

Measuring agency in children: the development and validation of the War Child Agency Assessment Scale - Palestinian version (WCAAS-Pal).

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Research Article

Keywords: children agency, war, violence, instrument validation, War Child Agency Assessment Scale

Posted Date: June 16th, 2021

DOI: <https://doi.org/10.21203/rs.3.rs-624460/v1>

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Abstract

In the present article, we aimed at construing a new quantitative measure of children's agency in Palestine. Within a socio-ecological and culturally and contextually informed perspective, the study introduces the development of a new instrument to investigate and evaluate children's agentic practices within their living contexts and their daily lives. First, we evaluated the model of measurement of WCAAS-Pal using a sequential exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). Following the principles of testing a quantitative measure in the context of the dual-frame sampling method, the process of validating the quantitative measure was conducted on a group of 1,166 Palestinian children aged 9 to 14 years ($m = 11.58$, $sd = 1.54$). Second, a sample of 251 Palestinian children aged between 9 and 14 years ($m = 11.82$, $sd = 1.53$) was used to compute the reliability of the instrument along with both convergent and divergent validity using the Children Hope Scale and the Children Revised Impact of Event Scale-Arabic Version measures, respectively. The results of the EFA suggested a baseline seven-factor structure to be further assessed via CFA. A complex web of agency domains that might contribute to the child psychological functioning when forced to leave in conditions of ongoing threat and military violence emerged from the analysis.

Introduction

Within the human and social sciences, the concept of agency is nowadays considered almost a *mantra* (Durham, 2008). Moreover, the idea that children are not only objects of social structures and processes but also active in their construction and determination is by now well-established within the literature, placing the concept of agency among the most important theoretical contributions of the last two decades (Oswell, 2013; Prout & James, 1990). So far, researchers have extensively documented children's competencies and abilities in playing an active role within their family, social, and community contexts and in enhancing their well-being even within challenging life contexts (Abebe, 2019; Edmonds, 2019; Steckermeier, 2019; Veronese, Cavazzoni, & Antenucci, 2019). Moreover, acknowledging that children 'have agency' led several scholars to highlight it in its multidimensional aspect, broadening its conception from mere personal competence to a dynamic process that develops and unfolds differently within social relations and within specific contexts and cultures (Edmonds, 2019; Cavazzoni, Fiorini, Veronese, 2020; Valentine, 2011; Veronese, Montali et al., under review).

Although its relevance within childhood studies, the lack of a clear definition, conceptualization and operationalization of its core meaning is still prominent within the literature (Ibrahim & Alkire, 2014; Settersen & Gannon, 2005; Spyrou, 2018). Indeed, at times this construct is associated with more purely interpersonal characteristics (e.g., self-efficacy, mastery, internal locus of control) and defined in terms of the ability to exert control over one's life and pursue goals (Beyers et al., 2003; Poteat et al., 2018). However, other scholars have instead highlighted the need for a more comprehensive definition that also considers the opportunities and constraints structurally defined by the context in which individuals are embedded (social, cultural, material, or political context) (Abebe, 2019; Cavazzoni, Fiorini, Veronese, 2020; Klocker, 2007). Thus, scholars started to conceptualizing agency as that set of 'ways in which individual counteract their life course through the choices and actions they take within the opportunities and constraints of history and social circumstances' (Elder, Johnson, Crosnoe, 2003, p.5).

The absence of a shared understanding of agency meaning is also reflected in the lack of agreement on how this construct should be operationalized. On the one hand, there is a dearth of research and studies aimed at developing psychometric measures to assess agency, highlighting the presence of a still very abstract debate on the construct (Oswell, 2013; Spyrou, 2018). On the other hand, existing measures vary depending on the agency's conceptualization that scholars have assumed. For example, validated instruments for self-efficacy (General Self Efficacy Scale), mastery (Pearlin Mastery Scale) or autonomy (Adolescent Autonomy Questionnaire) have been used to assess agency in children in different contexts (Chen et al., 2001; Pearlin & Schooler 1978; Noom et al., 2011). Still, other indicators have been directed at targeting externally observable characteristics of agency, such as freedom of movement from one place to another (Pedaste & Leijen, 2020; Richardson, Schimtz et al., 2019). In a recent literature review aimed at exploring the existing tools for measuring agency within different age groups and contexts (Cavazzoni, Fiorini, & Veronese, under review), authors highlighted the absence of shared instruments for its assessment. Moreover, they have shown how research has primarily focused on constructing and validating instruments on the adult or female population (e.g., ATPA-22, Assessment Tool for Perceived agency; WAS-61, Women's Agency Scale) (Luatamo et al., 2021; Yount et al., 2020), with few systematic efforts directed to assess children's agency (Hitlin & Elder, 2007; Veronese et al.,

2019a,b; Zimmerman et al., 2019). Among these, some attempts have addressed agency in its single aspect (e.g., political agency; agency in education) (Habashi & Worley, 2009; Burger & Walk, 2003; Reeve & Tseng, 2011), while others have emphasized the need to measure it in its multidimensionality, thus investigating it within the different dimensions in which it unfolds (Richardson, Schmitz et al., 2019). Again, the Children Hope Scale (Snyder et al., 1996), an instrument already validated and adopted in several contexts, has been used to assess children's agency (Veronese, Pepe et al., 2019a,b; Poteat, Calzo et al., 2018). Rooted in Snyder's conceptualization of the hope construct, the agency is understood as a global belief in one's ability to do and achieve goals (Snyder et al., 1996). Criticized for its lack of contextual and cultural sensitivity, other authors have attempted to grasp agency through the constructs of optimism, self-efficacy, and planfulness, or with concepts such as "the person's ability to express their voice", freedom of movement, and decision making, developing ad hoc tools (Hitlin & Elder; Zimmerman et al., 2019).

These few attempts to operationalize the construct reveal a lack of comprehensive measurements to assess agency that is culturally and contextually informed and thus inclusive of connections to the social, cultural, physical, and political characteristics of the contexts where children inhabit (Eteläpelto et al., 2013; Hitlin & Long, 2009; Ibrahim & Alkire, 2014; Spyrou, 2018; Pedaste & Leijen, 2020). Hence, we aimed to construct a new quantitative measure of children's agency in Palestine with this work. Within a socio-ecological and culturally and contextually informed perspective, the study presents the development of a new instrument to investigate and evaluate children's agentic practices within their living contexts and their daily lives.

The Study

The main aim of the present study was to present the process of construction of a new quantitative measure (War Child Agency Assessment Scale, Palestinian version – WCAAS-Pal) for measuring agency in Palestinian children exposed to political and military violence. As we know, agency is a multidimensional construct that theoretically defines the child as a self-conscious actor bearing rights (Purdy, 1992), allowing them to develop autonomously as individuals in a state of liberty. The assumption here is that if children were allowed to develop their own accord and act as agents of change in their realities, they would likely produce a better society (Oswell, 2013). Indeed, children have been depicted to be actively involved in assigning meaning to their reality and promoting their psychological well-being and functioning (Cavazzoni, Fiorini & Veronese, 2020; Veronese, Cavazzoni & Antenucci, 2018). In clinical psychology, it is possible to find several studies uncovering the multidimensional aspects of children's agency, depicting it as a psychological source for mobilizing survival skills and personal well-being among children (Veronese et al., 2018). The social and economic structure and the location of the child's family within that structure determine the parameters of childhood and agency. At present, research on children's agency has made no systematic efforts to define and measure agency's dimensions with contextually, clearly, and conceptually informed items (Hitlin & Elder, 2007; Zimmerman et al., 2019). In this sense, the development of a quantitative measure for agency in children living in areas of conflicts or military violence allows having an instrument for evaluating and planning on-site intervention programs and clinical activities.

Method

Sample

The present study adopted a dual-frame sampling method meaning that samples are drawn independently from two overlapping frames covering the population of interest (Lohr & Rao, 2000). A cluster sampling procedure (Teddlie & Yu, 2007) included children according to age, gender, degree of exposure to military violence, geographical distribution in Palestine. The first sample (A) was composed of 1,166 Palestinian children aged 9 to 14 years ($m = 11.58$, $sd = 1.54$). Children were recruited in different primary and lower secondary school locations covering three governorates in West Bank (Nablus, Jericho, and Bethlehem) and Jerusalem. Approximately 50% of participants were boys ($n = 586$). Children were attending the following school grades: 5th grade ($n = 120$ and 10.3%), 6th grade ($n = 205$ and 17.6%), 7th grade ($n = 244$ and 20.9%), 8th grade ($n = 213$ and 18.3%), 9th ($n = 235$ and 20.2%) and 10th ($n = 149$ and 12.8%). The second sample (B) was composed of 251 Palestinian children aged between 9 and 14 years ($m = 11.82$, $sd = 1.53$) recruited in primary and lower secondary schools located in the Gaza Strip. Similarly to sample A, approximately 50% of participants were boys ($n = 123$). Children were attending the following school grades: 5th grade ($n = 16$ and 6.4%), 6th grade ($n = 40$ and 15.9%), 7th grade ($n = 54$ and 21.5%), 8th grade ($n = 50$ and

19.9%), 9th (n = 43 and 17.1%) and 10th (n = 48 and 19.1%). The inclusion criteria for the present study (both samples) were being aged between 9 and 14 years at the study time and being Palestinian.

Background

The Palestinian population has been living under military occupation since the 1948 war, which worsened in '67; daily life has been characterized by ongoing experiences of extreme violence, trauma, and severe human rights violations (Human Rights Watch, 2019). The situation has only deteriorated over time. The barrier built by Israel in the West Bank isolates towns and villages, severely restricting Palestinians' freedom of movement and access to rights such as work, education and health (Amnesty International, 2020) and increasing inaccessibility to treatment in a pandemic situation such as covid-19. On the other hand, Gaza is enclosed for the 14th year in a strip in an illegal air, land and maritime blockade (Amnesty International, 2020). The entry of goods and people is controlled and restricted, with a devastating impact on the lives of 2 million inhabitants in Gaza, already severely stretched by the many military attacks over the years. In addition, Israel has continued to impose 'institutionalized discrimination, forcing the displacement of hundreds of Palestinians in both the West Bank and East Jerusalem, following the demolition of homes and other coercive measures (Amnesty International, 2020). As a consequence of these dispossession policies, the number of refugees represents 73.1% of the population of the Gaza Strip and 30.2% of the West Bank (PCBs, 2016).

The situation throughout the Palestinian territories has been dramatically exacerbated by the spread of the Covid-19 pandemic, severely affecting both the West Bank and the Gaza Strip, where the possibility of implementing social distancing and essential hygiene measures is severely compromised the conflict (OECD, 2020). Indeed, in Gaza, health systems already damaged by the blockade and bombing lack medicines, equipment, and professional staff, making it impossible to contain the virus and raising Covid mortality rates. To date (June 2021), there are over 330,000 registered cases of Covid-19 in the Palestinian territories, with 3,777 deaths between the West Bank and Gaza Strip (WHO, 2021).

Procedure

Before taking part in the study, written parental consent was requested and obtained from all children and their families. Participants and their family were both openly informed about the aim and the objectives of the study. All the data were collected anonymously, and the information was analyzed in an aggregate manner. Participation in the study was free, and no monetary or other incentives were offered. The research protocol was administered in the classroom during school hours by local psychologists and researchers trained in the social sciences. Participants were free to withdraw from the study at any time. Completion of the research protocol took 40/50 min. The settings where it was administered were designed to offer a relational space (Hydén, 2014) in which participants would feel free to express their perceptions and opinions (Veronese, Pepe, & Afana, 2016). All phases of the research were conducted following the ethical guidelines of the American Psychological Association (American Psychological Association, 2010) and the principles enshrined in the Declaration of Helsinki (World Medical Association, 2013). None of the authors reported any financial or other conflicts of interest with the research aims and outcomes. Ethical approval was obtained from the Institutional Review Board of the University of Milano-Bicocca (Protocol N. 368)

Questionnaire And Item Development

In terms of questionnaire development, eliciting children's voices (e.g. understanding how they live their lives, how they perceived their living spaces or acting as social actors from a bottom-up perspective) was central in exploring how they deal with their living circumstances. As Lieten (2008) stated, "close reading is needed with a focus on the daily lives of children, their cognitive understanding and emotional reactions, their interactions with each other and with adults of various kinds, and their strategies of action" (p. xvi). Many textbooks reported about children' agency predominantly from a Western-oriented position [see for instance Corsaro (2009) or Qvortrup (2005)], consequently, to understand the cultural-specific bases of agency in Palestinian

children, the first step was necessarily to interrogate them through an in-depth semi-structured interview (Stage 1). To this end, interviews were conducted with 75 children (7–13 years old, $m = 10.27, sd = 1.38$, 68% female) coming from different contexts in the West Bank and Gaza (i.e., rural areas, urban areas, refugee camps), all attending primary school. Interviews aimed at observing and investigating children's everyday agentic practices (Payne, 2011). Through a highly participatory methodology (interactive maps, walk-along interviews), children were asked to draw and then describe a map of their everyday places, both safe and unsafe, to understand better how the places represented were either enhancing or suppressing their agency. Upon completion of the drawing task, 30 children (40%) were asked to guide the researchers inside the represented places to continue the interview, allowing an in-depth investigation of children's agentic practices in their daily life. The areas of inquiry investigated included: descriptive information (e.g., describe the place); emotions (e.g., how do you feel in this place?); behavioural information (e.g., how do you spend your time here), and relational information (e.g., do you come to this place alone?) (for a full description, see Cavazzoni, Fiorini, Sousa, Veronese, 2021).

After conducting the interviews with children, the next step was to translate all recorded materials into English (Stage 1b; see Fig. 1 for the complete process). In translating, we followed the standard procedures of forward- and back-translation (Brislin, 1970). As a result, two practitioners with a background in psychological research methods provided an initial conceptual translation of children's words. They were fluent in English and familiar with English-speaking cultures; at the same time, they were native Arabic speakers in the target Palestinian culture. The research output of this phase was having a complete set of transcribed interviews translated in English in order to analyze the material for 1) identifying main dimensions of war children agency (i.e., conceptualizing the construct of agency from children voices) and 2) defining empirical indicators for saturating each dimension (i.e., operationalizing the constructs by developing a set of items).

Next, four collaborative discussion sessions with eight experts from the field, clinical psychologist, key informant, and PhD students were organized. In the first two sessions (Stage 2a), eight domains of children agency were mapped (social aspects, education, safety and security, freedom of movement, religion and spirituality, national identity, play and leisure, living and political environment) by using bottom-up thematic analysis (Boyatzis, 1998) to analyze interviews. The other two sessions (Stage 2b) were planned to develop approximately items covering different facets of each dimension. For instance, for the domain "freedom of movement", experts worded items such as "I feel free when I am able to reach my destination by myself" or "I can go to places on my own". At the end of this stage of the study, a set of 109 items was finally developed and screened by a panel of three Arab-native speaking and Palestinian academics (Stage 3). Each external reviewer was asked to rate from 1 (not appropriate) to 5 (totally appropriate) the degree to which the item was pertinent in measuring agency in such a cultural context. Cultural salience underpins the formation of *semantic domains*, defined as "organized set[s] of words, concepts, or sentences, that jointly refer to a single conceptual sphere" (Weller & Romney, 1988, p. 9). In addition, each item was also commented on in term of cultural appropriateness, quality of wording and redundancy. After receiving all the reviewers' assessment, the only item reporting a minimum mean score of four or more were retained. As a result, a set of 42 items covering the initially identified eight dimensions was retained. During stage 4, 228 Palestinian children were involved in the on-site pilot study to evaluate preliminary statistical proprieties (e.g., distribution of scores, checking for potential floor or ceiling effects, missing rates) of the WCAAS-Pal (e.g., on the pool of 42 items). The sample was composed of 54% of boys ($n = 123$) aged between 9 and 14. The data-gathering phase followed the criteria described in the procedure section of the present article. Analysis of scores revealed items with highly skewed distribution (i.e., mainly ceiling effect, meaning that a high rate of children has maximum scores on the observed variable). Items excluded were: "I want to learn in order to have a job and enhance my future opportunities", "I want to go to school to be successful in my life", "I choose to go to school because it is my right to obtain an education" and "When something bad happens, I prefer to stay close to my family".

Measure

War Child Agency Assessment Scale - Palestinian version (WCAAS-Pal) the questionnaire was developed to evaluate agency in children from a multidimensional perspective. The score of the questionnaire reflected different domains of children agency as emerged from a bottom-up exploratory multi-method approach. The scale consists of items to be rated on a Likert-type scale ranging from 1 (*not at all*) to 5 (*very much*). Sample items include "I can identify places that I enjoy and that are relaxing", "I

prefer to avoid places that remind me of the martyrs", and "Discovering things about the world helps me feel in control of my life".

Children's Hope Scale (CHS; Snyder et al., 1996): The Children Hope Scale was a quantitative measure assuming that children are goal-oriented, and it was composed of two domains: agency and pathways. Agency thoughts reflect the perception that children can initiate and sustain action toward a desired goal; pathways reflect the children's perceived capability to produce routes to those goals (Snyder et al., 1996). Hope reflects the combination of agentic and pathways thinking toward goals. As a result, a six-item dispositional self-report index was validated for use with children ages 8–16. The scale consists of items to be rated on a Likert-type scale ranging

from 1 (*none of the time*) to 6 (*all the time*). Sample items included: "I think I am doing pretty well", "When I have a problem, I can come up with lots of ways to solve it", and "I am doing just as well as other kids my age". Reliability score (Cronbach's alpha, Cronbach, 1951) for the two domains were: agency ($\alpha = .687$) and pathway ($\alpha = .680$).

Children Revised Impact of Event Scale-Arabic Version (CRIES-13A; Veronese & Pepe, 2021): The Children Revised Impact of Event Scale-Arabic Version was an adapted version of the Impact of Event Scale (Dyregrov et al., 1996) for the evaluation of traumatic psychological responses in children who have been exposed to ongoing traumatic events in contexts of violence. The original measurement model comprised three dimensions: intrusion, avoidance, and hyperarousal. Items are rated on a four-point scale (0 = not at all, 5 = often). Sample items included: "Do you think about erasing the event that shocked you from your memory?", "Do you have difficulty concentrating?" and "Do you try to avoid thinking about the shocking event?". Reliability score (Cronbach's alpha, Cronbach, 1951) for the three domains were: intrusion ($\alpha = .738$), avoidance ($\alpha = .715$) and hyperarousal ($\alpha = .732$).

The Strategy Of Data Analysis

The exploration of the measurement model of the War Child Agency Assessment Scale - Palestinian version (WCAAS-Pal) followed standard procedures for validating quantitative self-reports (Matsunaga, 2010; Mertler & Reinhart, 2016). This means that we evaluated the model of measurement of WCAAS-Pal using a sequential exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). The results of the EFA suggested a "baseline" factor structure to be further assessed via CFA. Given the ordinal nature of the scores (Likert-type response scale), EFA was conducted on the polychoric matrix (Holgado-Tello et al., 2010) of correlations computed using Lorenzo-Seva and Ferrando's (2015) syntax for SPSS. We also conducted the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity (Field, 2009). Parallel analysis eigenvalues were estimated using Monte Carlo PCA for Parallel Analysis 2.3 (Watkins, 2008). Velicer's minimum average partials (MAPs) were computed using O'Connor's (2000) program developed ad hoc for SPSS. The EFA comprised estimation via principal axis factoring (Briggs & MacCallum, 2003) and oblimin rotation (Darton, 1980). We applied Kaiser's criterion (K1; Kaiser, 1960) to identify the most appropriate number of factors to be retained and parallel analysis (Horn, 1965) to further inform our decisions about the most appropriate factor structure for our adapted version of the questionnaire. Parallel analysis (PA) is a data simulation technique that compares the eigenvalues of the factors extracted from the observed data with random data matrices of comparable size (Hayton et al., 2004). We also estimated Velicer's MAPs (Velicer et al., 2000). Caron (2018) observed that when the component structure is moderately oblique, MAP offers a more accurate indication of the most appropriate number of factors than does PA. Therefore, we only adopted factor loadings (λ) greater than .40 (Hair et al., 2006), dropping items that loaded on more than one factor (Costello & Osborne, 2005).

The measurement model identified from the EFA was next explored to CFA to evaluate further evidence of construct validity (Gagne & Hancock, 2006). CFA was a statistical technique that supported the development of quantitative tools by testing a given measurement model's degree of fit with empirical data (Kline, 2010). In the present paper, the following absolute and relative fit indexes were adopted: χ^2 , normed chi-square (NC), root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), Non-Normative Fit Index (NNFI) and comparative fit index (CFI). Model fit was taken to be accepted if NC was < 3.0 , RMSEA $< .08$, SRMR $< .08$, NNFI and CFI $> .95$ (Morin et al., 2013). Finally, the Akaike information criterion (AIC) was adopted to compare models. First, as recommended by Hettie (1985), a unidimensional solution was

estimated (with all indicators loading on a single factor, Model 1), and then the baseline model (Model 2) was specified (seven latent variables and 22 empirical indicators).

The subsequent stage of statistical analysis involved using multiple-group CFA (MGCFAs; Byrne, 1998) to test the factor structure of the questionnaire in gender-based cohorts of participants to enhance the ecological validity of the results (Cavioni et al. 2020). Measurement invariance between boys and girls was to be supported when configural invariance (when the same items are associated with the same factors in each group), metric invariance (when factor loadings are set to be equal across groups), scalar invariance (when factor loadings and item intercepts are constrained to be equal across groups), and full invariance (when factor loadings, item intercepts, and residuals are constrained to be equal across groups) were accepted. We set the cutoff criteria for rejecting invariance at $\Delta > .01$ for both $\Delta RMSEA$ and $\Delta SRMR$ (Chen, 2007) and a chi-square difference ($\Delta\chi^2$) that was statistically significant at the $p < .01$ level (Milfont & Fischer, 2010). The different types of invariance are hierarchically ordered, meaning that the MGCFAs procedure ends at the lowest level of invariance that fails to be satisfied (for further details, see Cheung & Rensvold, 2002). We also estimated Mahalanobis' distance ($p < 0.001$) to detect potentially multivariate outliers; no cases needed to be removed from the dataset. Analysis of missing value revealed a mean score of 1% for blank data; consequently, missing values were replaced at random (Donders et al., 2006). Statistical Package for the Social Sciences 25.0 (SPSS; Pituch & Stevens, 2015) and Analysis of Moment Structure 25.0 (AMOS; Arbuckle, 2011) software were used. Following the principles of testing a quantitative measure in the context of the dual-frame sampling method, the process of validating the quantitative measure (EFA, CFA and MGCFAs) was conducted on sample A (e.g., the training sample) composed of a large sample size. Then, sample B (e.g., testing sample) was used to compute the reliability of War Child Agency Assessment Scale - Palestinian version (WCAAS-Pal) scores along with both convergent and divergent validity. For convergent validity (i.e., convergent validity establishes construct validity using different measurement procedures to collect data about the same construct; Campbell & Fiske, 1959), WCAAS-Pal scores correlated with Children Hope Scale measures. For divergent validity (i.e., divergent validity establishes construct validity by supporting the idea that the construct of interest is different from other constructs that might be present in the study), WCAAS-Pal scores were correlated with Children Revised Impact of Event Scale-Arabic Version measures (e.g., psychological symptoms related to the exposure of potentially traumatic events).

Results

Exploratory factor analysis

Exploratory factor analysis was performed on the pool of 37 items remaining from stage 4 of preliminary analysis. The KMO ($KMO = .805$) and Bartlett's test outcomes ($\chi^2 =$

$3,917.2$, $p < .001$) suggested that the data were suitable for structure detection. Comparing EFA results with the random eigenvalues generated by the parallel analysis (see Table 1) suggested adopting a seven-factor structure. The same solution was supported by both the original and revised MAPs (O'Connor, 2000). A closer inspection of the oblimin rotated solution revealed that eight items did satisfy the criteria for acceptance (i.e., $\lambda > .40$) and other seven saturated on other factors exceeding the seven-factor suggested structure, so the other 22 items were used for the measurement model and EFA was again conducted to explore statistical properties of the remaining pool (See Table 1).

Seven different components were found, explaining approximately 46% of the variance. Of the specified initially eight domains of agency, seven were supported from the analysis of data (political agency and national identity, agency on free movement, agency on political and military violence, agency on religion and spirituality, agency on play and leisure, social agency, agency in education). In contrast, the last one was not included in the structure (safety and security). The resulting measurement model (seven factors, 22 items) was used as the baseline for the subsequent analyses.

The unidimensional model (M1) reported a mediocre fit for the data: $\chi^2(209) = 1,400.4$, $p < .001$, $NC = 6.70$, $NNFI = .559$, $CFI = .601$, $RMSEA = .070$, $SRMR = .061$, $AIC = 1,315.2$. Next, the baseline factor structure was specified (see Fig. 1) and it reported an acceptable fit, $\chi^2(188) = 564.4$, $p < .001$, $NC = 3.00$, $NNFI = .845$, $CFI = .874$, $RMSEA = .041$, $SRMR = .043$ and $AIC = 738.4$ (See Fig. 2). It is worth noting here that only the incremental fit index (i.e., $NNFI$ and CFI) did not reach the cut-off values for

acceptance while, on the contrary, the absolute fit indexes were above the recommended bound for acceptance. In cases like this, a possible explanation can be found in the general level of correlations among empirical indicators. As Kenny (1985) pointed out, in databases presenting non particularly high inter-correlations it is possible that incremental fit indexes underperformed.

The MGCFAs provided strong bases for accepting the invariance of the measure between boys and girls about the seven dimensions of the measurement model (see details in Table 2). Results indicated that χ^2 increased between each step, but steps in model comparison never reached statistically significant variation. Nevertheless, CFI and RMSEA changes were below Cheung and Rensvold (2002) cutoff. From configural

invariance to full invariance, all statistical indicators supported the idea that it would be reasonable to conclude that the measurement model represented both groups of children and endorsed the use of the questionnaire in drawing inferences from differences in latent means and sum scores between gender-based groups (Byrne et al., 1989).

Reliability and zero-order correlations of WCAAS-Pal scores with other measures of agency and psychological consequence of being exposed to potentially traumatic events were reported in table 3.

With regards to convergent validity, almost all the WCAAS-Pal scales positively correlated with both measures of hope and pathway. In particular, zero-order correlations ranged from ($r = .251, p < .001$) between social aspects and hope and ($r = .133, p < .05$) between freedom of movement and pathway. In general, the patterns of associations provided support for convergent validity of WCAAS-Pal with Children Hope Scale measures. On the other hand, the set of zero-order correlations between measures of agency and traumatic psychological responses in children did not report statistically significant associations, thus supporting divergent validity.

Discussion

We sought to construe and validate a new and, to our knowledge, the first instrument capable of assessing and measuring children's agentic competencies in the war-torn environment of Palestine (AUTHOR, submitted). According to previous literature, the instrument's dimensions emerging from the factor analysis showed and confirmed the ecological and multilevel nature of the construct of agency in children affected by war and military violence (Strang & Wessells, 2006).

As discussed below in this section, the factorial structure of the instrument revealed a complex web of agency domains that might contribute to the child psychological functioning when forced to leave in conditions of ongoing threat and military violence.

Factor Structure And Agency'S Domains

The first factor of the instrument, political *agency and national identity* ($F1$), enlightened a binding domain of agency that can help children perceive and regain control in war and structural violence conditions. Activism and the political participation of children as a form of resilience and survival skill have been widely studied in the Palestinian context and worldwide (Barber et al., 2014; Boyden, 2003; Spellings, Barber, & Olsen, 2012; Veronese et al., 2017). The national struggle against an occupying force seems to provide children with a sense of mastering their lives and the psychological benefit of feeling their participation as active social actors in a community resisting the ongoing military occupation (Massad et al., 2018; Veronese & Cavazzoni, 2020).

The second factor, *agency on free movement* ($F2$), relied on fundamental rights for children, their need to move in a free and safe place as a pivotal domain for healthy child development (Pinkard, 2019). In the particular context of Palestine, where the human landscape and child geography are constellated by military fences, checkpoints, separation walls, and obstacles in travelling within and outside the country, children's agency on their free movement emerged as a construct's key-domain and robust factor at WCAAS-Pal score. Accordingly, freedom of movement for Palestinian children has been studied as a crucial component enacting psychological well-being and adjustment to potentially traumatic events (Sousa, Kemp, El-Zuhairi, 2019; Veronese et al., 2020).

The third factor (*agency on political and military violence, F3*) showed the pervasive effect of military violence on children lives in Palestine (Qouta, Punamäki, & El Sarraj, 2008; Wilson, Turner-Halliday, & Minnis, 2021). Thus, children's agentic behaviours are forcibly oriented at mitigating the effects of pervasive violence on their lives. This factor strongly correlates with activism and political activities to cope with the social suffering characterizing the Palestinian society. Accordingly, children try to constantly adjust to the presence of soldiers, police, and surveillance systems that are threatening their lives and development, finding strategies to survive systematic violence and political oppression (Mahamid, 2020; Mahamid & Veronese, 2020; Veronese et al., 2020).

Moreover, *Factor 4, agency on religion and spirituality*, depicted the connection with spiritual and religious-informed agentic behaviours as a protective factor safeguarding children from burdens of war and violence (Veronese et al., 2017; Pandya, 2018). Religiosity in a Muslim context is a crucial determinant of individuals' sense of efficacy and personal well-being. Feeling part of a religious community and the faith in God enact human flourishing and satisfaction with life (Abu-Rayia et al., 2019). It means that religion and spirituality can provide children with agency sources to protect them from hardships in Palestine (Veronese, Cavazzoni, & Antenucci, 2018).

The fifth factor (*agency on play and leisure, F5*) indicated the crucial role of play as an agentic resource for Palestinian children (Marshall, 2013). Children are confronting with a disrupted and dangerous living environment, where it is utterly demanding to find safe places where playing and relaxing. Accordingly, children must reinvent their playgrounds, actively construing the spaces where they can feel safe and relaxed. Conversely, being deprived of personal resources to play and express creativity might increase hopelessness and powerlessness among Palestinian children (Marshall, 2014).

The sixth factor (*social agency, F.6*) defines the child as an active and situated social actor within the Palestinian society (Kovner & Shalhoub-Kevorkian, 2018). Children use social relationships to mirror their capabilities and competencies, occupying a pivotal role in their communities. Agency on the social relation assumes a more critical role in those collectivistic societies where commonality, connectedness and social support are vital factors for personal and collective well-being (Akeson & Grinberg, 2020).

The last factor (*agency in education, F.7*) showed the importance of education for children living in war-like conditions (Sinclair, 2001). In particular, Palestinian children valorize their educational opportunities as a means for resistance and existence (Diab, Palosaari, & Punamäki, 2018; Veronese et al., 2017). In addition, children use school life as a mean of self-expression and a source to cope with the ongoing violence.

In sum, our seven factors instrument built to detect agency in Palestinian children sought to portrait the social-ecology of such construct and its sensitivity to culture and context, from a hand, the universality of children participation in enacting their subjective well-being and life satisfaction, from the other (Domínguez-Serrano, del Moral-Espín, & Gálvez Muñoz, 2019). Moreover, children living in war-torn environments are likely to be deprived of fundamental development and growth resources. Accordingly, agency might help develop survival skills and guarantee sufficient sources for adjusting to cumulative hardships.

In the next section, we discuss the agency's role as a theoretically unique protective factor against potentially traumatic experiences.

Agency as a potential protective factor: the lesson learnt from convergent and divergent validity.

As discussed in the result section, WCAAS-Pal correlated in all its scales with the children hope scale instrument, while a measure of trauma did not correlate (Belen, Yildirim, & Belen, 2020). These interesting preliminary results invite us to research the potential role of agency in protecting children from traumas, buffering their mental health when exposed to war episodes and extremely violent environments (Veronese et al., 2019).

Indeed, the instrument seems to confirm its construct validity correlating with a well-known and widely validated instrument that has been built to detect children's hope and pathways for the future (Snyder et al., 1996, 1997). Therefore, both agency and hope can be considered constructs that can enact children's competencies and coping strategies when exposed to war and systematic violence (Dyeregov. Yule, & Olff, 2018; Mahamid & Berte, 2020). Agency and hope showed to be converging constructs that might help children in coping with hardships and aggression. Future research will provide further information about the relationship between the two constructs, some potential overlapping and peculiarity as showed by the low collinearity of the WCAAS-Pal and CHS in our study.

Research on the agency's role in protecting children's mental health during and after conflicts can be facilitated using WCAAS in its adapted forms, depending on the context, geographical area, and historical moment where research will be carried out. Possibly, WCAAS, compared to CHS (Snyder et al., 1996, 1997), showed its potentiality to capture influential culture and context-specific dimensions, acknowledging the complex and multifaceted nature of the construct of agency.

Before concluding, some limitations of the study must be underlined and discussed. First, the primary source for data collection was self-reported measures. Adopting this kind of method must be taken cautiously in the interpretation phase, especially when the respondents are children exposed to potentially traumatic events and living in war-torn environments. Long and difficult to read lists of items might shatter the quality of data collection due to exhaustion or discontinuous attention on the part of children. Accordingly, we carefully preferred the most straightforward items possible, intending to reduce the children's fatigue while conserving the best accuracy in the data collection. In addition, mono-method studies lack sensitivity in detecting children's deeper feelings and life experiences. Therefore, future research should be oriented toward exploring children's agency via a multi-trait multi-method research design. Second, although the WCAAS-Pal provides a robust assessment of the multifaceted agency's construct, we cannot generalize our results. Our sample cannot fully represent the Palestinian children population as it has not been selected using a probabilistic approach and clusterized sampling. Moreover, as stated above, The use of WCAAS in other cultures will require careful adaptation to guarantee the sensitivity to specific contexts in specific historical phases.

Finally, it is advisable to compute omega reliability to identify dimensions with measurement problems for a solid multidimensional measure. In general, Cronbach's alpha reliabilities indicators were based on the idea of tau-equivalence, meaning that all factor loadings are equal, and the factor model was with uncorrelated errors. On the contrary, coefficient omega is deemed as a practical alternative to coefficient alpha in estimating measurement reliability of the total scores (Deng & Chan, 2017). Low reliability should be a significant concern, and it should be routinely examined in the context of poverty and deprivation. The findings suggest that omega below 0.80 are likely to result in classification error above 10% (i.e. 10% of the poor will be classified as not poor) (Catalan, 2019); thus, it is recommended, in clinical settings, to use a multi-trait approach including other measures for cross-validating evidence emerging from the application of the WCAAS-Pal.

Declarations

Funding No funding to disclose

Conflicts of interest/Competing interests All authors do not have competing interest to disclose.

Availability of data and material data are not available for confidentiality reasons.

Code availability N/A

Ethics approval: the research has been approved by the Institutional review board at University of

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Tables

Table 1.

Results of Exploratory Factor Analysis on War Children Agency Assessment Scale: Pattern and structural coefficients.

Item	Factor1	Factor2	Factor3	Factor4	Factor5	Factor6	Factor7
17. I protest in order to end the occupation.	.665						
18. I feel hopeful when thinking about the possible end of the occupation.	.644						
29. Whenever I wave a Palestinian flag, I feel that we are all struggling for freedom in Palestine.	.580						
28. I want to learn how to resist and struggle for our freedom.	.528						
20. I feel happy because I can plan to walk alone in my neighborhood.		.690					
32. I feel in control when I am able to reach my destination by myself.		.536					
42. Discovering things about the world helps me feel in control of my life.		.434					
4. When I don't understand what is going on in my country I feel helpless and I don't know what to do.			.725				
3. I prefer to avoid places that remind me of the martyrs.			.618				
15. When I see the Israeli army, I feel that I am unable to control my own life.			.615				
19. I decide to go to a mosque/church in order to feel safe.				.885			
22. I choose to go to a mosque/church to feel comfortable and happy.				.882			
16. Praying makes me feel closer to God.				.442			
14. I can identify places that I enjoy and that are relaxing.					.652		
13. I can find people/friends that I can play with.					.523		
11. I can choose to play outside my home.					.459		
36. I can ask my neighbor if I need help because we take care of each other						.768	
27. In my neighborhood, we all do things to help each other.						.698	
10. I choose to ask for help from people when I feel that I am not safe.						.473	
25. I choose to go to school to improve myself and my skills.							.452
23. I want to go to school in order to have chances to travel outside my country.							.447

1.35 1.32 1.28 1.26 1.23 1.21 1.18

Eigenvalues from parallel analysis (k=500 sample)

Actual Eigenvalues from factor analysis	5.14	2.04	1.65	1.48	1.40	1.29	1.20
Explained variance	15.96	6.42	5.53	5.21	4.58	4.26	4.17
Cumulate variance	15.96	22.37	27.91	33.12	37.70	41.96	46.13

Note: KMO = 0.805; Bartlett's test = 3,917.1; h^2 = communalities; u^2 = uniqueness. KMO = Kaiser-Meyer-Olkin.

Table 2

Multigroup Analysis of the War Child Agency Assessment Scale - Palestinian version (WCAAS-Pal) between girls and boys.

Type	χ^2 (df)	CFI	RMSEA	RMSEA 90% C.I.	Model Comparison	$\Delta\chi^2$ (Δ df)	Δ CFI	Δ RMSEA	Decision
M1. Configural Invariance	802.61 (367)	.860	.031	[.028- .034]	-	-	-	-	Accept
M2. Metric Invariance	831.78 (391)	.856	.032	[.048 - .034]	M1	29.17 (24)	.004	.001	Accept
M3. Scalar Invariance	841.39 (413)	.860	.030	[.027 - .033]	M2	9,61 (22)	.004	.002	Reject
M4. Full Invariance	872.21 (441)	.859	.029	[.026 - .032]	M3	30.81 (28)	.001	.001	Reject

Note: df = degree of freedom, CFI= Comparative fit index, RMSEA = Root Mean Square Error of Approximation, C.I.=Confidence Interval

Table 3.

Reliability, convergent and divergent validity of WCAAS-Pal scores in relation to the testing sample (n=251)												
	1	2	3	4	5	6	7	8	9	10	11	12
1. National Identity	-											
2. Freedom of movement	.216**	-										
3. Living and political environment	.013	.075	-									
4. Religion and spirituality	.352**	.237**	.066	-								
5. Play and leisure	.248**	.309**	.101	.155**	-							
6. Social Aspect	.448**	.086	.076	.190**	.194**	-						
7. Education	.291**	.293**	.049	.085	.208**	.084	-					
8. Hope scale	.189**	.160**	.047	.054	.132*	.251**	.230**	-				
9. Patways	.157**	.133*	-.015	.133*	.090	.239**	.197**	.661**	-			
10. Intrusion	.071	.014	-.050	.027	.083	.015	.029	.047	.047	-		
11. Avoidance	.068	.028	-.055	.007	.032	.010	.052	.010	.039	.679**	-	
12. Hyper-arousal	.146*	.040	.046	.112	.020	.051	.017	.059	.080	.470**	.380**	-
Omega (reliability)	.722						.687 ^a	.680 ^a	.738 ^a	.715 ^a	.732 ^a	

Note: * $p < .05$, ** $p < .01$, ^a Cronbach's alpha

Figures

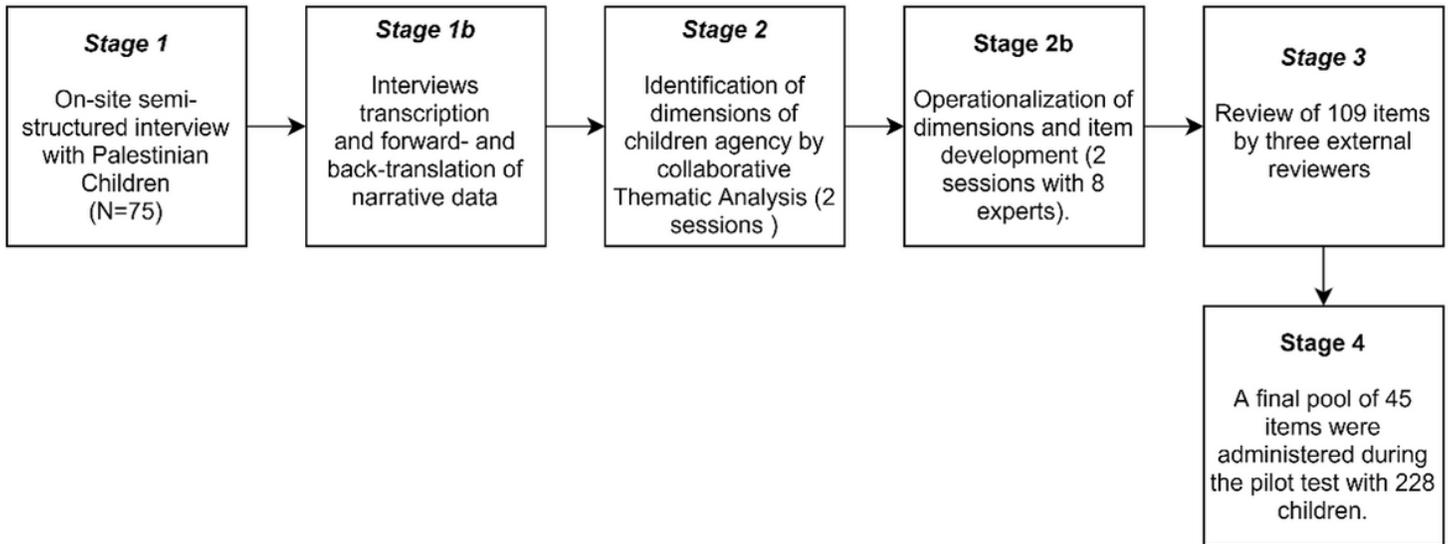


Figure 1

Summary of stages in the development of the WCAAS-Pal: from children voices to empirical indicators. (42 items)

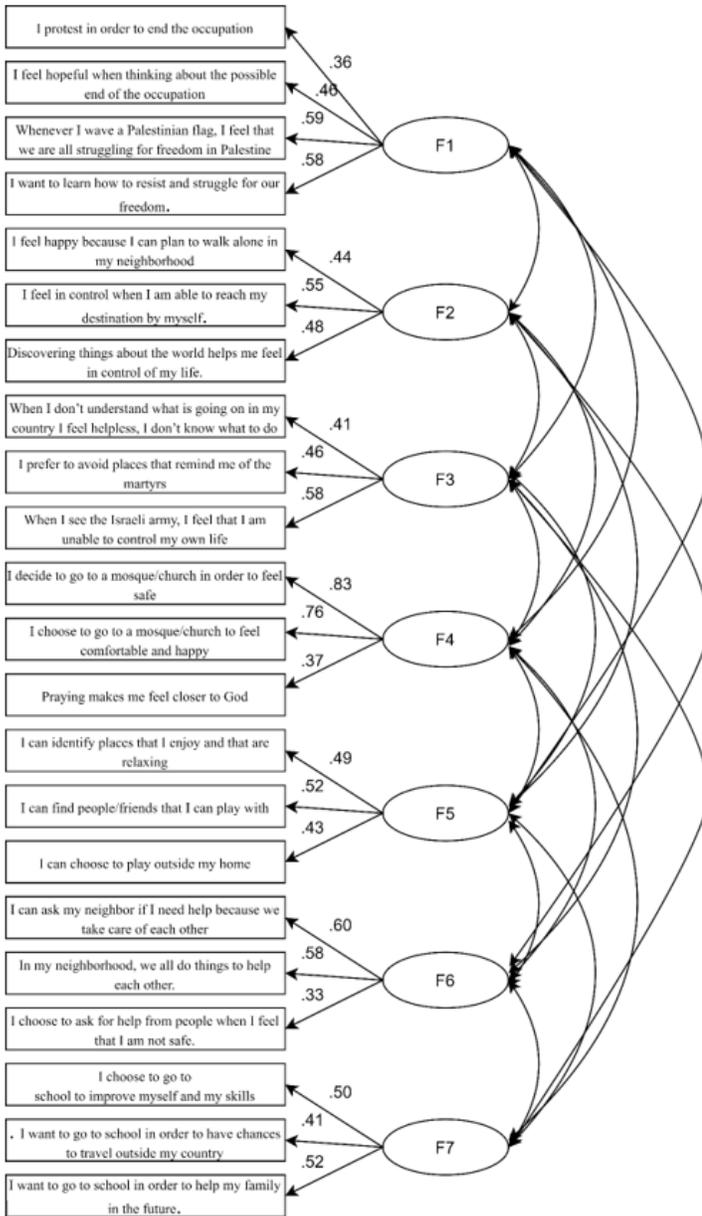


Figure 2

Confirmatory factor analysis: measurement model of War Child Agency Assessment Scale - Palestinian version (WCAAS-Pal). Standardized saturation values were reported.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- [figureAgencyale.docx](#)
- [TablesagencyWCAASFig1.docx](#)