calculating Z scores (z scores> ± 3.29 were considered atypical) and multivariate analysis by Mahalanobis's distance test *(p <*.001). The distribution of missing values was evaluated in order to assess whether it responded to a random distribution using IBM-SPSS 19.0 (Tabachnick & Fidell, 2011).

A confirmatory factor analysis (CFA) was performed in order to evaluate the internal structure of the CFC-14 scale. The Mplus 6.12 statistical software was used because it allows to apply the weighted least squares (WLS), which is considered the most appropriate when dealing with categorical or ordinal data -Likert scales, for example- (Flora & Curran, 2004). Two factorial models were considered: a unidimensional model of one latent variable and 14 items as indicators (Model 1) and another model of two (correlated) latent variables (CFC-I and CFC-F) with seven items by factor (Model 2). To evaluate each model, the cases were segmented randomly.

Subsequently, Chi-square, the comparative fit index (CFI), the Tucker-Lewis Index (TLI), the root mean square error of approximation (RMSEA), and the weighted root mean square residual (WRMR) were used to assess model fitting. Values greater than .90 for CFI and TLI were evaluated within a range between acceptable to excellent fittings. Values between .05 and .08 for the RMSEA are acceptable. The WRMR is a fit index that is believed to be better suited to categorical and ordinal data. WRMR values less than 1.0 depict a good fitting model (Yu & Muthen, 2002).

To evaluate internal consistency and to overcome the limitations of Cronbach's alpha statistics regarding its dependence on the number of items and correlations between them (Raykov, 2012), the composite reliability (ρ) was also used. Values equal or above ρ = .70 were considered acceptable (Nunnally, 1978). To assess convergent validity,

Pearson's correlation analyses between the two CFC subscales (immediate and future) and all the UPPS-P subscales were performed. The significance level was set at *p* <.05. To examine gender and age differences across CFC-Immediate and –Future scores a univariate ANOVA was used.

Additionally, factorial invariance was assessed regarding participants' sex and age. To that, multigroup CFA were carried out using WLSMV estimator. Three levels of invariance were tested: configural, metric and scalar. To compare models, the criteria were Δχ², although ΔCFI/ΔTFI > .01 y ΔRMSEA > .015 were considered when it was necessary.

Results

This section contains different procedures carried out to analyze data. Initially, the procedures performed to prepare data for the following statistical processes are shown. Subsequently, the Confirmatory Factorial Analysis is exhibited, with goodness of fitness indices and how subscales discriminate between each other. Following that, the internal consistency indices and convergent validity analysis are presented. Finally, the results regarding CFC-14 Factorial Invariance are displayed.

Data preparation

Missing values for CFC-14 items ranged from 0.4% (item 2) to 2% (item 13). Because the percentage of missing data did not exceed 5% (Schafer, 1999), it was decided to replace them with the most frequent answer within each item. There were no univariate outliers (*z*> ±3.29). However, 17 cases were identified as multivariate outliers. Whereas the presence of atypical cases may distort some results, they were retained in order to favor generalization (Hair, Anderson, Tatham, & Black, 1999). Table 1 shows the mean, standard deviation, skewness and kurtosis for each item (see Table 1). With respect to skewness and kurtosis, 12 items showed values between ±1, while two items showed values below ±2. The subscales scores were calculated using the sum of the items of the respective factors divided by the number of items per factor; this method eliminates differences between the subscales due to the uneven number of items in each (Vásquez Echeverría et al., 2017).

Missing data for the UPPS-P ranged from 14.3% (item 1, for example) to 14.8% (item 58, for example). Considering that these values exceeded the 5% threshold (Tabachnick & Fidell, 2007), the pattern of missing values was checked using Little's Test. Results showed that missing values followed a random pattern (MCAR; χ2 = 293,819, df = 348, *p*

= .984), therefore missing data were imputed by substituting them with the statistical mode. Thus, the 37 univariate and 78 multivariate atypical cases were retained (Hair et al., 1999). Regarding skewness and kurtosis, 47 items presented values between ±1.00, considered as excellent, 11 items showed values between ±2 and a single item presented a value > ±2 (George & Mallery, 2011). Each subscale score was calculated as directed by Verdejo-García et al., (2010).

Confirmatory Factor Analysis

Results for model 1 (single factor) did not indicate an adequate fit to the data (CFI .761, TLI .718, RMSEA .146 90% IC .138/.155, WRMR 2.125). Standardized regression weights *(p ≤ .05)* ranged from .19 to .81. Model 2 fit slightly better than model 1, achieving a satisfactory fit (CFI .930, TLI .916, RMSEA .080 90% IC .071/.089, WRMR 1.235). Standardized regression weights *(p ≤ .05)* ranged between .49 and .75 for CFC-F and between .10 and .83 for CFC-I.

Particularly, since item 5 had a low factorial load (.10), it was excluded and the model was re-calculated (CFI .950, TLI .939, RMSEA .071 90% IC .063/.082, WRMR 1.086). Also, because item 13 and item 14 were highly correlated, it was decided to inter-correlate them, and re-evaluate again the fitting model (CFI .961, TLI .952, RMSEA .064 90% IC .054/.074, WRMR .979). Standardized regression weights *(p ≤ .05)* ranged from .50 to .66 for CFC-F and between .43 and .83 for CFC-I. (See Figure 1 for an inspection of standardized *beta* weights). These results are summarized in Table 2.

Although the label CFC-14 was used, the following analyses were performed using a 13-item version, without item 5.

Internal consistency

Composite reliability values were satisfactory for the different models analyzed. When considering a general measurement of the CFC scale (all items combined after the immediate items were recoded), a *p* value = .84 was achieved (Model 1). Meanwhile, when both factors were considered separately (Model 2), the CFC-F subscale achieved a *ρ* value = .81 and the CFC-I subscale showed a *ρ* value = .79. When item five was dropped from the CFC-I subscale, CFC-F achieved *ρ* = .80 and CFC-I, *ρ* = .82; (see Table 2).

Convergent validity

As shown in Table 3, significant and positive correlations were found between CFC-I subscale and all UPPS-P subscales, except for *sensation seeking,* which was not

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Table 1.

Descriptive statistics of CFC-14 scale (Spanish version).

|	Mean	Standard Deviation	Skewness	Kurtosis
1. I consider how things might be in the future, and try to influence those things with my day-to-day behavior. (*Considero cómo serán los eventos en el futuro y trato de influenciar esos eventos con mi comportamiento diario.* F)	4.81	1.67	-0.52	-0.33
2. I often engage in a particular behavior in order to achieve outcomes that may not result for many years (*A menudo me comporto de una manera particular para obtener resultados que no se verán hasta pasados muchos años* F)	3.92	2.00	-0.03	-1.20
3. I only act to satisfy immediate concerns, figuring the future will take care of itself (*Solo actúo para satisfacer mis preocupaciones inmediatas, pienso que en el futuro se resolverán solas.* I)	2.57	1.75	0.96	-0.11
4. My behavior is only influenced by the immediate outcomes of my actions (i.e., a matter of days or weeks) (*Mi comportamiento solo es influenciado por los resultados inmediatos de mis acciones (por ejemplo: un problema de días o semanas* I)	3.23	1.80	0.50	-0.74
5. My convenience is a big factor in the decisions I make or the actions I take (*Mi beneficio es un factor importante en las decisiones que tomo o en las acciones que realizo.* I)	4.50	1.67	-0.32	-0.58
6. I am willing to sacrifice my immediate happiness or wellbeing in order to achieve future outcomes (*Estoy dispuesto/a a sacrificar mi felicidad o bienestar inmediato para lograr resultados futuros.* F)	4.61	1.85	-0.49	-0.73
7. I think it is important to take warnings about negative outcomes seriously even if the negative outcome will not occur for many years (*Pienso que es importante tener precaución sobre los resultados negativos aún si no van a ocurrir por muchos años.* F)	4.81	1.73	-0.49	-0.71
8. I think it is more important to perform a behavior with important distant consequences than a behavior with less important immediate consequences (*Creo que es más importante realizar algo que tendrá importantes consecuencias a largo plazo que un comportamiento con consecuencias inmediatas menos importantes.* F)	4.96	1.65	-0.56	-0.34
9. I generally ignore warnings about possible future problems because I think the problems will be resolved before they reach crisis level (*Generalmente ignoro advertencias sobre posibles problemas futuros porque pienso que los problemas se resolverán antes de llegar a un nivel crítico.* I)	2.84	1.84	0.71	-0.61
10. I think that sacrificing now is usually unnecessary since future outcomes can be dealt with at a later time (*Pienso que sacrificarse ahora por lo general es innecesario ya que situaciones futuras podrán ser resueltas más adelante.* I)	2.35	1.58	1.10	0.40
11. I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date (*Solo actúo para satisfacer preocupaciones inmediatas, calculando que más adelante me preocuparé por problemas futuros que puedan ocurrir.* I)	2.82	1.69	0.73	-0.33
12. Since my day-to-day work has specific outcomes, it is more important to me than behavior that has distant outcomes (*Dado que mi trabajo cotidiano tiene resultados específicos, para mí eso es más importante que la conducta que tiene resultados distantes.* I)	2.86	1.63	0.63	-0.27
13. When I make a decision, I think about how it might affect me in the future (*Cuando tomo una decisión, pienso en cómo podría afectarme en el futuro.* F)	5.63	1.56	-1.17	0.79
14. My behavior is generally influenced by future consequences (*Por lo general, mi comportamiento está influenciado por las consecuencias futuras.* F)	4.72	1.61	-0.51	-0.28

Note. F= Future; I= Immediate
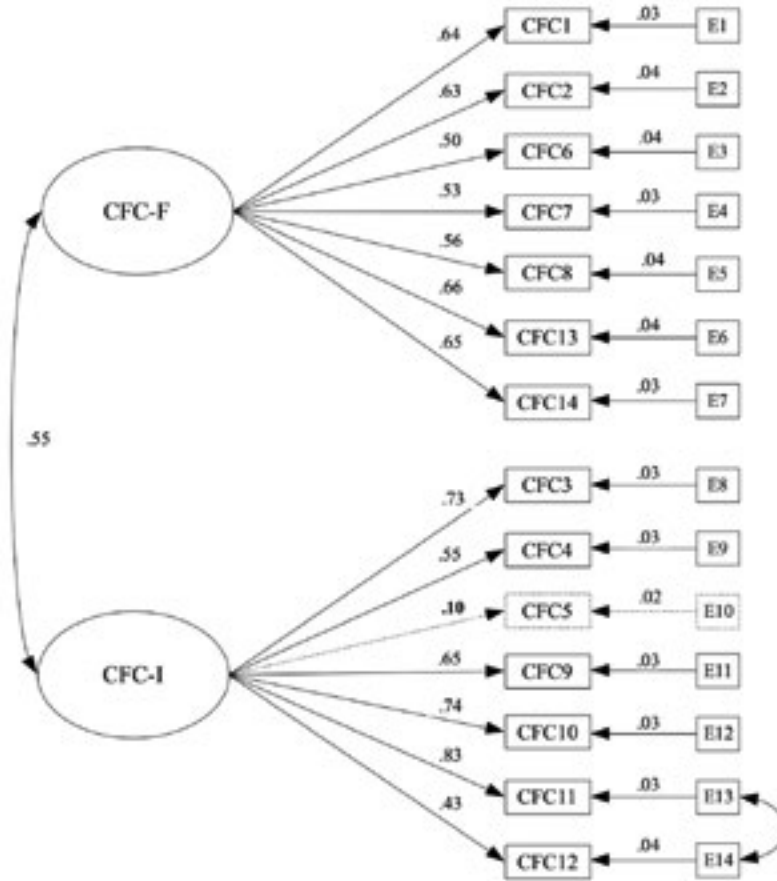
Figure 1. Confirmatory factor analysis of items13 and 14 of the CFC scale. All paths were significant *(p <.05)*, and all items loaded in their expected factor, except the one in the dotted line path (CFC5).

Table 2

Composite reliability (ρ) and fit indices for the alternative models of CFC-14

Model	ρ CFC-F / CFC-I	χ^2	df	CFI	TLI	RMSEA (90% CI)	WRMR
One-factor	.84	918.093*	77	.761	.718	.146 (.138/.155)	2.125
Two-factor (14 items)	.81 /.79	322.291*	76	.930	.916	.080 (.071/.089)	1.235
Two-factor (13 items)	.80 / .82	195.678*	63	.961	.952	.064 (.054/.074)	0.979

Note. CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = mean square error approach; IC = interval confidence; WRMR = weighted average residual quadratic (WRMR). * *p* <.001

significant. On the other hand, between the CFC-F subscale and UPPS-P subscales all correlations were negative and significant, highlighting the negative and moderate correlation between CFC-F and the lack of premeditation, a dimension strictly related to intertemporal decision making.

In addition, the relationship between scores on different subscales and age was analyzed and was found to be not significant. Similarly, no differences were found across gender in scores on both subscales

Factorial Invariance

Invariance by sex analysis. Initially, it was not possible to estimate the invariance using the original seven-points answer scale, due to the fact that in some groups the frequency in the extreme options was near or equal zero, and this is not compatible with WLSMV estimator. Consequently, it was necessary to re-scale answer options from seven to five points (category 1 and 2 and 6 and 7 were collapsed).

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Table 3.
Correlation matrix between the CFC-14 subscales and the UPPS-P scale.

	Negative Urgency	Lack of Premeditation	Lack of Perseverance	Sensation Seeking	Positive Urgency
CFC-I	.22**	.18**	.26**	.07	.25**
CFC-F	-.09*	-.41**	-.29**	-.13**	-.09*

*Note. N = 512. * p ≤ .05 ** p < .01.*

CFA-GM were carried out with respect to sex with the five-points scale. Firstly, the configural model showed an acceptable fit (χ^2 = 295.026; df = 130; p = .000; CFI = .930; TLI = .916; RMSEA = .071 90% CI = .060 - .081; WRMR = 1.407), Secondly, when the metric model was tested, an excellent fit was observed (χ^2 = 258.892; df = 141; p = .000; CFI = .950; TLI = .945; RMSEA = .057 90% CI = .046 - .068; WRMR = 1.430). Finally, the scalar model showed an excellent fit too (χ^2 = 298.161; df = 193; p = .000; CFI = .955; TLI = .964; RMSEA = .046; CI 90% = .036 - .056; WRMR = 1.593), similar to the metric model. Additionally, the scalar model was not significantly different from the metric model ($\Delta\chi^2$ = 58.759; df = 52, p = 0.2417). Consequently, it is possible to assume there is invariance between groups according to sex.

Invariance by age. To analyze invariance by age, the sample was divided into two groups: Youngsters (18- to 25-years old) and adults (26- to 60-years old), and then CFA-GM were carried out. First, the configural model showed an acceptable fit χ^2 = 266.613; df = 130; p = .000; CFI = .941; TLI = .929; RMSEA = .064 90% CI = .053 - .075; WRMR = 1.287). Then, the metric model showed excellent fitting values (χ^2 = 245.424; df = 141; p = .000; CFI = .955; TLI = .950; RMSEA = .055 90% CI = .043 - .065; WRMR = 1.364), which did not significantly differ from the configural model $\Delta\chi^2$ = 11.768; df = 11, p = 0.3813). Finally, the scalar model fit even better (χ^2 = 286.126; df = 193; p = .000; CFI = .960; TLI = .967; RMSEA = .044 90% CI = .032 - .054; WRMR = 1.537), and did not differ significantly from the metric model ($\Delta\chi^2$ = 59.704; df = 52, p = 0.2160). Consequently, it was possible to assume there was invariance between age groups.

Discussion

Everyday decisions, whether on trivial or more important issues, have an effect in the near and/or distant future. However, people differ in their regard for the consequences of their decisions. This distinctive feature is called Consideration of Future Consequences (CFC) and is defined as the extent to which people consider and are influenced by potential future consequences of their current behavior (Nigro et al., 2016; Strathman et al., 1994).

The aim of this work was to adapt the Consideration of Future Consequences Scale (CFC-14) -14 items version- to a general population from Córdoba, Argentina. The achievement of this aim had two main goals. The first one intended to fill the gap in the instruments available in Argentina to assess this construct. As was stated in the Introduction, there are several CFC-14 adaptations to other countries, but as literature recommends (Carretero-Dios & Pérez, 2007; Pilatti, Godoy, & Brussino, 2012) it is necessary to make the required adaptations in order to know how an instrument works in a culture different from the one in which it was originally developed. The second goal was to be able to assess properly how people make their decisions about health, environment, and risk behavior. Thus, this work is part of the initial stages of a larger project, intended to develop a structural equation model on how and why adolescents and young people make decisions and take risks in their everyday life, considering personal and environmental factors.

Contrary to initial reports for the original CFC 12 item version (Strathman et al., 1994), the one-factor model does not fit the data properly. The present study found the CFC-14's internal structure to be similar to that of previous reports (Joireman et al., 2008; Nigro et al., 2016): the two factor model, one taking into consideration immediate consequences (CFC-I, seven items) and another one bearing in mind future consequences (CFC-F, seven items), proposed by Joireman et al., (2012) presented a proper fit.

However, this research found that item 5 ("My convenience is a big factor in the decisions I make or the actions I take") belonging to the CFC-I factor, did not provide a significant contribution to it. Vásquez Echeverría, Martín, Ortuño, Esteves, & Joireman, (2017) and Vásquez Echeverría et al. (2015) found similar results for this item. One explanation could be found in the original version of the scale. The wording of item 5 refers to the term "convenience", which is difficult to translate and adapt to Latin - based languages because of its ambiguity. Thus, following the recommendations of Vásquez Echeverría et al., (2017), this item was removed and the factorial structure was re-evaluated, slightly improving fitting indexes.

On the other hand, convergent validity between CFC and impulsivity was examined by using UPPS-P Impulsivity Scale (Verdejo-García et al., 2010). This scale consists of five dimensions, two of them related to the consideration of subjective temporality: *lack of premeditation* and *lack of perseverance*. *Lack of premeditation* is most strictly related to the temporary dimension and it is defined as the tendency to act without considering the consequences of current behavior (i.e. to start a project without knowing how to proceed). *Lack of perseverance* is defined as a difficulty to stay on a task that can become difficult or boring (Gagnon, Daelman, Mcduff, & Kocka, 2013).

While *lack of perseverance* is more often associated with attention problems, failure to persist in a task that has long - term benefits (i.e. studying for an exam or follow a low - fat diet) could involve not considering future consequences of current behavior and focusing only on the nearest consequences in time (Nigro et al., 2016). These results found in the correlation between scores on CFC-F and the dimensions *lack of premeditation* and *lack of perseverance*, support the idea that these constructs are associated. In other words, those who do not premeditate their actions, and those who do not persevere in them, do not display high scores on the CFC-F subscale.

The relationship between age and CFC-14 scores was not significant. It is possible that the absence of significant findings in the present study and the one by Vásquez Echeverría et al., (2015), is due to the fact that all participants in both studies were older than 18 years. In Vásquez Echeverría et al.'s study (2015), age and CFC score were indeed correlated only when considering participants ages 13 and older. Similarly, other studies have found a significant association between age and CFC. For example, Nigro et al. (2016) found a moderate negative correlation between age and overall scores (14 items) in an older subsample of participants aged 16 to 19 years. Moreover, when they analyzed the scores on each subscale, adults scored higher than adolescents in the CFC-F subscale.

With respect to the external validity of this study, it can be mentioned that the uneven gender ratio in the present study's sample–with more women than men- undermine the significance of the findings. In addition, the educational level of the participants was not heterogeneous, since individuals with complete and incomplete high school were very few in relation to the entire sample, mostly composed of tertiary/college educational level or higher. Thus, these issues mentioned previously, added to the mode of administration of the scale, may have affected the representativeness of these results regarding general population. However, the fact that not all participants were university students when responding to the study favors generalizability of results.

Moreover, having compared different factor solutions provides evidence that the two-factor model is best suited for general population at the local level, which also coincides with results of other studies previously reviewed (see for example, Nigro et al., 2016).

On the other hand, the progressive factorial invariance analyses show that, despite the problems reported to make up a sample with balanced groups regarding sex and age, it is possible to compare scores between age and sex groups, because it can be argued that there is a progressive factorial invariance between the different groups in the sample. Factorial invariance is important when groups are compared in terms of sex, age and culture. This means that scores achieved by each group are comparable between each other, because they represent the same and differences can be interpreted as differences in the characteristics and not attributable to unknown sources (Dominguez-Lara & Medrano, 2016).

These results are just the first of a series of studies aimed to evaluate CFC, the characteristics of this construct and instruments to measure it. Specifically, it is necessary to advance in the assessment of convergence between CFC scores and experimental tests of *time perspective*, conceptualized as "the non-conscious process whereby the continual flows of personal and social experiences are assigned to temporal categories, or time frames, that help to give order, coherence, and meaning to those events" (Zimbardo & Boyd, 2015). In the same way, it is necessary to assess the stability of scores through test-retest designs (Nigro et al., 2016), and to analyze the differences of CFC in samples with different personality traits and characteristics such as age, interests and political ideology, among others, in local population (Bruderer Enzler, 2015; Gick, 2014; Joireman & King, 2016; Joireman et al., 2012).

Finally, this work offers evidence on the validity of the Consideration of Future Consequences Scale, which allows for an appropriate assessment of the construct in a local population. In this sense, if attention is paid to how people (teenagers, young and adults) think and how their context and historical backgrounds shape their conditions of thinking and decision-making, the design and implementation of interventions and policies focusing on choice and decision-making can be improved (Banco Mundial, 2015; Joireman & King, 2016). Thus, instruments expanding our knowledge about how decision-making varies across specific groups and contexts can help improve the design and impact of targeted health behavior interventions aimed at ameliorating the quality of life of specific populations.

Consideration of Future Consequences is a personality trait defined as the extent to which people anticipate and are influenced by the potential immediate and future

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consequences of their current behavior (Joireman & King, 2016; Strathman et al., 1994). In this way, measuring it accurately is important in order to develop appropriate interventions regarding peoples' health and wellbeing as well as considering how personal differences in political, environmental and social values may shape different types of present and future behavior. An Argentine translation of the CFC-14 (Joireman et al., 2012) is useful because of the language differences with other Spanish translations (Vásquez Echeverría et al., 2017) already available. Results presented here shows the CFC-14 Argentine version has adequate psychometric properties in a general sample. Items loaded in two separate factors, one concerning to more distant consequences (CFC-Future), and another one concerning nearer consequences (CFC-Immediate). Item five showed problems and was dropped out. This was already reported in other translations (Vásquez Echeverría et al., 2015, 2017) and may be due to the wording in Spanish. Finally, the study of discriminant validity shows CFC is a different construct from impulsivity, measured with the UPPS-P Impulsivity Scale, which has excellent psychometric properties in Argentinian population (Pilatti et al., 2015). The factorial invariance results evidence that it is possible to compare scores in different groups, at least regarding age and sex. This is a key finding because it allows us to continue using this instrument as part of a larger battery, intended to establish difference in time processing in various populations. Thus, the Argentine version of CFC-14 is an appropriate instrument to assess the consideration of future consequences trait in local population.

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