



The Identification With All Humanity (IWAH) scale: its psychometric properties and associations with help-seeking during COVID-19

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Abstract

The Identification With All Humanity (IWAH) scale was designed to measure the extent to which an individual identifies oneself with all human beings. The current research aimed to conduct the validation of IWAH in a Chinese population and its convergent validity, as well as test the implications of IWAH in associations with help-seeking behaviour during COVID-19. A serial of three studies was conducted from September 1st 2020 to the end of October 2020. The series of studies included Study 1- Exploring the dimensions of the IWAH scale with a sample of 2,881 participants, Study 2- Confirmatory Factor Analysis for the Chinese IWAH dimensions with a separate sample of 6,667 participants, and Study 3- Role of the IWAH in the COVID-19 pandemic with a sample of 9,046 participants. Study 1 found the Chinese version of the IWAH scale to be a two-dimensional construct, with factor 1 - Bond with Humanity and factor 2 - Human Kinship. Study 2 confirmed the two-factor construct as found in Study 1. It also showed positive relations between IWAH and moral judgement, collectivism, nature connectedness, and negative relations with callousness, and having anxiety and depressive symptoms. Study 3 found that IWAH was negatively related to fear of COVID-19 and positively related to the likeliness of help-seeking. This is the first research to test the factorial structure of the IWAH scale in a Chinese population, with the adaptation showing good psychometric properties. The implication of IWAH on fear of COVID-19 and help-seeking provided further understanding of the possible practical value of IWAH during times of global stressful life events. Furthermore, study 3 is the first to explore how IWAH relates to anxiety, depression, and callousness.

Keywords The identification with all humanity (IWAH) scale · Validation · COVID-19 · China

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Introduction

An individual's social identity is substantially derived from attaching and identifying oneself with a relevant group or a higher order of social unit (Reese et al., 2015). Social identity theory argues that identification within a group can lead to the attempt to achieve a positive social identity by positively differentiating oneself within the group and from other individuals who are outside of that group (Reese et al., 2015; Tajfel & Turner, 1979). Research has indicated that identification on a high level of social abstraction, such as on the level of all humanity, is associated with prosocial and supportive behaviours towards disadvantaged individuals, human rights, global harmony, and global charity (Bassett & Cleveland, 2019; McFarland, 2010a, b; McFarland et al., 2019; Reese et al., 2015). There is an increasing amount of research on extremely inclusive superordinate identities, such as identification as world citizen, global citizen, and with world community (Reese et al., 2014; Reysen & Hackett, 2016; Reysen & Katzarska-Miller, 2013; Türken & Rudmin, 2013) or global human identification and identification with all humanity (McFarland et al., 2019). McFarland and colleagues proposed the concept of 'identification with all humanity', which goes beyond the social identity perspective by expanding identification as a moral concept and as a psychological construct. The concept of identification with all humanity embraces the idea that caring, concerning, and helping all humanity, regardless of diversity in race, religion, and other distinctions is beneficial for everyone (McFarland et al., 2013, 2019).

McFarland and colleagues developed the Identification With All Humanity (IWAH) scale to measure the extent to which an individual identifies oneself with all human beings (McFarland et al., 2012). The IWAH measures identification on three levels, including local community, national identity, and all humanity (McFarland et al., 2012, 2013). McFarland and colleagues (McFarland et al., 2012) reported that the psychometrics behind the original IWAH scale constituted a single factorial structure. Another psychometric study with this scale in Germany found that IWAH contains two dimensions: global self-definition, which refers to categorization or inclusion of the self in an ingroup, and global self-investment, which can be described as a purposeful choice of categorising oneself to a group and investing in that group to get group satisfaction, centrality, and solidarity through active engagement within the group's network (Reese et al., 2015). Reese and colleagues (Reese et al., 2015) further found that compared to global self-definition, global self-investment was a stronger predictor of a social dominance orientation, authoritarianism, and behavioural

intentions. Another study in the United States (US) also showed the same two-factor structure of the IWAH scale, but proposed different labels: with the first factor named as "Adler/Maslow" (called self-investment in Reese et al., 2015) reflecting helping, responsibility, loyalty behaviours and feelings, and the second factor named as "ingroup identification" (called self-definition in Reese et al., 2015) assessing ingroup identification from a social identity perspective (Reysen & Hackett, 2016). Moreover, the study also found that the first factor strongly impacted the associations between IWAH and prosocial values. Recently, Hamer and colleagues (Hamer et al., 2021) conducted psychometric tests of the factorial structure of the IWAH scale in five countries including the US, Poland, France, Mexico, and Chile, which found the IWAH scale factorial structure to be one superordinate factor with the same two sub-factors named "bond" and "concern". However, none of these studies were done in China, nor in any other Asian collectivist countries (Hamer et al., 2021). China has been described as a familistic society, with a strong distinction between ingroup and outgroups, where relationships with family and other forms of kinship are of primary importance (Allik & Realo, 2004; Fukuyama, 1996; Triandis, 2018). Moreover, China has a strong association between collectivism and trust (Allik & Realo, 2004), atypical for collectivist countries where this connection is usually low, and people trust mostly family and friends, and not broad social groups. Would the factorial structure of IWAH look similar in China compared to one found in Western countries? We aimed at finding an answer to this question.

The concept and measurement of IWAH is attracting researchers' attention worldwide on various research topics ranging from climate change and food waste studies to religious studies, as well as refugees support studies etc. (Bassett & Cleveland, 2019; Hamer et al., 2019, 2021; Loy et al., 2022; McCutcheon et al., 2015; McFarland & Brown, 2008; Pong, 2021; Reysen & Hackett, 2016; Sparkman & Hamer, 2020). The latest research on IWAH shows its positive role during COVID-19 pandemics. Studies showed that IWAH was positively related to the willingness to help others during the pandemic (Barragan et al., 2021; Deng, 2021). In a study with adolescents, the score on the IWAH scale had a direct and indirect link to the willingness of adolescents to empathize with people all over the world in COVID-19 affected areas (Deng, 2021). Furthermore, people are more likely to be vaccine-hesitant if they hold negative attitudes towards migrants, which is opposite to the concept of identifying with all humanity (Murphy et al., 2021). IWAH has also been suggested as a protective factor against post COVID-19 trauma, with those who scored higher on the scale showing more post-traumatic growth, while those who scored low on the scale showed more post-traumatic

symptoms (Vazquez et al., 2021). Thus, we assume that IWAH may negatively relate to individual fear of COVID-19 during the pandemic.

The COVID-19 pandemic has substantially impacted people's physical and psychological health all over the world (Xiong et al., 2020). Like other countries, people in China are undergoing serious threats to their mental health from the pandemic (Qiu et al., 2020). Accumulating studies show that in China the pandemic has triggered a variety of psychological problems and amplified previously existing or underlying psychiatric disorders, such as anxiety, depression, panic disorder and post-traumatic stress disorder (Cenat et al., 2021; Lu & Jennifer, 2020; Wang et al., 2020). Many researchers propose that timely mental health care and psychological interventions are required to address these major concerns (Chen et al., 2020; Xiang et al., 2020). More importantly, help-seeking is the initial step taken to access mental health care (Nadler, 1991). In a Canadian study on men, it was found that those with higher fear of COVID-19 and higher depressive and anxiety symptoms were more likely to engage in help-seeking (Ogrodniczuk et al., 2021) than those who did not. This suggests help-seeking to be a key factor in understanding the fear of COVID-19. Although there are many studies testing the importance of IWAH during the pandemic, for instance, one study on adults suggests that the higher one scores on the IWAH scale the more likely it is that one will accept the vaccination for COVID-19 (Marchlewska et al., 2022; Murphy et al., 2021), there are no existing studies that have explored IWAH and help-seeking during the pandemic. Especially during the pandemic, it is important to find the factors which relate and could potentially promote help-seeking and the relationship this has with IWAH. Thus, we aim to explore this issue in one of our studies, especially the mediating effects of IWAH between fear of COVID-19 and willingness of help-seeking.

The current research aims to investigate the underlying factor structures of the IWAH scale in China, its reliability and convergent validity, as well as the associations of IWAH and help-seeking during the pandemic of COVID-19. The current research consisted of a series of three studies. In Study 1, an Exploratory Factor Analysis (EFA) was used to explore the underlying factor structure of the IWAH scale. In Study 2, a Confirmatory Factor Analysis (CFA) was used to replicate the factor structure in Study 1 using a separate sample, as well as comparing some different factor structures as quality checks. In addition, reliability and convergent validity were examined in Study 2. In Study 3, path analysis was used to explore the mediating effect of IWAH, underlying the association between fear and help-seeking during the COVID-19 pandemic.

Study 1: exploring the dimensions of the IWAH

Method

Participants and procedure

Participants from a University in Beijing China (including students and staff) were invited to complete an online survey by distributing leaflets from 1st September 2020 to 30th September 2020. All participants were informed of the purpose of this study and their right to withdraw at any time on the information sheet. Online informed consent was also obtained from each participant before commencing the survey, those 16–17 years of age were encouraged to discuss the study with a guardian to ensure their guardian had knowledge of the study before consenting to participate. 2,881 participants completed the questionnaire and all of them were included in the analysis. This study received approval from the Research Ethics Review Committee of Central University of Finance and Economics, China.

Measures

Demographic variables Demographic information including gender, age, ethnicity, place of origin (i.e., city, town, country) were collected.

Identification with all humanity Identification with all humanity was measured by the nine-item IWAH scale (McFarland et al., 2012). The IWAH Scale explained about their reliability and validity with their citations. Participants were asked to indicate the degree of identification with three types of groups (i.e., community, nation, people all over the world) on a 5-point likert scale, ranging from 1 (*not at all*) to 5 (*very much*). Example items include “How much would you say you have in common with the following groups?: people all over the world”, “how much do you identify with all humans everywhere?” Only the responses with “people all over the world” were included in the analyses as a measure of identification with all humanity (see Hamer et al., 2021). Specifically, the IWAH score was the mean score of identification with “people all over the world”, with a higher score indicating a higher identification. The process of translation followed the recommended procedures for cross-cultural scale adaptation. The researchers conducted initial translation by two English-Chinese bilingual native Chinese translators, synthesis of translation by a third bilingual Chinese translator, back translation by two bilingual native English speakers and then an expert review by several psychology researchers.

Analytic approach

Descriptive statistics were performed to describe the sociodemographic characteristics. An EFA was conducted to explore the dimensions of the IWAH scale, with principal axis factor analysis and direct oblimin rotation. The criteria of factor extraction were eigenvalues greater than 1. All statistics in Study 1 were conducted using SPSS 23.0, with a significance level of 0.05 (two-sided).

Results and discussion

Sociodemographic characteristics

A total of 2,881 participants were included in the final sample, with the age ranging from 16 to 47 years old ($M=21.71$, $SD=3.40$). The majority of the participants were birth-assigned females (69.7%), Han ethnicity (89.2%), and lived in major cities (64.3%).

Dimensions of IWAH

We first tested the ceiling and floor effects of the Chinese version of the IWAH scale (Lim et al., 2015). The total score of the IWAH scale ranged from 1 to 5, with 1.0% scoring 1 and 0.9% scoring 5 (both less than 15%), indicating that there were no ceiling or floor effects in the Chinese version of the IWAH. Second, we explored the factor construct of IWAH using EFA. Results of the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy Test and the Bartlett Test of Sphericity showed that the data was meritorious and suitable for EFA ($KMO=0.894$; $\chi^2=12454.987$, $df=36$, $p<.001$). Factor analysis for the IWAH scores generated two factors, accounting for 56.3% of the total variance. As shown in Table 1, item 1–5 primarily loaded on Factor 1, and item 7–9 loaded on Factor 2. Item 5 moderately loaded on both

Factor 1 (0.45) and Factor 2 (0.41). Specifically, the Chinese version of the IWAH scale is not a single dimension construct, it is a two-dimensional construct. Furthermore, Item 6 rather than Item 5 loaded on both factors, indicating the two-dimension construct in this study was slightly different from those found in previous research (Hamer et al., 2021; Reese et al., 2015; Reysen & Hackett, 2016).

Similar to the original structure of the IWAH scale, proposed by McFarland (McFarland et al., 2012), identification within one's community and identification with the Chinese group each yielded a one-factor solution. As expected, the IWAH scores correlated substantially with identification with community ($r=.48$, $p<.001$) and the Chinese group ($r=.74$, $p<.001$), respectively, which correlated with each other ($r=.73$, $p<.001$).

Study 2: confirmatory factor analysis for the chinese IWAH dimension

In Study 2, we aimed to examine the factor structure of the Chinese version of IWAH further in comparison with the factor constructs found in previous studies (Hamer et al., 2021; Reese et al., 2015; Reysen & Hackett, 2016). In addition, we examined the reliability and convergent validity of the final scale and subscales.

Method

Participants and procedure

Participants from a University in Beijing China (including students and staff) were invited to complete a second online survey by distributing leaflets from 10th October 2020 to 30th October 2020. There were 6,667 participants who finished the questionnaire and all of them were

Table 1 Factor loading and communality for each item of the IWAH Scale in Study 1 ($N=2,881$)

Items	Factor 1	Factor 2	Communality
2. How often do you use the word "we" to refer to people all over the world?	0.73		0.53
1. How close do you feel to people all over the world?	0.69		0.46
4. Sometimes people think of those who are not a part of their immediate family as "family." To what degree do you think of all humans everywhere as "family"?	0.68		0.41
3. How much would you say you have in common with people all over the world?	0.68		0.49
5. How much do you identify with (that is, feel a part of, feel love toward, have concern for) all humans everywhere?	0.60		0.60
6. How much would you say you care (feel upset, want to help) when bad things happen to people anywhere in the world?	0.45	0.41	0.59
8. How much do you believe in being loyal to all mankind?		0.87	0.73
7. How much do you want to be a responsible citizen of the world?		0.81	0.61
9. When they are in need, how much do you want to help people all over the world?		0.67	0.65

Factor 1: Item 1–5; Factor 2: Item 7–9

entered into the analysis. This study also received ethical approval from the Research Ethics Review Committee of Central University of Finance and Economics, China.

Measures

In addition to the same information collected in Study 1, the scales listed below were used.

Moral judgement Moral judgement was assessed using the 15-item Moral Behaviour Scale (McGuire et al., 2009). Participants were asked about explicit moral norms (e.g.; “How wrong is it if you fail to keep minor promises?” “How wrong is it if you keep money found on the ground?”), with response options of “not wrong”, “mildly wrong”, “moderately wrong”, or “severely wrong”, all on a 4-point scale. All items were summed to generate a moral judgement score in this study, showing good reliability (Cronbach’s $\alpha=0.89$), with higher scores indicating a higher moral judgement.

Collectivism The Individualism and Collectivism Scale (Singelis et al., 1995) was adopted to measure collectivism. Of the 32 items, 16 items assessing collectivism were used (e.g.; “The well-being of my co-workers is important to me”, “Children should feel honoured if their parents receive a distinguished award”), and 16 items assessing individualism were abandoned as this would not reflect IWAH. Responses are rated on a five-point scale, ranging from 1 (“never” or “definitely no”) to 5 (“always” or “definitely yes”). The collectivism score is calculated by adding the scores of the 16 items, a higher score indicates a higher level of collectivism; this scoring system has been used widely in previously published Chinese research that uses the scale. In this study Cronbach’s alpha was good ($\alpha=0.90$).

Connectedness to nature The Connectedness to Nature Scale (CNS) was used to measure individual affective and experienced connections to nature (Mayer & Frantz, 2004). It consists of 14 items with responses (e.g.; “I often feel a sense of oneness with the natural world around me”, “I often feel like I am only a small part of the natural world around me, and that I am no more important than the grass on the ground or the birds in the trees”) on a 5-point scale ranging from “strongly disagree” to “strongly agree”. All item scores are summed up to generate a composite score of connectedness to nature, with higher scores indicating a higher level to which an individual feels connected with nature (Cronbach’s $\alpha=0.91$).

Indifference As a personality trait, indifference was assessed by the Inventory of Callous-Unemotional Traits (ICU) (Kimonis et al., 2008). This was due to the connection

between IWAH and prosocial tendencies, which suggests that being callous is negatively connected to IWAH (Deng, 2021). The ICU consists of 24 items with three dimensions: callousness (e.g., “The feelings of others are unimportant to me”), uncaring behavior (e.g., “I do things to make others feel good” - reverse scored), and unemotional behavior (e.g., “I express my feelings openly” - reverse scored). The responses are rated on a four-point scale, ranging from 0 = “not at all true” to 3 = “definitely true”. A composite indifference score is calculated by adding all items (Cronbach’s $\alpha=0.88$), with higher scores indicating a severe indifference trait; again, this scoring system has been used by previous researchers who have developed this scale.

Anxiety and depressive symptoms Anxiety symptoms were measured using the 7-item Generalized Anxiety Disorder Scale (GAD-7), which is a self-report screening scale used to measure anxiety symptoms (Spitzer et al., 2006). It is comprised of 7 items and participants are asked to indicate the frequency of the occurrence of symptoms (e.g., “feeling nervous, anxious or on edge”, “not being able to stop or control worrying”) over the past two weeks on a 4-point scale (0 = not at all; 1 = several days; 2 = more than half the days; 3 = nearly every day). Higher scores indicate more severe anxiety symptoms. It has been validated in China (Tong et al., 2016). A composite anxiety score was generated by summing all item scores (Cronbach’s $\alpha=0.92$), as instructed by the clinical guidelines.

Similarly, depressive symptoms were measured by the self-reported screening 9-item Patient Health Questionnaire (PHQ-9) (Kroenke & Spitzer, 2002). It includes 9 self-screening items concerning the frequency of depressive symptoms over the past 2 weeks (e.g.; “little interest or pleasure in doing things”, “thoughts that you would be better off dead or of hurting yourself in some way”). Participants were asked to rate symptoms on a 4-point scale, varying from 0 (“not at all”) to 3 (“nearly every day”). The PHQ-9 has also been validated in the Chinese context (Wang et al., 2014). All items are summed to generate a composite depression score (Cronbach’s $\alpha=0.89$), with higher scores indicating more severe depressive symptoms.

Analytic approach

In order to confirm the fitness of the factor structure derived from Study 1, a CFA was performed using Maximum Likelihood (ML) estimates. In addition, we also compared this structure with the one-factor or two-factor solutions proposed by previous studies using fitness indices. The goodness of model fit was evaluated by a number of statistics, i.e., chi-squared-degree of freedom ratio (χ^2/df), root mean square error of approximation (RMSEA), comparative

fit index (CFI), Tucker-Lewis index (TLI), and Standardized Root Mean Residual (SRMR) (Hu & Bentler, 1998). Acceptable goodness-of-fit model parameters were defined as RMSEA < 0.08, CFI > 0.90, TLI > 0.90, SRMR < 0.08 (Zhonglin et al., 2004). When comparing models, the model with lower Akaike Information Criterion (AIC) and Bayesian Information Criterion (BIC) were considered a better fit for the data. Furthermore, we examined the reliability by calculating Cronbach's alphas and item-total correlation coefficients. To assess the convergent validity, we conducted a correlation analysis between IWAH scores and related variables. All statistics in study 2 were conducted by SPSS 23.0, Mplus 8.3, and R 4.0.2, with a significance level of 0.05 (two-sided).

Results and discussion

Sociodemographic characteristics

The final sample included 6,667 participants, with the age ranging from 16 to 44 years old ($M = 21.07$, $SD = 2.64$). Of all participants, 4,138 (62.1%) were birth-assigned female, 5,726 (85.9%) were ethnic Han, 4,458 (66.9%) were urban dwellers, 5,274 (79.1%) were from nuclear families, 5,065 (76.0%) reported moderate family economic status, and 4,183 (62.7%) were the only child in the family.

Construct validity

The construct validity was examined in Study 2. First, the total score of IWAH ranged from 1 to 5, with 1.8% scoring 1 and 1.2% scoring 5 (both less than 15%), indicating that there were no ceiling or floor effects of the IWAH scale in this study. Second, we confirmed the rationality of the two-factor construct based on the results of EFA in Study 1. The results showed that a two-factor structure without Item 6 was a better fit for the data than the two-factor structure with 9 items (see Table 2). Third, we compared the original one-factor model (McFarland et al., 2012), two-factor model (without item 6 based on Study 1), and two-factor model (without item 5 as proposed in previous studies) (Hamer et al., 2021; Reese et al., 2015; Reysen & Hackett, 2016). The model indices showed

that the two-factor structure without Item 6 fit the data better than without Item 5 (see Table 2). As shown in Fig. 1, the final construct model showed fair fitness ($\chi^2/df = 36.601$, RMSEA = 0.073, CFI = 0.975, TLI = 0.961, SRMR = 0.030). In brief, the Chinese version of the IWAH scale had a two-factor construct, with items 1–5 loading on Factor 1 and items 7–9 loading on Factor 2.

Reliability

The reliability of the Chinese version of the IWAH scale was examined. The internal consistency for the whole scale was good (Cronbach's $\alpha = 0.90$). The reliability of the two subscales were also tested, with Factor 1 (Cronbach's $\alpha = 0.84$) and Factor 2 (Cronbach's $\alpha = 0.87$) subscales both having good reliability.

Convergent validity

In previous research IWAH was found to be positively related to some variables, such as empathy, prosocial values, moral reasoning, and globalism (McFarland et al., 2012; Reysen & Hackett, 2016). The results of Pearson's correlation in our study showed that the IWAH was positively related with moral judgement ($r = .34$, $p < .001$), collectivism ($r = .44$, $p < .001$), nature connectedness ($r = .39$, $p < .001$), and negatively associated with callousness ($r = -.25$, $p < .001$), anxiety symptoms ($r = -.13$, $p < .001$), and depressive symptoms ($r = -.15$, $p < .001$). These results confirmed IWAH scale's convergent validity (Table 3).

Study 3: role of IWAH in the COVID-19 pandemic

Method

Participants and procedure

Participants from two comprehensive Universities, one in Beijing (North of China) and the other in Xiamen (South of

Table 2 Model fit statistics for different factor structures in Study 2 ($N = 6,667$)

Model	Model Fit Indices						
	χ^2/df	CFI	TLI	RMSEA [90% CI]	SRMR	AIC	BIC
1-factor (Item 1–9)	191.303	0.838	0.784	0.169 [0.165, 0.173]	0.070	144860.572	145044.305
2-factor (Item 1–6; Item 7–9)	62.993	0.951	0.930	0.096 [0.092, 0.101]	0.036	141274.208	141471.551
2-factor (Item 1–5; Item 7–9)	48.707	0.965	0.948	0.085 [0.080, 0.089]	0.036	127797.834	127967.957
2-factor (Item 1–4; Item 6–9)	75.413	0.945	0.918	0.106 [0.101, 0.110]	0.047	128312.304	128482.427

Fig. 1 The final two-factor structure of the Chinese version of the IWAH scale. The coefficients in the figure are standardized coefficients, with standard errors in the brackets

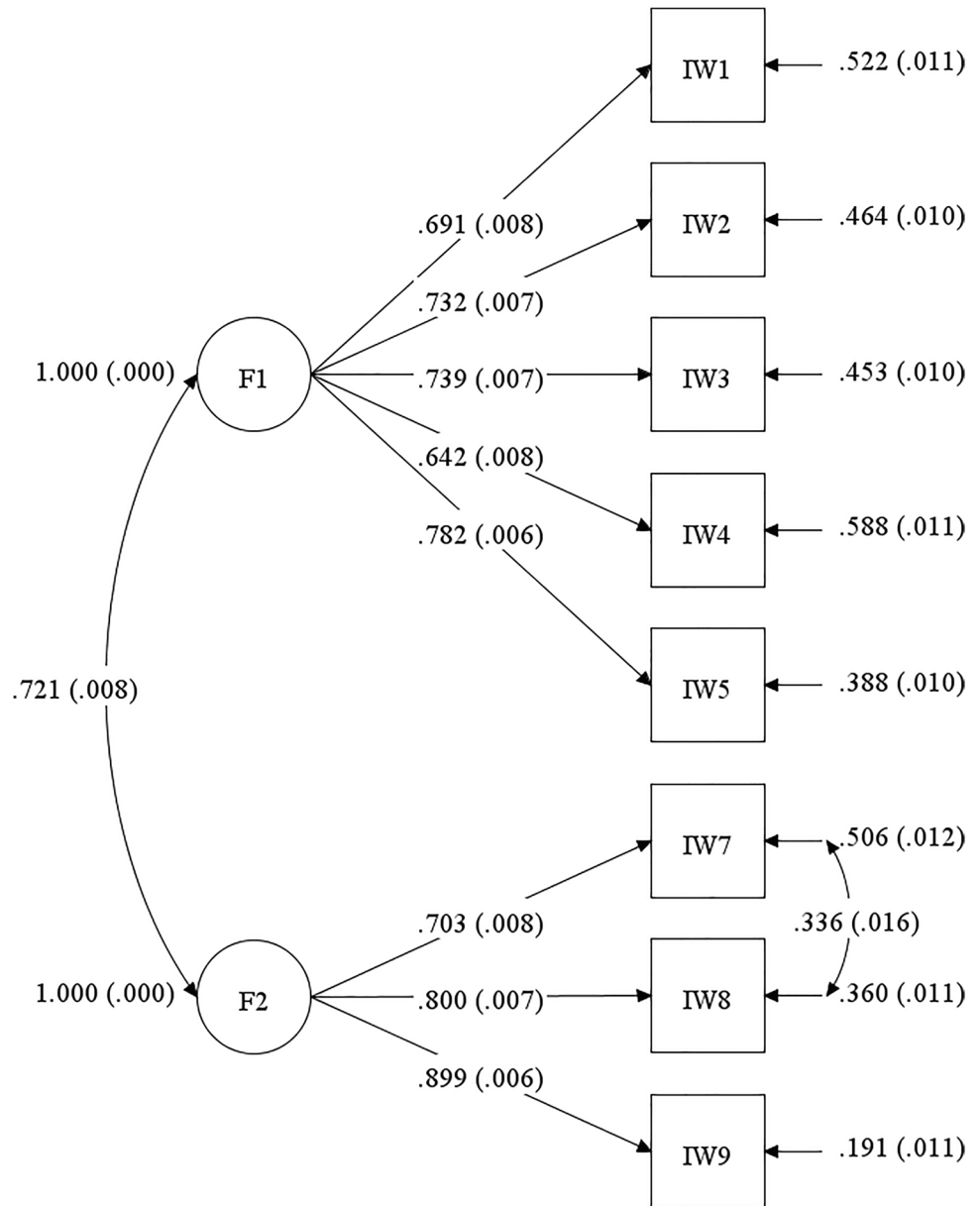


Table 3 Pearson’s correlations between main variables (N=6,667)

Variable	M	SD	1	2	3	4	5	6	
1. IWAH	5.34	6.76	1						
2. Moral judgement	35.56	7.88	0.34***	1					
3. Collectivism	57.29	9.39	0.44***	0.34***	1				
4. Connectedness to nature	54.74	9.07	0.39***	0.23***	0.56***	1			
5. Indifference	29.41	6.70	-0.25***	-0.17***	-0.34***	-0.38***	1		
6. Anxiety	3.78	3.97	-0.13**	-0.09***	-0.05***	-0.04***	0.13***	1	
7. Depression	3.36	4.03	-0.15**	-0.10***	-0.07***	-0.06***	0.21***	0.77***	1

** $p < .01$, *** $p < .001$

China), were invited to complete an online survey through a QR code distributed by each of the head teachers in the two Universities from 25th September to 16th October,

2020. In Chinese Colleges and Universities, each class has a head teacher who is responsible for the students’ affairs. 9,548 participants including undergraduate, graduate and

post-doctoral students participated in this survey and 9,281 completed the questionnaire, with a response rate of 97.2%. For this study, however, we excluded participants who had a history of mental health issues. This resulted in a total sample of 9,046 participants. This study received ethical approval by the Research Ethics Review Committee of Central University of Finance and Economics, China as well.

Measures

Again we used the same IWAH scale as in Study 1 and 2. Additionally, scales listed below were used.

Fear of COVID-19 The Fear of COVID-19 Scale (FCV-19 S) (Ahorsu et al., 2022) was used to assess fear of COVID-19 among the participants. The scale consists of seven items, with questions including, “I am most afraid of coronavirus-19” or “I cannot sleep because I’m worrying about getting coronavirus-19”. Answers are provided on a 5-point Likert-type scale, ranging from 1 = “strongly disagree” to 5 “strongly agree”. The total score is then calculated by adding up the results. Ahorsu et al. (2022) found a good Cronbach’s alpha of 0.82. This scale has been validated in a recent study (Dadfar et al., 2021). In this study, we also found a good Cronbach’s alpha of 0.88.

Help-seeking To assess the likeliness of help-seeking, we used the General Help Seeking Questionnaire (Wilson et al., 2007). Based on the recommendation of Wilson et al. (2007), the scale was adapted to consist of five standard questions to probe help-seeking intentions when considering self-harm or suicide. The standard question is formulated as “If you consider committing suicide or self-harm in the future, will you seek help from anyone?”, with four additional questions where ‘anyone’ was replaced by ‘your parents’, ‘a classmate’, ‘a teacher’ and ‘a mental health professional’. Responses ranged on a 7-point Likert-type scale, with 1 = “extremely unlikely” and 7 = “extremely likely”, with higher scores indicating higher levels of help-seeking. The composite score of the scale was calculated with an excellent Cronbach’s alpha of 0.94 in this study.

Analytic approach

Pearson’s correlation coefficients were calculated to analyze the relationship between IWAH, fear of COVID-19,

and the likeliness of help-seeking if considering suicide or self-harm. Path analysis was used to analyze the direct and indirect relationships between these variables. SPSS version 24.0 was used for analysis and significance level was set as 0.05 (two sided).

Results and discussion

Sociodemographic characteristics

The final sample included 9,046 participants, aged 16 to 47 years old ($M = 21.71$, $SD = 2.92$). The majority of the participants were birth-assigned females (65.3%), ethnic Han (86.9%), and lived in big cities (65.7%). The majority of the participants were also only children (62.5%) and came from families with an average income (76.4%).

Mediating effects of IWAH

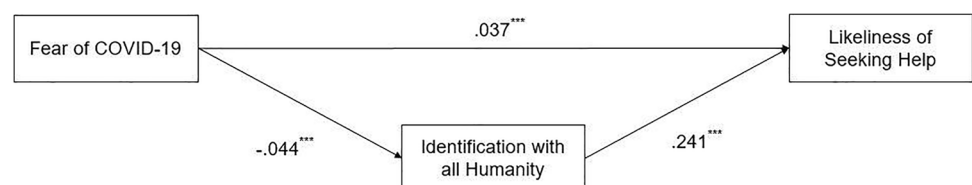
The results between main variables showed that fear of COVID-19 was weakly negatively correlated to IWAH ($r = -.04$, $p < .001$), and the likeliness of seeking help ($r = .03$, $p < .011$). IWAH, in turn, was positively correlated to likeliness of seeking help ($r = .24$, $p < .001$). Path analysis showed a mediating model, as can be seen in Fig. 2. Fear of COVID-19 was positively related to the likeliness of help-seeking ($\beta = 0.04$, $p < .001$) and negatively to IWAH ($\beta = -0.04$, $p < .001$). IWAH was positively related to the likeliness of help-seeking ($\beta = 0.24$, $p < .001$). Adjusted R square values were 0.001 for the direct effect of fear of COVID-19 on likeliness of help-seeking, and 0.058 when IWAH was added as a mediator in the model.

General discussion

Our research is the first to test the factorial structure and convergent validity of the IWAH scale in a Chinese population, and further explore the impact of IWAH on behaviours during the COVID-19 pandemic. Our studies showed that the Chinese version of the IWAH scale has good psychometric properties, and can be used in future research in China and Chinese speaking populations in other countries.

The Chinese version of the IWAH had no floor or ceiling effects and the two-factor structure, without Item 6 and item 5 loading on a Factor 1, showed the best model of fitness in the Chinese student population. The Cronbach’s alpha of

Fig. 2 The mediating effect of IWAH between fear and help seeking ($N = 9,046$). *** $p < .001$



both sub-scales showed good reliability. The Chinese version of the IWAH scale had two dimensions, with Factor 1- Bond with Humanity, and Factor 2- Human Kinship.

Notably, the two-factor loading is different from the testing of factorial loadings in Germany (Reese et al., 2015), the US (Reysen & Hackett, 2016) and France, Poland, Mexico, or Chile (Hamer et al., 2021). All of these previous studies confirmed the two-factor model without Item 5 (i.e., “How much do you identify with [that is, feel a part of, feel love toward, have concern for] all humans everywhere?”) as it loaded on both factors or loaded differently in different countries (see Hamer et al., 2021), whereas our Chinese study confirmed the two-factor model with Item 6 excluded (i.e., “How much would you say you care [felt upset, want to help] when bad things happen to people anywhere in the world?”) as loading on both factors. On one hand, this may be due to cultural connotations being different in China when compared to Western cultures (see e.g., Allik & Realo 2004). Therefore, care about others (in Item 6) may be due to collective versus individualistic interest in China (Church et al., 2013), whereas the ability to even begin to think about helping others may be due to the requirement by Maslow that humans need to self-actualize their full potential as an individual first (D’Souza & Gurin, 2016). Although, another study (Hamer et al., 2021) suggests that contrastingly IWAH is constructed similarly regardless of whether the culture is more individualistic (France and US) or more collectivistic (Chile, Mexico, and Poland). However, the current results showed significant positive correlations between Chinese collectivism and IWAH, which is similar to previous studies, for example a study which found high levels of correlation between collectivism and interpersonal trust in China, which is usually related to individualism and connected to higher social trust (Allik & Realo, 2004). Thus, the connotation of Item 6 in China may be not consistent with IWAH scores in individualistic cultures. On the other hand, results of a study by Sparkman and Hamer (2020) suggests there may be a stronger connection between IWAH and its correlates in the US’s more individualistic culture when compared to Poland’s more collectivistic culture (Sparkman & Hamer, 2020). This difference in the factorial structure of the IWAH scale in China may therefore be due to the larger female sample in Study 1 and 2. Although collectivism has not been found to have a significant relationship with sex, despite considering that the population of China is more male than female. Future studies should explore whether the moderate loading difference between Item 5 and Item 6 is due to collectivist Eastern cultures. We recommend that the IWAH scale should be further validated in other collectivist countries to confirm these results. Regardless of individualistic versus collectivist cultures, our three studies showed that the IWAH scale can be used in cross-country studies (Hamer et al., 2021) with a cultural adaptation. Our study provided a

Chinese adaptation which can be used worldwide on Chinese speaking samples.

In the current research, IWAH and moral judgement were found to be positively correlated, which was consistent with previous studies (Kahane et al., 2015; Law et al., 2022). In addition, in another study, lower rates of utilitarian judgement were associated with IWAH, though when primary psychopathy was controlled for there was no association and those who scored high on IWAH were less likely to engage in actual utilitarian judgement (Kahane et al., 2015). This suggests that primary psychopathy may be a mediating factor between IWAH and utilitarian judgement and should be tested in future research.

Our research showed that people identifying more with all humanity feel more connected to nature. It is in line with an abundance of studies that look at the IWAH scale in relation to environmental attitudes and connection to nature. It seems that the ability to self-actualize, as Maslow would call it, extends the understanding beyond humankind to nature as well (Hamer et al., 2019; Loy et al., 2022). Future studies are suggested to apply the Nature Connectedness Scale with the IWAH scale to further investigate these mechanisms within the Chinese cultural context.

In contrast, there is little research to explain the relationship between anxiety, depression or other mood disorders and IWAH, although IWAH is a form of belonging. There is an abundance of literature on belonging and anxiety and depression (Steger & Kashdan, 2009; Cockshaw, Shochet & Obst, 2013; Poindexter, Mitchell, Brown & Cukrowicz, 2022), but there are no analyses in this context of such a broad social identification as IWAH. Social belonging and social support are considered main lifesaving resources (Holt-Lunstad et al., 2010). Previous research showed that social identifications may provide psychological resources that support individual well-being (Cruwys et al., 2014). However, there are no studies examining if it is the case with such a broad identification as with all humanity. In Study 3, we found a negative correlation between IWAH and callousness, anxiety, and depression. This is similar to results of a different study where belonging was negatively correlated with anxiety and depression in a model explaining school belonging amongst emerging adults in China (Zhang et al., 2018). Other studies also suggest that if one can increase an individual’s belonging, particularly those who have survived a natural disaster, like the 2008 earthquake in China, they benefit from belonging to a community of survivors like them (Li et al., 2011). Further research is required to understand the relation between such a very broad social identification as IWAH and the relationship with anxiety, depression, and mood disorders. However, this study shows connections between IWAH and empathy, similar to previous research (Hamer et al., 2019; McFarland et al., 2019). Being callous (cold trait) has only been explored in

childhood in relation to belonging (Fang et al., 2020), also providing limited information to explain the findings of this study without further research. However, since IWAH is connected to openness, empathy, prosocial behaviors, and safe attachment style (Hamer et al., 2019; McFarland et al., 2019), its negative connection with callousness was expected.

Our study confirmed the findings of previous research that three identifications measured by IWAH are positively correlated (people in my community, fellow nation members, and all humans everywhere), with the identification ‘all humans everywhere’ tending to be lower than the other two identifications (McFarland et al., 2012, 2013). IWAH is also negatively associated with dehumanization and positively associated with willingness to include people of different ethnicity to a friends group (McFarland et al., 2019). In our study universalism-tolerance was also positively associated with IWAH, same as in a study showing it to be IWAH’s predictor (Hamer et al., 2019). IWAH is more than the simple opposite of ethnocentrism, which represent the genuine concern, caring, and love for all humanity as a part of one’s in group (McFarland & Brown, 2008). In addition, IWAH is beyond the absence of ethnocentrism and associates with the presence of merit qualities including general morality and empathy (McFarland et al., 2012). Researchers have suggested to consider targeted interventions to develop identification with all humanity in order to promote the cooperative behaviours and help-oriented concerns for others during humanitarian crises (Barragan et al., 2021).

Our study found that the relationship between fear and help seeking was mediated by IWAH. First, fear of COVID-19 was found to be positively related to likeliness of seeking help, but the correlation is low. This was consistent with previous findings that college students in China, with higher fear, were more likely to seek help, but this was dependent on if they had experience with help-seeking prior to the pandemic (Liang et al., 2020). Thus, there might be some other factors mediating the correlation between fear and likeliness of seeking help. Second, consistent with previous research (Albrecht et al., 2021), this study found that IWAH was related with COVID-19 as the pandemic is an issue for the entire global community. The results showed that as fear of COVID-19 increased the IWAH score was lower. A possible explanation may be that people who live in regions where pathogens are prevalent, show increased xenophobia to strangers or foreigners, which in turn increase with ingroup conformity (Murray et al., 2011; Schaller et al., 2015), which in turn decreases IWAH in face of the threat of the COVID-19 pandemic. However, previous studies did not find a reduction in the level of identification with all humanity during the pandemic (Eder et al., 2021; Hamer et al., 2021). Third, IWAH was positively correlated to help-seeking, meaning that individuals with higher IWAH

scores generally have higher willingness to seek help in face of suicide, and vice versa. Multiple studies have suggested that a failure to seek help is related to a longer period of mental health issues, more severe psychopathological symptoms, and more frequent relapses of mental disorders (Gulliver et al., 2010; Hingson et al., 2006; Hunt & Eisenberg, 2010; Ryan, 2003). Compared with the small effects of fear of COVID-19 on likeliness of seeking help, the effects of IWAH on the willingness of help-seeking dramatically increased, indicating the importance of IWAH in help-seeking during the COVID-19 pandemic. Therefore, the IWAH scale scores may be perhaps used to create targeted interventions to improve help-seeking, to protect against the fear of COVID-19.

Strengths of our studies included the large sample sizes, which ensured advanced psychometrics could be run and the reliability could be determined from the significance of such a sample. This study has also expanded our understanding of IWAH in several understudied areas, such as its connection to anxiety, depression, callousness, and fear of COVID-19.

However, there are several limitations to this study that need to be noted. First, due to the cross-sectional nature of the research, no causality can be established based on the results. Future experimental and longitudinal studies are needed to investigate the causality and consequences of IWAH in a context of well-being, anxiety, and depression. Second, the data was collected in Universities, and the participants were young and well educated and may not represent the traditional Chinese family. The current results also may not reflect other age groups or a less educated population. Third, the variables measured only covered some of the correlates with IWAH in China. Other correlates and consequences of IWAH should be further explored in future studies. Researchers have called for other measures to be studied in relation to IWAH, with the Sense of Responsibility for Collective Health Questionnaire suggesting there is likely a relationship with other variables that indicate a directed orientation in any models created from IWAH (Lachowicz-Tabaczek & Kozłowska, 2021), as it is likely that people who have higher levels of IWAH are more concerned for collective health (see e.g. Marchlewska et al., 2022).

Suggestions for future studies have been mentioned above. In particular, future studies should explore whether the moderate loading difference between Item 5 and Item 6 is due to collectivist Eastern cultures, or specific to a Chinese context. In this sense, IWAH should be validated in other collectivist countries. In addition, future research should test the mediating effect of primary psychopathy on the relation between IWAH and utilitarian judgement. Third, future studies should investigate the relation between the Nature Connectedness Scale and the IWAH scale within the Chinese cultural context as there is a positive relation between these scales. Fourth, further research is required to

understand the relation between a very broad social identification like IWAH with mental health outcomes like anxiety, depression, and mood disorders, as well as the clinical implications of such a relation. Finally, future research could be suggested in China with other age groups or a less educated population, as well as on other correlates with IWAH. In conclusion, the Chinese version of the IWAH scale showed good reliability, convergent validity, and confirmed 2-factor structure of IWAH, although with some differences regarding item 5 and 6. The Chinese adaptation of the IWAH scale showed positive relations with moral judgement, collectivism, nature connectedness, and negative relations with callousness, anxiety and depressive symptoms. It also proved to mediate the relation between fear of COVID-19 and help-seeking behaviours. The IWAH scale scores may be used to create targeted interventions to improve belongingness, in order to protect against the fear of COVID-19. In addition, developing higher identification with all humanity may be considered in order to promote cooperative behaviours and help-oriented concerns for others during humanitarian crises, as also suggested by Barragan et al. (2021). The IWAH Chinese version can be used in future research on Chinese populations in China or who speak Chinese around the world.

Data availability Data is available on reasonable request from the corresponding authors.

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