The "Will to Exist, Live and Survive/Fight" (WTELS-F) Scale Initial Short Version: Cross-Cultural Validation of Its Reliability, Structural, Predictive and Incremental Validity

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Abstract

A novel short form scale was recently introduced in the literature to evaluate the coping construct of the will-to-exist-live-and survive/fight. The scale proved to have good psychometrics in an Egyptian sample. In the current study, we evaluated cross-culturally the meta master motive coping of "will-to exist-live-survive" (WTELS). Using confirmatory factor analysis and multi-group invariance on a combined five samples (N = 1566) from Western (the UK, N = 178), and non-Western countries (Egypt (N = 490), Turkey (N = 420), Kuwait (N = 300), and Syria (N = 179)), we tested the one-factor structure previously found for WTELS measure and its invariance across genders, age, and national groups. The one-factor was found to have a good fit with the data and was strictly invariant across genders, age groups, and Western and non-Western sub-samples. PROCESS macro found that WTELS have strong direct and indirect positive effects on posttraumatic growth. Its indirect effects were mediated by reappraisal and self-esteem and moderated by spirituality. WTELS had strong negative effects on mental (psychopathology, PTSD, depression, existential anxieties, and suicidality) and physical health. Further, stepwise regression provided evidence of the WTELS incremental validity in PTSD reduction. The results validated the "WTELS" scale cross-culturally and the model was found to be a powerful and deep motive for coping behind the emergence of PTG, and better mental and physical health.

1. Introduction

Motivation deficits, such as apathy and negative symptoms, are pervasive in both
neurological and psychiatric diseases (e.g., depression, psychotic spectrum dis-
orders, and neuropsychiatric disorders) (Reddy, Horan, & Green, 2015; Yang et
al, 2014). Such deficits in motivation significantly impact functional outcomes
(Green, Hellemann, Horan, Lee, & Wynn, 2012). Suicidality conceptually repre-
sents one of the negative extremes that contrast the "will to exist-live and survive"
(WTELS-F). The relationships of WTELS-F as a master or meta-motivation with
different dimensions of psychopathology, PTSD, and identity-related existential
anxieties were rarely explored.

WTELS-F included three related terms: Will to live (Carmel, Shrira, & Shmotkin,
2013; Freud, 1957; Varna Garis, 1977), will to survive and fight for survival (Kira
et al., 2014a; Kira et al., 2014b), and will to exist or the existential heuristic of "to
be or not to be".

Motivation can be defined as the function that orients and activates the beha-
vior according to two attributes: a content (the goal) and a quantity (the goal
value) (Pessiglione et al., 2017). However, what determines the goal's value is a
meta-motivation factor, i.e., the will and motivation to achieve, or meta-motivation
networks that cluster around will-to-live, exist, persist, succeed or fight and sur-
vive the challenges of life.

"Will (and volition) to exist-live and survive" (WTELS-F) is the master intrin-
sic positive motivator (or meta-motivator), and is at the center stage in the
science of motivation (Kira, Shuwiekh, Kucharska, Al-Huwailah, & Moustafa,
2019b). This master meta-motivator is, unfortunately, missing in current theo-
ries and scientific studies of motivation. WTELS-F is the intrinsic innate motiva-
tion to exist, live, survive, self-actualize, and succeed/thrive, and the drive, te-
nacity, and volition (determination and persistence) to exist, live, fight and sur-
vive (to continue living), and thrive. WTELS is an existential phenomenon that
has personal and social dimensions that are embedded in the person's agentic
executive self and her/his developing identities (Kira, Lewandowski, Chiodo, &
Ibrahim, 2014b). Will and human volition are related to voluntary action and
conscious awareness as well as to the unconscious motive to continue and
self-assert (Haggard, 2008). While its vigor force fluctuates, it is mobilized upon
exposure to relevant threats and adversities. Will or volition comprises various
mechanisms that are needed to obtain predefined goals (Corno & Kanfer, 1993).
Will or volition, a non-cognitive factor that is related to executive action control
(executive self), found to significantly contribute toward academic achievement

above and beyond cognitive and personality factors (i.e., fluid intelligence, conscientiousness) (Schlüter et al., 2018).

WTELS precedes and spread into basic motivations and the related goals pursuit networks (e.g., motivations to attach, to belong, to separate/individuate, to self-fulfill, satisfy different needs, and to self-actualize), and the architecture of the person's specific conscious and unconscious goal-systems. The construct of WTELS-F is an integrative construct that incorporates different but intimately related conceptual paradigms of the agency, will, identity, physical living, surviving adversities, resisting and fighting, thriving through self-fulfillment and self-actualization, and meaning-making of self- and existence, resilience and hardiness, and posttraumatic growth (PTG) (reviewing all these paradigms is beyond the scope of this article). WTELS-F has cognitive, emotional and behavioral, and mental health implications. We will try to demonstrate convincingly that the WTELS-F concept is a powerful tool when it comes to the understanding of dynamics that are at the center stage in the sciences of motivation and coping with adversities. That will include its mental and physical health consequences, its significance to posttraumatic growth (PTG), positive self-evaluations, and the various self-regulation strategies that have been suggested to help people respond to adversities and commit to pursuing and attaining their life projects. In a nutshell, we assume that the emotion regulation strategy of reappraisal as well as self-esteem and spirituality (and religiosity) will be some factors that will contribute to mediating WTELS-F's positive coping effects on mental health, while physical health can moderate these mediations. Age, gender, and a group of belonging may play different roles in these intricate dynamics.

Interfaith spirituality, spirituality that is uncontaminated with a specific religion or cultural tradition, includes the personal heuristics of, regardless of their different belief systems, the existence of a sacred creating force that they use to make sense of humans' finite existence and cope to existential threats, and the ability of self-transcendence (Kira et al., 2019a). Interfaith spirituality is contrasted, but not opposed to the centrality of religiosity and adherence to specific religious rituals and commitments. Interfaith spirituality and religiosity are some of the important factors that may mediate the positive effects of WTELS-F on mental health in believers or spiritual individuals.

A recent study on an Egyptian sample developed the model of WTELS-F conceptually in this direction and validated the initial new short measure for this phenomenon (Kira, Shuwiekh, Kucharska, Al-Huwailah & Moustafa, 2019b) (for the measure see **Appendix 1**). The developed measure was found to have an alpha reliability of .823, test-retest (4 weeks interval) of .824. Exploratory and confirmatory factor analyses found that the measure has a one-factor structure that had an excellent fit with the data in the Egyptian sample which provided evidence of its structural validity. Multigroup measurement invariance indicated that the confirmatory structure of WTELS-F is strictly invariant between genders, religious groups (Muslims and Christians), age groups (adults and adolescents), and geographical regions (Upper Egypt, Middle Egypt, and Cairo) which

provided evidence of its stability. WTELS-F was found to have strong positive effects on posttraumatic growth (PTG). However, the mediator and moderator variables of its impact on PTG were not clear. WTELS-F was found to be positively associated with self-esteem, and reappraisal and negatively associated with depression, existential annihilation anxieties (EAA), psychopathology, PTSD, and suicidality. It was negatively associated with internalizing, externalizing, and thought disorders and executive function deficits. This pattern of associations was strictly invariant across groups. Recent studies found that WTELS-F is as effective coping strategy for COVID-19 (Kira et al., 2021d; Kira et al., 2022; Kira & Shuwiekh, in press). Another study found that WTELS-F and interfaith spirituality are two powerful coping strategies used by believers (Kira, Özcan, Shuwiekh, Kucharska, Al-Huwailah, & Bujold-Bugeaud, 2021c). We assume that WTELS-F, as a coping strategy has a unique role in lowering PTSD and alleviating its symptoms.

The proposed coping strategy of WTELS-F provides a broader and more thoughtful conceptualization and has the promise to bring into focus more effective prevention and trans-diagnostic intervention strategies that have been taken for granted for a long in clinical and motivation sciences.

The goal of the current study was to validate the new measurement and associated conceptual model of WTELS-F, cross-culturally and to test its invariance across Western and non-Western cultures and different gender and age groups within different cultures. Another goal was to explore the direct and indirect (mediated effects) of WTELSF, as the master or meta-motivator, on PTG, PTSD, depression, suicidality, existential anxieties, and psychopathology in a combined sample of Western and non-western samples to further establish its predictive validity.

Research Hypotheses

1) The previously developed measure of WTELS-F has adequate alpha reliability as well as stability in Western and non-Western subsamples.

2) The WTELS-F measure's one-factor structure is invariant across genders, age groups, and Western and non-Western samples?

3) WTELS-F, the master motive, predicts directly and indirectly (through mediators) higher PTG and lower existential annihilation anxieties (EAA), depression, PTSD, psychopathology, and especially suicidality. Spirituality, emotion regulation, and self-esteem mediate its indirect effects in both Western and non-Western samples.

4) WTELS-F scale has an incremental validity in lowering PTSD above the contribution of self-esteem, PTG, and reappraisal in the combined multi-national sample, while existential annihilation anxiety is the main predictor of PTSD.

2. Method

2.1. Participants

Participants (N = 1566) included five subsamples from different five countries:

Egypt (N = 490), Turkey (N = 420), Kuwait (N = 300), the UK (N = 177), and Syrians/Palestinians (N = 179). The five samples potentially represent different levels of "will to exist live and survive" motivation which may make them ideal to test the assumptions of the model. The recruitment strategies across the different samples were similar using a mix of recruiting and electronic platforms. While participants from Egypt, Kuwait, and Turkey included adolescents (about 20%), the Syrian and the UK participants included only adults. The participants represent intense variations of cultural, religious and economic, and social affiliations, as well as different levels of exposure to stressors and traumatic stressors. They included 51.4% of males. Age ranged from 14 - 75 (M = 25.63, SD = 9.02), with 14.6% adolescents (under 18 years of age). It included 59.5% students, 17.6% employees, 8.5% workers, 2.9% professionals, 1.2% merchants, 2%retired, and 9.6% other occupations. For marital status 24.4% were married, 71.8% were single, 1% were widows, 1.3% were divorced and 1.5% had other marital statuses. For the level of education, the sample included 5.8% with minimum reading and writing skills, 8.6% had an elementary level, 4.8% were middle school, 16.7% high school, 57.8% college, and 6.3% graduate level. For income, 3.6% reported being very poor, 8.6% were poor, 71.5% reported having enough income, 13.1% reported having high income and 3.25% reported being of very high income. For religion, 70.5% were Muslims, 18.9% were Christians, and 10.6% were either atheists, agnostics, or do not believe in any religion. Table 1 includes the main characteristics of the sub-samples (Kira, Özcan, Shuwiekh, Kucharska, Al-Huwailah, & Kanaan, 2020).

Table 1. The detailed demographics of each of the five sub-samples.

variable	Egypt (N = 490)	Turkey (N = 420)	Kuwait (N = 300)	Syrians (N = 179)	UK (N = 177)
Age	Age ranged from 14 to75, Mean = 26.03, SD = 10.90, 20.4% adolescents.	Age ranged between 15 and 64 (M = 23.20, SD = 8.68) from which 18.9% were adolescents	age ranged from 15 - 50 (M = 26.37, SD = 8.50), from which 18.7% were adolescents	Age ranges between 19 and 54 (M = 28.7, SD = 6.16)	Age ranged between 18 and 40, M = 25.89, and SD = 5.66
Gender	41.4 males	72.4% males.	39% males	62.6% males	60.7% females
Religion	49.6% Muslims and 50.4%	94.3% were Muslims and the balance was from other religious affiliations	99.7% Muslims, .3% Christians	90.5% were Muslims, .6% Ismaili Muslim, 2.2% Christians, 2.2% atheists, .6% agonists, 2.2% identified with no religion, and .6% identified themselves as humanists	24.2% were Christians, .6% were Jewish, 4.5% other religions, and 70.8% with no religious affiliation
Education	7.9% elementary level, 1.8% middle school level, 27.3% high school level, 51.8% college level, and 11% graduate studies level	5.9% elementary, 2.9%middle school, 17.5% high school, 71.7% college, and 1.9% graduate level	4.7% elementary school, 20.6% high school, 72.7% college, and 2% graduate students	.6% was elementary school, .6% middle school, 8.4% high school, 74.9% had an undergraduate degree, and 15.6% have a graduate degree	21.3% had a high school, 57.3% had an undergraduate degree, and 21.3% had a postgraduate degree

Continued

Marital Status	28.6% married, 68.8% single, 1.6% widowed, .4% divorced, .06% other	15.5% were married, 82.6% were single and 1.9% had other marital statuses	35% married, 60.3% singles, 3% divorced, and 1.7% other.	25.7% were married, 70.9% were single, 2.8% divorced, and .6% were widowed	14.6% were married, 74.2% were single, 1.7% were divorced, and 9.6% had other marital statuses
Employment	64.5% Students, 12.9% Employees, 3.4% professionals, 3.1% workers, 2.4% merchants, 1.4% retired, and 12.2% others	75.1% students, 9.2% workers, 2% employees, .4% professionals, 2.9% retire, and 9.9% other	55.3% students, 35.7% employees, 1.3% professionals, 4% retired, and 3.7% others	27.4% are students, 18.4% are unemployed, 43% are employees, 3.4% were merchants, 2.2% were professionals, 1.7% were workers, .6% were retired, and 3.4% others	48.9% were college students, 39.3% were employees, 6.2% were professionals, and 5.6% were others
Socio-Economic-Status (poverty)	1% very low, 2% low, 75.1% in the middle, 18.2% high, 3.7% very high	.5% very low, 6.5% low, 84.8% in the middle, 6.5% high, 1.7% very high	.0% very low, .7% low, 77% in the middle, 18.3% high, 4% very high	25.7% very low, 33% low, 22.9% in the middle, 11.2% high, 7.3% very high	1.7% very low, 20.3% low, 70.6% in the middle, 7.3% high, .0% very high

Procedure: The research was secondary data analysis. We combined five samples from Western and non-Western countries (Egypt, Turkey, Syria, the UK, and Kuwait) to check the research hypotheses and validate the WTELS model, as a master positive motive, cross-culturally. The same samples and measures were used in previous studies with different focuses (Kira, Özcan, Shuwiekh, Kucharska, Al-Huwailah, & Kanaan, 2020; Kanaan, Kira, Shuwiekh, Kucharska, & Al-Huwailah, 2019).

Measures (Note: the same measures were used in the five samples).

2.2. Translation of the Measures to Arabic and Turkish

For the Arabic version of the measures, all measures were previously translated into Arabic using the scientific procedures of translation and back-translation and were validated and utilized in research projects in different Arabic populations. For the Turkish language, the measures were translated and back-translated by professionals who were fluent in both languages (English and Turkish). They were tested on a focus group of 10 graduate students who gave feedback on the final versions.

2.3. Independent Variables Measures

The will to Exist, Live and Survive/Fight (WTLES-F) measure (Kira, Shuwiekh, Kucharska, Al-Huwailah & Moustafa, 2019b; Kira et al., in press; Kira & Shuwiekh, in press): The measure in its current form has 6 items focused on the different aspects of will to exist, live, survive and thrive. It includes items such as my will to exist and survive adversity is generally? 5. Very strong; 4. Strong; 3. Neutral; 2. Drained/depleted; 1. Extremely depleted; 0. I have no will to survive.

The measure was found to have good internal consistency (.82), and test-retest stability (.82). Exploratory and confirmatory factor analysis found a one-factor structure that had a good fit with the data. WTLES-F predicted higher post-traumatic growth, emotion regulation strategy of reappraisal, self-worth, inter-faith spirituality, and lower suicidal ideations and attempts, posttraumatic stress disorder, existential annihilation anxieties, depression, psychopathology, inter-nalizing, externalizing, and thought disorders (see **Appendix 1**, for the scale). Its α in the present study is .88.

2.4. Mediating Variables Measures

The Rosenberg self-esteem scale (RSES) is a 10-item scale that measures global self-esteem (Rosenberg, 1965). Each item was rated on a 4-point Likert-type scale from strongly agree (3) to strongly disagree (0). The scale is divided into five positively worded and five negatively worded statements. The RSES has been translated and adapted to various languages including Turkish (Çuhadaroğlu, 1986) and Arabic (Zaidi, Awad, Mortada, Qasem, & Kayal, 2015). Its reliability ranged between .85 and .88 (Rosenberg, 1965). Its alpha reliability is .74 in the current data.

Emotion Regulation Questionnaire: The ERQ (Gross & John, 2003) is a ten items scale. It measures two emotion regulation strategies: reappraisal and sup-pression. An example of the items of the reappraisal subscale is: I control my emotions by changing the way I think about the situation I'm in. An example of an item of suppression subscale is: I control my emotions by not expressing them. Items are rated on a 7-point Likert-type response scale. Higher scores on each scale indicate greater use of the corresponding ER strategy. The ERQ has been reported to have an adequate internal consistency (α = .79 for Reappraisal, and .73 for Suppression) and a 3-month test-retest stability of .69 for both scales (Gross & John, 2003). The measure was previously scientifically translated into Arabic in a study of Egyptian college students and found to have good psychome-trics. In the current data, reappraisal has α of .89, and suppression has α of .78.

Interfaith Spirituality (IFS) (Kira, Shuwiekh, Al-Huwailah, Zidan, & Bujold-Bugeaud, 2019a; Kira et al., 2021b) is a 23 items measure that is recently devel-oped and faith neutral. IFS is defined according to various spiritual Eastern and Western traditions as the feeling of a direct relationship with the creator, or with the power that put everything into existence, as you perceive it, and your ability to transcend yourself. This definition applies to any of the religious and spiritual traditions and faith-based ideologies and includes their common core of spiri-tuality. Exploratory and confirmatory factor analyses, on a sample of 490, found four factors-based subscales: a direct relationship with the creator, asceticism (e.g., self-discipline/mastery self-transcendence, virtues such as humility, acceptance, gratitude, altruism, compassion, and self-denial), meditation and divine love. IFS was found to have good internal consistency of .92. Test-retest (4 weeks interval between time 1 and time 2) on a sample of (N = 34) was found to be .72. The IFS

scale was associated with lower existential anxieties and posttraumatic stress disorder scores, and with higher posttraumatic growth, emotion regulation strategy of reappraisal, and self-esteem scores. The IFS scale was strictly invariant across gender and religious groups. Its α is .97 in the present data.

The centrality of religiosity scale (*CRS Modified*) (Huber & Huber, 2012) is five items that had been used previously in similar populations. It contains items that measure the consistent practice of religion. It includes also items about congregating with persons from the same religion, reading the religion's Holy Book, and giving to their religious charities. The measure had Cronbach's α = .82 in the current data.

2.5. Outcome or Dependent Variables Measures

The psychopathology screening measure (Kira, Shuwiekh, & Kucharska, 2017). The reconstructed GAIN short mental health screener (GAIN-SS) (Dennis, Chan, & Funk, 2006) is a 20 items scale that identifies clients (adults and adolescents) who are likely to have internalizing, externalizing, and/or thought disorders. The participant is asked to indicate if the behavior (or feeling) happened in the past month (scored 4), or happened in the last 2 - 3 months (scored 3), or in the last 3 - 12 months (scored 2), or the last year or more (scored 1), or never happened (scored 0). The measure was reconstructed to include a section for thought disorder that was not in the old version. The goal of its adaptation was to include the three components found to constitute the structure of psychopathology: Internalizing, Externalizing, and Thought Disorder (psychoticism) (Caspi et al., 2014; Laceulle, Volleberge, & Ormel, 2015). Reanalysis of the data collected from Egypt and Poland yielded, as expected, three factors: Internalizing, Externalizing, and thought disorders (Kira, Shuwiekh, & Kucharska, 2017). Further, the test has items that assess addiction and suicidality. Test-retest using an independent sample of 35 males with four weeks intervals yielded excellent stability (test-retest reliability coefficients of .970 for internalizing, .908 for externalizing, and .915 for the thought disorder subscale). In the present study, α = .86 for internalizing, α = .90 for externalizing, and .93 for thought disorder. The total scale of psychopathology has α = .92 in the present study.

The adapted UCLA PTSD-V reaction index (Steinberg et al., 2013) is a self-report questionnaire (31 items) to assess PTSD symptoms. The PTSD Reaction Index Score provides a method for calculating whether DSM-V criteria are met for PTSD symptoms, significant distress, and impairment and whether full diagnostic criteria are met for PTSD. The scale assesses the frequency of occurrence of PTSD symptoms during the past month (rated from 0 = none of the time to 4 = most of the time). The items map directly onto the DSM-5 intrusion, avoidance, and arousal criteria, while two additional items assess associated features (fear of recurrence and trauma-related guilt). Scoring algorithms permit tabulation of UCLA PTSD-RI total score, and B, C, and D subscale scores. UCLA PTSD index scoring symptom cutoff requires PTSD Severity Score ≥ 38:

Diagnosis requires at least 1 "B" Symptoms; at least 3 "C" Symptoms; at least 2 "D" Symptoms, and Criteria A, B, C, D all met. The index includes 27 items to assess PTSD symptoms and 4 additional items to assess the Dissociative subtype. Cross-cultural studies on 11 countries including Palestine-Gaza (an Arabic country) using the measure found that the four-factor structure of PTSD-5 likely represents the core PTSD symptoms as proposed by the DSM-5 criteria (Doric et al., 2019). Because of the lack of DSM-V measures in Arabic for adults, while, the index was used primarily with children and adolescents (till age 18), we adapted it to be used with adults by rewording some of the items to fit adults. We pre-tested the adapted version on a small focus group. The adapted version has good suitability and face validity. It has an alpha reliability of .934 in current data. The adapted version's higher scores correlated significantly with cumulative stressors and traumas (CST) (.36 $p < .000$), and poor health (.26 $p < .000$).

Depression Single-item measure (Chochinov, Wilson, Enns, & Lander, 1997): This single-item measure for depression was found to correctly identify the diagnosis of depression outperforming the questionnaire and visual analog measures.

Existential Annihilation Anxieties measure (*EAA*) (Kira et al., 2012b, Kira, Shuwiekh, Kucharska, & Al-Huwailah, 2019c; Kira, Templin, Lewandowski, & Shuwiekh, 2018; Kira et al., 2020). The 15 items measure previously tested in a community sample of 490 in Egypt. In current data, the measure was found to have an alpha of .92. Factor analysis found as predicted 4 factors (subscales); Psychic EAA related to personal identity trauma (psychic), EAA related to collective identity trauma, EAA related to Social status traumas, and EAA related to fear of physical death. The measure was found to be significantly associated with cumulative trauma, depression, thought disorder, internalizing, externalizing, and suicidality, poor reported physical health, gender, and other discriminations, and sexual abuse (Kira, Shuwiekh, Kucharska, & Al-Huwailah, 2019c). A recent study (Kira et al, 2020) on five different national groups (N = 1566), found that the measure has α = .92. The four-factor structure of the measure was found to be strictly invariant across genders and age groups and strongly invariant across the five national groups. EAA was highly correlated with PTSD (.52) and was negatively correlated with WTELS, self-esteem, religiosity, interfaith spirituality, and emotion regulation strategy of reappraisal. Its alpha reliability is .92 in current data.

The Post-Traumatic Growth Inventory (*PTGI*) (Tedeschi & Calhoun, 1996). This 21 items scale assesses perceived positive life changes following traumatic experiences. Participants respond on a scale from 0 (I did not experience this change as a result of my experience) to 5 (I experienced this change to a very significant degree). The measure includes five subscales designed to measure the following: relating to others, new possibilities, personal strength, spiritual change, and appreciation of life. In a validation study, Tedeschi & Calhoun (1996) found the scale's alpha to be .90 and the test-retest stability of .71.

The measure has sound psychometric properties in its Arabic version (Kira et al., 2012a; Kira et al., 2013), with an alpha of .96 for the main measure. In the current data, the scale had an alpha of .95. Alpha coefficients ranged tween .85and .75 for its five subscales.

Physical Health Scale (13 items, modified; Kira, Clifford, Wiencek, & Al-Haidar, 2001). The 13 items measure was developed in previous studies on Iraqi refugees and Palestinians. The higher the score, the worse the participant's health condition. The high score on the scale was found to be significantly correlated with PTSD, and older age (Kira et al., 2006). It is found, in various studies, to have acceptable reliability that varied between 70 and 85. It included a question about general self-rated health on a 5-point Likert-type scale. It included three questions on how health difficulties affected the contributor's social relations, ability to work, and memory. It also included a list of detailed serious and chronic medical disorders, based on the taxonomy of health problems of ICD-9-CM codes for selected general medical conditions such as neurological, blood pressure disorders and digestive system, musculoskeletal, and endocrine illnesses. The scale alpha reliability in the current data is .75.

2.6. Statistical Analysis

The data were analyzed utilizing IBM-SPSS 22, as well as Amos 22 software. We used Cohen (1992: p. 158)'s criteria and recommendations to determine the sample size that achieves medium population effect size at power = .80 for α = .05 for the number of variables. Inspection of the variables indicated that missing values were between .5% and 2.5%, percentages below the 5% cut-off recommended by Tabachnick et al. (2013). We used pair-wise deletion to handle the missing values as recommended for low missing data. We calculated frequencies and basic descriptions. We conducted zero-order correlations between the primary variables. We started by conducting confirmatory factor analysis for the one-factor of WTELS-F, found in the previous study in each of the other samples and found to fit well in each sample. We combined the five samples and conducted confirmatory factor analysis for the one-factor of WTELS-F found in a previous study in the combined sample to replicate the previous results of its structural validity and further test its invariance across different groups in different cultures (Kira et al., 2018). Following Byrne (2012)'s recommendations, the criteria for good model fit were a non-significant (χ^2), (χ^2/d.f. > 2), comparative fit index (CFI) values > .90, and root-mean-square error of approximation (RMSEA) values < .06. To assess whether the measurement model of the scale, is invariant across genders, and Western and non-Western samples (Egypt, Kuwait, Turkey, Syria, and the UK), we conducted a multi-group invariance analysis (Sarstedt et al., 2011). Four nested models were tested sequentially: a configural invariance model, a metric invariance model, a scalar invariance model, and a strict invariance model. In the configural model, (i.e., identical form), the parameters are all freely estimated across groups. In the metric model (i.e. weak

or partial invariance), the parameters are constrained to be identical across groups. In the scalar model or "strong invariance", variables and path variances are set to be equal across groups. Lastly, the strict model "strict invariance" additionally constrains the residuals to be the same across the three groups. Although there is broad acceptance of the steps for testing measurement invariance, the criteria for evaluating the invariance of the models at each level are not as clear. Chi-square tests LRT is highly sensitive to sample size (Meade & Lautenschlager, 2004), potentially leading to an excessively conservative test of invariance and is controversial to be used with large samples (current sample size = 1566). (Byrne, Shavelson, & Muthén, 1989) have argued that invariance can be established as long as two indicators are invariant. According to Chen (2007), the null hypothesis of invariance should not be rejected when changes in CFI are less than or equal to .01 and in RMSEA are less than or equal to .015.

We used PROCESS macro (Hayes, 2013) to test the assumptions of the WTELS model. PROCESS is utilized to analyze mediation, serial mediation, and moderation. Serial mediation is especially crucial as most of the mediation in real life follows the serial model rather than the parallel model of mediation. We used model 4 to test WTELS-F direct, and indirect effects with multiple mediators (reappraisal, self-esteem, spirituality) and their relative strength (effect size and confidence intervals) and total effects on PTG, PTSD, suicidality, depression, existential anxiety, and psychopathology. We controlled for age, gender, and groups (the five samples membership) as covariates. We explored the significant potential trajectories (sequenced effects or serial mediation) using model 6. Additionally, we used model 7 to test the possible moderating effects of physical health, and spirituality on the mediators. We used bootstrapping sampling (n = 5000) distributions to calculate the direct and indirect effects and confidence intervals (95%) of the estimated effects. The point estimate is considered to be significant when the confidence interval does not contain zero.

Further, we used stepwise multiple regression analysis to calculate the incremental validity of WTELS-F, in the first step, we entered gender, marital status, education, and income; in the second step we entered reappraisal, in the third step we entered self-esteem, in the fourth step we entered religiosity, in the fifth and last step, we entered WTELS-F.

3. Results

Confirmatory factor analysis results (Construct Validity): Confirmatory factor analysis on each sample and the combined sample, found an adequate fit for the one-factor model without modification (Chi Square = 27.145, d.f. = 8, p = .001, CFI = .980, RMSEA = .070 for the combined sample), however, conducting recommended modifications for four correlated error terms, brought the model to an almost perfect fit (Chi Square = 4.890, d.f. = 5, p = .429, CFI = 1.000, RMSEA = .000). Correlated errors between items that are highly related may be justified. Even, without the correlated errors, the model fits well. Figure 1
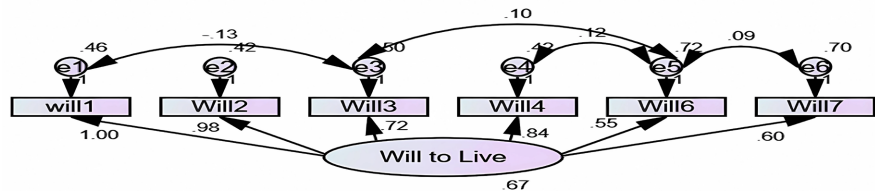
Figure 1. Confirmatory factor analysis for WTELS Scale six items after modifications.

provides a confirmatory analysis of the combined sample. The results confirmed the scale's structural validity.

Measurement Invariance of WTELS: Multigroup measurement invariance indicated that the confirmatory structure of WTELS is strictly invariant between genders, and age groups (adults and adolescents). For the measurement invariance between the five Western and non-Western samples (Egypt, Kuwait, Turkey, Syrians/Palestinians, and the UK), the measurement model was, at least, strongly invariant. The results of invariance between Western and non-Western samples using RMSEA indicated strict invariance, however, the results of CFI did not confirm its strictness. Table 2 includes the measurement fit indexes on the four levels (configural, Metric, Scalar, and strict) for each analysis.

Reliability and stability: Reliability for the combined sample (M = 21.60, SD = 4.38) was .88, for the UK subsample (M = 22.83, SD = 4.60), was.90 for the Kuwait subsample (M = 22.99, SD = 3.71) was .81; for the Egypt subsample (M = 20,31, SD = 4.29)was .82; for the Turkish subsample (M = 16.82, SD = 21.47) was .91; for Syrians/Palestinians subsample (M = 19.83, SD = 25.56) was .89. Test-retest (4 weeks interval) on a sample of 34 in Egypt found to be .82. The measure has good inter-item reliability and relative stability.

Correlational results: WTELS-F was positively associated with self-esteem, PTG, SES, and reappraisal in the five Western and non-Western samples. It was associated with spirituality and religiosity in the non-Western religious samples, and not in the mostly non-religious Western sample (the UK sample included about 70% with no identified religion). WTELS-F was negatively associated with EAA, poor physical health, suicidality, psychopathology and its three subscales (internalizing, externalizing, and thought disorder), depression, and PTSD in the five Western and non-Western samples. It was negatively associated with cumulative trauma, gender discrimination, and role (status achievement) identity traumas in all samples. Table 3 includes zero-order correlations between the selected variables and WTELS-F and their means and standard deviation in the five samples.

Table 2. Multi-group measurement invariance between genders, and age groups (adults and adolescents) and countries (Egypt, Kuwait, United Kingdom).

Multigroup Measurement Invariance between genders							
	Chi-square	*df*	*p*	*chi-square/df*	*CFI*	*RMSEA*	*IFI*
Unconstrained	7.292	6	.295	1.215	.999	.015	.999
Measurement weights	11.693	11	.387	1.063	1.000	.008	1.000
Structural covariances	11.746	12	.466	.979	1.000	.000	1.000
Measurement residuals	27.350	24	.288	1.140	.998	.012	.998
Measurement Invariance between Age Groups (*Adolescents and Adults*)							
Unconstrained	9.421	6	.151	1.570	.998	.024	.998
Measurement weights	13.618	11	.255	1.238	.999	.016	.999
Structural covariances	13.802	12	.314	1.150	.999	.012	.999
Measurement residuals	44.212	24	.007	1.842	.990	.030	.990
Multi-group measurement invariance between Samples (*Egyptian, Turkish, Syrians, Kuwaiti, and the UK*)							
Unconstrained	168.087	21	.000	8.004	.932	.074	.933
Measurement weights	173.127	26	.000	6.659	.932	.066	.933
Structural covariances	180.104	27	.000	6.671	.929	.066	.930
Measurement residuals	294.258	43	.000	6.843	.884	.070	.884

Table 3. Zero order correlations between selected main variables and WTELS and their means and standard deviations and alpha coefficients in the diagonal cells.

	Mean (SD)	1	2	3	4	5	6	7	8	9
1. WTELS	21.60 (4.34))	.88								
2. Reappraisal	28.30 (7.26)	.21***	.89							
3. PTG	51.24 (22.83)	.21***	.20***	.95						
4. Self-esteem	21.71 (4.58)	.35***	.17***	.08**	.74					
5. EAA	14.99 (10.96)	−.29**	−.13**	.02	−.29***	.92				
6. PTSD	20.50 (18.29)	−.36**	−.09***	.07**	−.27***	.52***	.98			
7. Internalizing	12.85 (8.03)	−.20***	−.06*	−.01	.02	.21***	.26***	.86		
8. Externalizing	3.078 (6.02)	−.05*	−.17**	−.09**	.07**	.08**	.07**	.47***	.90	
9. Thought Disorders	8.03 (7.19)	−.19***	−.11***	.03	−.08***	.25***	.29***	.56***	.58***	.93

Note: +$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$.

PROCESS Mediation Results: The total effects of WTELS-F on posttraumatic growth (PTG) were significantly positive with the direct effects accounting for 64% of the total effects. The other 46% of its total effects were mediated by reappraisal (25% of the total effects), and self-esteem (21%). Group (national groups of Egyptians, Kuwaiti, and the UK) and age were significant covariates. The model accounted for .085 of the variance in PTG. The potential significant serial trajectories of the effects included (WTELS-F -> Reappraisal -> PTG, the strongest

potential scenario) (.25), (WTELS -> Self Esteem -> PTG) (.20), and (WTELS-F -> Reappraisal -> Self Esteem -> PTG) (.01). Spirituality was a significant moderator of the effects of the mediators (reappraisal and self-esteem) on PTG.

The total effects of WTELS on posttraumatic stress disorder (PTSD) were significantly negative with the direct effects accounting for −.45 of the total effects. While −.55 of the total negative effects were mediated by self-esteem (.49 of the total negative effects), followed by spirituality (6%) and reappraisal (2%). Group, age, and gender were significant covariates. The model accounted for .176 of the variance in PTSD. The potential significant serial trajectories of the negative effects included (WTELS-F -> Self-esteem -> PTSD, the strongest potential scenario) (−.42), (WTELS-F -> Spirituality -> PTSD) (-.04), (WTELS-F -> Reappraisal -> Self Esteem -> PTSD) (−.02), and (WTELS-F -> Reappraisal -> Spirituality -> PTSD) (−.01). Physical health moderated the effects of self-esteem. Further, identity salience moderated the negative effects of self-esteem and spirituality on PTSD.

The total effects of WTELS-F on depression were significantly negative with the direct effects accounting for −.67 of the total effects. While −.33 of the total negative effects were mediated by self-esteem followed by spirituality and reappraisal. Group, (not age or gender) was a significant covariate. The model accounted for .231 of the variance in depression. The potential significant serial trajectories of the negative effects included (WTELS-F -> Self-esteem -> Depression, the strongest potential scenario), followed by (WTELS-F -> Spirituality-> Depression). Physical health was a significant moderator of the mediator's self-esteem effects, but not spirituality or reappraisal.

The total effects of WTELS-F on existential annihilation anxieties (EAA) were significantly negative with the direct effects accounting for −.46 of the total effects. While −.54 of the total negative effects were mediated by self-esteem followed by spirituality and reappraisal. Group and age (but not gender) were significant covariates. The model accounted for .222 of the variance in EAA. The potential significant serial trajectories of the negative effects included (WTELS -> Self-esteem -> EAA, the strongest potential scenario), followed by (WTELS-F -> Spirituality -> EAA), and (WTELS-F -> Reappraisal -> EAA), (WTELS-F -> Self-esteem -> Reappraisal -> EAA), (WTELS-F -> Spirituality -> Reappraisal -> EAA). Physical health was a significant moderator of the mediator's self-esteem effects, but not spirituality or reappraisal. Physical health moderated the effects of self-esteem on depression.

The total effects of WTELS-F on Suicidality were significantly negative with the direct effects accounting for −.57 of the total effects. While −.43 of the total negative effects were mediated by spirituality and reappraisal (but not self-esteem). Group and age (but not gender) were significant covariates. The model accounted for .432 of the variance in suicidality. The potential significant serial trajectories of the negative effects included (WTELS-F -> Spirituality -> Suicidality, the strongest potential scenario), followed by (WTELS-F -> Reappraisal -> Suicidality), (WTELS-F -> Spirituality -> Reappraisal -> Suicidality), and

(WTELS-F -> Self-esteem -> Reappraisal -> Suicidality).

The total effects of WTELS-F on psychopathology were significantly negative with the direct effects accounting for −.57 of the total effects. While −.43 of the total negative effects were mediated by spirituality, followed by self-esteem and reappraisal. Group and age (but not gender) were significant covariates. The model accounted for .403 of the variance in psychopathology. The significant serial trajectories of the negative effects included (WTELS-F ->Spirituality -> Psychopathology, the strongest potential scenario), followed by (WTELS-F -> Self-esteem -> Psychopathology), (WTELS-F -> Reappraisal -> Psychopathology), (WTELS-F -> Spirituality -> Reappraisal -> Psychopathology), and (WTELS-F -> Self-esteem -> Reappraisal -> Psychopathology). Physical health was a significant moderator of the mediator's self-esteem effects, but not spirituality or reappraisal. Table 4 details the Effects of WTELS, its mediators, and covariates on PTG, PTSD, EAA, depression, suicidality, and Psychopathology. Table 5 details the significant serial mediation trajectories of the effects of WTELS on PTG, PTSD, Depression, EAA, suicidality, and Psychopathology. Table 6 details the Conditional effects of moderators of different mediators of the effects of WTELS-F at Values of PTG, EAA, Depression, PTSD, and Psychopathology.)

Stepwise Regression and incremental validity of WTELS-F Results: In Model 5 (when we added WTELS-F), WTELS-F explained the highest variance in PTSD reduction above religiosity, emotion regulation (reappraisal), and self-esteem contribution (see Table 7). The results provided evidence of the WTELS-F scale's incremental independent contribution in significantly reducing PTSD and its superiority compared with other variables.

4. Discussion

We are born with a strong conscious and unconscious positive and basic motive to exist, live, survive adversities, and thrive in our sometimes challenging social and physical environment. This basic master motive seems to be taken for granted and is one of the missing variables in theories and the science of motivation and coping. In this study, we re-tested the measure and the conceptual framework of the will to exist, live, and survive cross-culturally in Western and non-Western samples and validated the conceptual basics of the WTELS-F as a basic positive motive for health and growth. The measure was found to have adequate reliability in all samples and its measurement model was strictly invariant across genders, and age groups, and, at least, strongly invariant between Western and non-Western subsamples. This study generally validated the WTELS-F measurement and structural model, cross-culturally, as a key positive variable, directly and indirectly, motivating post-traumatic growth (PTG) and better mental and physical health. Its direct effects on PTG were substantial and exceeded the mediated effects. Emotion regulation (reappraisal) and self-esteem, moderated by spirituality, were the significant mediators. Further, WTELS-F, cross-culturally, directly and indirectly negatively affected poor mental and

Table 4. The effects of WTELS, mediators, and covariates on PTG, psychopathology, PTSD, EAA, depression, and suicidality.

Direct, Indirect and Total Effects of Will to Exist, Live, and Survive (WTELS)							
Variable	b	SE	t/z	P	LL 95% CI	UL 95% CI	R² (p)
Outcome variable PTG							
Total effects	1.11	.18	6.08	.000	.75	1.47	
Direct effects	.64	.21	3.25	.001	.26	1.06	
Total indirect effects	.46	.10			.26	.66	
Mediators effects							
Reappraisal	.25	.06	4.18	.000	.15	.38	
Self-Esteem	.21	.09	2.40	.016	04	.39	.085 (<.001)
Covariates Effects							
Group	−6.43	1.15	−5.59	.000	−8.69	−4.17	
Gender	.65	1.56	.42	.678	−2.42	3.72	
Age	−.18	.09	−1.97	.049	−.35	−.00	
Outcome variable PTSD							
Total Effects	−.92	.13	−7.00	.000	−1.18	−.66	
Direct effects	−.41	.14	−2.88	.004	−2.88	−.13	
Total indirect effects	−.52	.07			−.66	−.39	
Mediators effects							
Reappraisal	−.02	.03	−.61	.540	−.09	.04	
Self-esteem	−.45	.06	−7.23	.000	−.58	−.34	.176 (<.001)
Spirituality	−.05	.02	−2.03	.042	−.11	−.01	
Covariates Effects							
Group	−2.22	.68	−3.27	.001	−3.55	−.89	
Gender	2.58	.99	2.61	.009	.64	4.52	
Age	−.14	.05	−2.93	.004	−.24	−.05	
Outcome variable Depression							
Total Effects	−.09	.01	−10.62	.000	−.11	−.08	
Direct effects	−.06	.01	−5.55	.000	−.07	−.04	
Total indirect effects	−.04	.01			−.05	−.03	
Mediators effects							
Self-esteem	−.03	.00	−6.43	.000	−.03	−.02	
Spirituality	−.01	.00	−4.39	.000	−.01	−.01	.231 (<.001)
Reappraisal	.00	.00	.92	.357	−.00	.01	
Covariates Effects							
Group	−.14	.05	−3.08	.002	−.24	−.05	
Gender	.09	.07	1.20	.230	−.06	.23	
Age	−.01	.00	−1.47	.142	−.01	.00	

Continued

Outcome variable Existential Anxieties							
Total Effects	−.61	.07	−8.68	.000	−.75	−.47	
Direct effects	−.28	.08	−3.42	.001	−.44	−.12	
Indirect Effects	−.33	.04			−.42	−.25	
Mediators effects							
Self-esteem	−.25	.04	−6.47	.000	−.33	−.18	
Spirituality	−.05	.02	−3.19	.001	−.09	−.02	.222 (<.001)
Reappraisal	−.03	.01	−1.89	.059	−.07	−.00	
Covariates Effects							
Group	−2.18	.09	−5.56	.000	−2.95	−1.41	
Gender	.17	.58	.29	.774	−.98	1.31	
Age	−.09	.03	−2.79	.005	−.15	−.03	
Outcome variable Suicidality							
Total Effects	−.07	.01	−6.21	.000	−.10	−.05	
Direct effects	−.04	.01	−2.93	.004	−.06	−.01	
Indirect Effects	−.03	.01			−.05	−.02	
Mediators effects							
Self-esteem	−.00	.01	−.52	.605	−.01	.01	
Spirituality	−.03	.01	−5.27	.000	−.04	−.02	.432 (<.001)
Reappraisal	−.01	.00	−2.98	.003	−.02	−.00	
Covariates Effects							
Group	.60	.09	6.48	.000	.41	.78	
Gender	.13	.08	1.49	.136	−.04	.29	
Age	−.01	.00	−2.92	.004	−.02	−.00	
Outcome variable Psychopathology							
Total Effects	−1.26	.13	−9.45	.000	−1.52	−.01	
Direct effects	−.72	.14	−5.19	.000	−1.00	−.45	
Indirect Effects	−.54	.08			−.71	−.39	
Mediators effects							
Self-esteem	−.19	.06	−3.47	.001	−.30	−.09	
Spirituality	−.28	.05	−5.29	.000	−.39	−.18	.403 (<.001)
Reappraisal	−.07	.03	−2.04	.042	−.15	−.01	
Covariates Effects							
Group	6.18	1.14	5.40	.000	3.93	8.42	
Gender	1.22	.98	1.24	.216	−.71	3.15	
Age	−.34	.05	−7.35	.000	−.44	−.25	

Note: PTSD = Posttraumatic Stress Disorder, EAA = Existential Annihilation Anxiety.

Table 5. The significant serial mediation trajectories of the effects of WTELS on PTG, PTSD, depression, EAA, suicidality, and psychopathology.

Variable	b	Boot SE	LL 95% CI	UL 95% CI
Significant Trajectories of the Effects of WTELS (Serial Mediation)				
Outcome variable PTG				
WTELS -> Reappraisal -> PTG	.25	.06	.14	.37
WTELS -> Reappraisal -> Self Esteem -> PTG	.01	.00	.01	.03
WTELS -> Self Esteem -> PTG	.20	.08	.04	.36
Outcome variable PTSD				
WTELS -> Reappraisal -> Self Esteem -> PTSD	−.02	.01	−.04	−.01
WTELS -> Reappraisal -> Spirituality -> PTSD	−.01	.00	−.02	−.00
WTELS -> Self-esteem -> PTSD	**−.42**	.06	−.55	−.32
WTELS -> Spirituality -> PTSD	−.04	.02	−.09	−.01
Outcome variable: Depression				
WTELS -> Self-esteem -> Depression	−.03	.01	−.04	−.02
WTELS -> Spirituality -> Depression	−.01	.00	−.02	−.01
Outcome Variable: Existential Anxieties(EAA)				
WTELS -> Self-esteem -> EAA	−.25	.04	−.32	−.18
WTELS -> Self-esteem -> Reappraisal -> EAA	−.01	.00	−.02	−.00
WTELS -> Spirituality -> EAA	−.05	.02	−.09	−.02
WTELS -> Spirituality -> Reappraisal -> EAA	−.01	.00	−.01	−.00
WTELS -> Reappraisal -> EAA	−.03	.01	−.06	−.00
Outcome Variable: Suicidality				
WTELS -> Self-esteem -> Reappraisal -> Suicidality	−.01	.00	−.00	−.00
WTELS -> Spirituality -> Suicidality	−.03	.00	−.04	−.02
WTELS -> Spirituality -> Reappraisal -> Suicidality	−.01	.00	−.00	−.00
WTELS -> Reappraisal -> Suicidality	−.01	.00	−.01	−.00
Outcome Variable: Psychopathology				
WTELS -> Self-esteem -> Psychopathology	−.19	.05	−.30	−.09
WTELS -> Self-esteem -> Reappraisal -> Psychopathology	−.01	.00	−.03	−.00
WTELS -> Spirituality -> Psychopathology	−.28	.06	−.40	−.18
WTELS -> Spirituality -> Reappraisal -> Psychopathology	−.01	.00	−.02	−.00
WTELS -> Reappraisal -> S Psychopathology	−.05	.02	−.11	−.01

Note: LL = lower limit; CI = confidence interval; UL = upper limit; PTSD = Posttraumatic Stress Disorder, PTG = Posttraumatic Growth, EAA = Existential Annihilation Anxiety, WTELS = Will to Exist, Live and Survive.

Table 6. Conditional effects of moderators of different mediators of the effects of WTELS at Values of PTG, EAA, Depression, PTSD, and Psychopathology.

Conditional Effects of WTELS at Values of Reappraisal and Self-esteem					
Reappraisal < (mediator)	Spirituality < (moderator)	Indirect Effect on PTG	Boot *SE*	LL 95% CI	UL 95% CI
Independent variable WTELS, Outcome Variable PTG					
−SD	−4.71	.27	.07	.16	.43
M	.000	.22	.05	.13	.34
+SD	4.71	.16	.06	.07	.29
Conditional Effects of WTELS, at Values of self-esteem and spirituality					
Independent Variable WTELS, Outcome Variable PTG					
Self-esteem < (mediator)	Spirituality < (moderator)				
−SD	−4.71	.27	.12	.05	.51
M	.000	.20	.09	.04	.37
+SD	4.71	.13	.06	.03	.26
Conditional Effects of WTELS, at Values of self-esteem and physical health					
Independent Variable WTELS, Outcome Variable PTG					
Self-esteem < (mediator)	Physical health < (moderator)				
−SD	−4.04	.18	.08	.04	.35
M	.000	.21	.09	.05	.38
+SD	4.04	.24	.10	.05	.44
Conditional Effects of WTELS, at Values of self-esteem					
Independent Variable WTELS, Outcome Variable PTSD					
Self-esteem < (mediator)	Physical Health < (moderator)				
−SD	−4.04	−.38	.06	−.52	−.26
M	.000	−.44	.06	−.57	−.33
+SD	4.04	−.50	.07	−.64	−.38
Conditional Effects of WTELS at Values of Self-esteem					
Independent Variable WTELS, Outcome Variable PTSD					
Self-esteem < (mediator)	(moderator) < Identity Salience				
−SD	−12.28	−.56	.08	−.72	−.42
M	.000	−.45	.06	−.58	−.34
+SD	12.28	−.33	.06	−.48	−.22
Conditional Effects of WTELS at Values of Spirituality					
Independent Variable WTELS, Outcome Variable PTSD					
Spirituality < (mediator)	(moderator) Identity Salience				
−SD	−12.28	−.02	.01	−.06	.00
M	.000	−.04	.02	−.09	−.01
+SD	12.28	−.06	.03	−.14	−.01

Continued

Conditional Effects of WTELS at Values of Self-esteem

Independent Variable WTELS, Outcome Variable Depression

Self-esteem < (mediator)	(moderator) < Physical Health				
−SD	−4.04	−.02	.00	−.03	−.02
M	.000	−.03	.00	−.04	−.02
+SD	4.04	−.04	.01	−.04	−.02

Independent Variable WTELS, Outcome Variable EAA

Self-esteem < (mediator)	(moderator) < Physical Health				
−SD	−4.04	−.21	.04	−.30	−.14
M	.000	−.25	.04	−.32	−.18
+SD	4.04	−.28	.04	−.39	−.20

Conditional Effects of WTELS at Values of Self-esteem

Independent Variable WTELS, Outcome Variable Depression

Self-esteem < (mediator)	(moderator) < Physical Health				
−SD	−4.04	−.02	.00	−.03	−.02
M	.000	−.03	.00	−.04	−.02
+SD	4.04	−.04	.01	−.04	−.02

Conditional Effects of WTELS at Values of Self-esteem

Independent Variable WTELS, Outcome Variable Psychopathology

Self-esteem < (mediator)	(moderator) < Physical Health				
−SD	−4.04	−.16	.05	−.26	−.08
M	.000	−.19	.05	−.30	−.09
+SD	4.04	−.22	.06	−.35	−.10

Note. SD = Standard Deviation, M = Mean, LL = lower limit; CI = confidence interval; UL = upper limit; PTSD = Posttraumatic Stress Disorder, PTG = Posttraumatic Growth, EAA = Existential Annihilation Anxiety, WTELS = Will to Exist, Live and Survive.

Table 7. Step-multiple regression analysis of the incremental contribution of WTELS to PTSD reduction.

Model	Variables	B	SE	Beta	t	P	R^2 (change in R^2)	F for change in R^2
Model 1	Gender	1.59	.91	.05	1.74	.081	.019***	6.671***
	Age	−.20	.05	−.11	−3.85	.000		
	Income	−.99	.82	−.04	−1.21	.226		
	Education	.55	.34	.05	1.60	.109		
Model 2	Gender	1.48	.91	.05	1.64	.101	.011***	15.896***
	Age	−.19	.05	−.11	−3.72	.000		
	Income	−1.11	.82	−.04	−1.35	.176		
	Education	.67	.34	.06	1.98	.048		
	Reappraisal	−.28	.06	−.13	−4.48	.000		

Continued

Model 3	Gender	1.79	.87	.06	2.05	.041	.057***	85.777***
	Age	−.17	.05	−.10	−3.52	.000		
	Income	−.44	.79	−.02	−.55	.580		
	Education	−.12	.34	−.01	−.37	.715		
	Reappraisal	−.19	.06	−.09	−3.12	.002		
	Self-esteem	−.78	.08	−.27	−9.76	.000		
Model 4	Gender	1.60	.87	.05	1.83	.067	.005**	7.186**
	Age	−.15	.05	−.09	−3.04	.002		
	Income	−.23	.79	−.01	−.29	.773		
	Education	.24	.36	.02	.66	.508		
	Reappraisal	−.17	.00	−.08	−2.81	.005		
	Self-esteem	−.80	.08	−.28	−9.96	.000		
	Religiosity	−.32	.12	−.08	−2.71	.007		
Model 5	Gender	2.08	.85	.06	2.44	.015	.058***	93.576***
	Age	−.12	.05	−.07	−2.49	.013		
	Income	.18	.77	.01	.23	.815		
	Education	.10	.35	.01	.28	.778		
	Reappraisal	−.07	.06	−.03	−1.18	.238		
	Self-esteem	−.58	.08	−.18	−6.79	.000		
	Religiosity	−.19	.11	−.05	−1.64	.095		
	WTELS	−.86	.10	−.26	−9.67	.000		

physical health. The direct effects on improved health and mental health were strong and the indirect effects were mediated by its impact on reappraisal, self-esteem, and interfaith spirituality that contributed to the total effects. It is worth noting that the model of the effects of WTELS on suicidality accounted for the highest variance (.432), compared to the other examined variables.

While the direct effects of WTELS-F on lower PTSD, depression, and psychopathology were strong and accounted for 40% - 57% of its total effects; its indirect effects were mediated by interfaith spirituality, self-esteem, and emotional regulation (reappraisal). Interfaith spirituality was especially the most significant mediator of the positive effects of WTELS-F. Spirituality found to be associated with lower PTSD (Currier et al., 2015), lower depression (Koenig, 2007), and psychopathology (Steger, 2013). There were cultural differences especially in religiosity, with non-western samples having significantly higher religiosity and relatively higher interfaith spirituality than the western sample.

Self-esteem was found to be associated with lower PTSD (Kashdan, Uswatte, Steger, & Julian, 2006), lower depression (Orth, Robins, & Roberts, 2008), and psychopathology (Zeigler-Hill, 2011). Emotion regulation (reappraisal) was found to be associated with lower PTSD (Shepherd, & Wild, 2014), lower de-

pression (Ehring, Tuschen-Caffier, Schnülle, Fischer, & Gross, 2010), and lower psychopathology (Eftekhari, Zoellner, & Vigil, 2009).

While the construct of WTELS-F includes three parameters (will to exist, will to live, and will survive and fight), factor analysis may not find these three dimensions in this short six-item measure. The three factors with second-order unitary factors were found in a relatively longer measure (21 items) for the construct (Kira et al., in press; Kira & Shuwiekh, 2023). This is the first study that introduced and explored this master motive coping concept's critical relevance and importance to the study of PTG, mental health, emotion regulation, and self-concept cross-culturally. We conclude that PTG is more related to a more profound drive of will to exist, live and survive. Further, results suggest that focusing on nurturing WTELS-F in at-risk individuals, especially suicidal individuals, has the promise of significant healing and growth and positive coping. Further, there is evidence that enhancing motivation, in a variety of ways, can be an effective strategy for enhancing temporal cognition (Avlar et al., 2015). Recent studies found that WTELS-F is highly associated with lower executive function deficits (working memory and inhibition deficits (Kira et al., 2021a)), which may be one key to its powerful impact on mental health, resilience, and PTG. Motivation and cognitive deficits are pervasive in both neurological and psychiatric disorders. WTELS-F-based intervention and prevention strategies could be developed and tested. For example, motivational interviewing can be designed to focus on enhancing WTELS-F as the master motive that may generalize to specific motives, advancing goal pursuit, or repairing motivation deficits pervasive in psychiatric disorders. WTELS-F paradigm provides an opportunity for clinicians to utilize its Transdiagnostic feature and healing potential to design WTELS-F-based intervention and prevention components that enhance the motive of WTELS-F and can be utilized as a stand-alone, or included in their repertoire to help clients.

The current study, while providing potential contributions to understanding the positive dynamics of WTELS-F, has several limitations. One of the limitations is that the study was conducted in convenient non-clinical samples that may have limited and biased representation. We recommend more studies that use more representative clinical and non-clinical samples. Another limitation is that the measures we used are based on participants' self-reports, which could be subject to under or over-reporting of events due to current symptoms, embarrassment, shame, or social desirability. Additionally, while the measures we used have acceptable reliability, stability, and validity estimates, and we used standardized coefficients based on bootstrapping estimates of the direct and indirect effects, potential measurement error can still bias or attenuate estimates of the explained variance. Measurement error can make the predictors have less explanatory power. Another limitation is that the study utilized a cross-sectional design in testing the mediated model. Mediated models contain causal paths that inherently involve the passage of time and testing these paths with cross-sec-

tional data can produce biased estimates (Maxwell & Cole, 2007). Future studies may use longitudinal studies. Despite these limitations, the results of the current study emphasized the importance of a paradigm shift to WTELS-F-based interventions to enhance coping potentials.

Declarations

Compliance with Ethical Standards

Ethical Approval: All procedures performed in studies involving human participants following 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. The IRB of the Two Universities in Egypt and Turkey approved the research protocol.

Informed Consent

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

Conflicts of Interest

All authors did not receive any grants for this work or honorariums related to this work and declare no conflict of interest.

Data Availability

Data will be available from first upon reasonable request from the first author.

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Appendix 1. Will to Exist/Live and Survive/F (WTELS-F) Scale

Will to exist, live and survive is the expression of a natural instinct of beings and existing and growing fighting for self-fulfillment and striving for a life worth living as you see it. WTELS is the determination to exist physically, personally and collectively (Socially), by continue living (not dying), and as an independent autonomous actor, with the social and economic status he/she desires, and as an intricate part of any of different groups (e.g., religious, ethnic and cultural group) that are well respected. The goal of these questions is to know how much this will to live as defined here means to you. Please rate the following statements on a scale of 0 - 5 according to your experience and feelings.

A) My will to exist and live is generally: 5. Very strong. 4. Strong. 3. Neutral, 2. Drained/depleted 1. Extremely depleted. 0. I have no will to live.

B) I have a will to exist, live and survive adversity that is generally: 5. Very strong. 4. Strong, 3. Neutral, 2. Drained/depleted 1. Extremely depleted. 0. I have no will to survive.

C) When I have experienced significant adversity in my life, I have become even more determined to succeed and thrive. I managed the adversities because I have a strong will to exist, live and prove myself:

(5) Very much agree, (4) Agree, (3) I am not sure, (2) somewhat disagree, (1) completely disagree

D) I am motivated to achieve my goals in life by a drive to live and win.

(5) Very much agree; (4) Agree; (3) I am not sure; (2) somewhat disagree; (1) completely disagree

E) I live a meaningful life

(5) Very much agree; (4) Agree; (3) I am not sure; (2) somewhat disagree; (1) completely disagree

F) Please evaluate your will to live on a scale from 0 to 5, would you say that it is:

Very Strong	Strong	Neutral	weak	very weak	I have no will to live
5	4	3	2	1	0