

Original Research

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Walsh Family Resilience Questionnaire Short Version (WFRQ-9): Development and Initial Validation for Disaster Scenarios

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Abstract

Objective: The study aimed to develop and validate a short scale of family resilience for disaster scenarios. The Walsh Family Resilience Questionnaire (WFRQ-32) was adopted as the foundation for short version development.

Methods: The reliability and validity were evaluated using a sample of 1015 participants collected from a population-based cross-sectional study in Hong Kong. A confirmatory factor analysis was employed to scrutinize the factor structure of the short scale. Multivariate regression modeling was adopted to investigate the key determinants that enable families to overcome adversities and disasters.

Results: The Walsh Family Resilience Questionnaire Short Version (WFRQ-9) with 9 items demonstrated satisfactory measurement properties, including good explanatory power, construct validity, and high internal reliability. The WFRQ-9 presented a robust factor structure, with a 2-layer 3-factor model yielding the best fit. Proactive disaster preparedness and emergency response behaviors, and ample living space increased WFRQ-9 score. Lower education level, residence in government-subsidized housing, and having disabled family members decreased WFRQ-9 score.

Conclusions: The validated WFRQ-9 can be used to measure family resilience in interventions aimed at improving disaster resilience. Moreover, it emphasizes the significance of fostering family resilience for improved adaptation in the face of escalating disaster risks to families and communities worldwide.

Climate change is increasing the risk of families being exposed to disasters more frequently.^{1–4} It is directly associated with a rise in the frequency and severity of extreme weather events,^{5,6} such as hurricanes, floods, and wildfires. These events present a significant threat to the safety and welfare of families, often resulting in displacement, physical harm,^{7,8} mental health problems,^{3,9–11} and socioeconomic disruption.¹² These disastrous events can derail the functioning of a family system, with ripple effects on all members and their relationships.¹³

Families possess the inherent ability to self-repair in the face of adversities, disruptive experiences, or catastrophic events.¹⁴ Families' capacity to endure or recover from the adversities that threaten their stability or development is described as family resilience.^{15–18} Often acting as a "family shock absorber," family resilience mitigates the impact of adversities encountered throughout the life cycle, including disasters.¹⁹ It is not an individual attribute but a collective product of a cooperative process where families function as a cohesive system.²⁰ The system of family resilience is activated when the family is impacted by highly stressful events and social contexts, and in turn facilitates the positive adaptation of all members and strengthens the family unit.¹⁷ Consequently, the exploration of family resilience is of significant value in disaster response and recovery.

Families often encounter socioeconomic disruption in disasters, typically enduring long-term economic impacts.¹² Factors such as family income and housing conditions, integral to a family's socioeconomic status, can significantly influence their level of resilience. Moreover, a sizable proportion of individuals following a disaster develop mental health problems, leading to a prolonged burden on the health care system.²¹ Those exposed to disasters may exhibit symptoms of post-traumatic stress disorder, grief, depression, anxiety, stress-related health problems, increased substance abuse, and suicidal ideation.²² Resilience is often highlighted as a protective factor that encourages positive outcomes and aids individual recovery from disasters.^{5,23}

Family resilience plays a crucial role in helping individuals recover from adverse circumstances, such as disasters, particularly for children and adolescents.²⁴ Youths who perceive their families as resilient tend to exhibit greater individual resilience and experience less anxiety in

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disaster situations.²⁰ The extent to which families communicate about their stress and support attempts can influence both adults' and children's post-disaster mental health.²⁵ Factors such as parental depression and hostility significantly affect children's adjustment experiences during disasters.²⁶ Parents' resilience can act as a protective shield for adolescents continuously exposed to trauma and stress.²⁰ For families with special health needs, such as those with children, the caregivers' response to disasters and adversities plays a pivotal role in the family's overall resilience.²⁷

In addition, effective disaster preparedness can mitigate the impacts of future disasters on human lives, health, and property.⁵ Current disaster preparedness guidelines in many countries, such as the United States,²⁸ emphasize household-level preparedness, which includes maintaining at least a 3-day supply of food and water. Maintaining strong relationships with family members and relatives is a crucial form of social capital that has a positive impact on disaster preparedness.²⁹ Therefore, family resilience plays a critical role in the entire disaster risk management cycle, which specifically includes the stages of disaster mitigation, preparedness, response, and recovery.^{30–32}

Most existing quantitative measures of family resilience are rooted in Walsh's family resilience framework.^{14,33} According to Walsh,¹⁴ family resilience is a process through which families confront and manage disruptive experiences such as disasters, buffer stress, effectively reorganize, and progress in life. This influences both immediate and long-term adaptation for all family members and the family unit as a whole. The core process of family resilience can be encapsulated in 3 dimensions:³³ (i) the family belief system encourages family members to view adversity as an opportunity for growth and instills a proactive attitude; (ii) the organizational system, referring to family structure, mutual support, and connectedness, provides security and fosters collaboration within the family and their social networks in times of need; (iii) communication emphasizes openness, tolerance, and encouragement when family members express their emotions and opinions, fostering a proactive and collaborative spirit of problem-solving.

Walsh¹⁵ also developed a scale with 32 items to measure family resilience (Walsh Family Resilience Questionnaire, WFRQ-32), which has been widely adopted in different countries.^{34,35,36} Chow et al.³⁷ further developed a short form of the family resilience questionnaire based on WFRQ-32, consisting of 16 items (WFRQ-16). Nevertheless, there is still a need for a shorter scale of family resilience, particularly in the context of disasters because responders often have limited time and resources to conduct detailed assessments in the aftermath of a disaster. Short scales are essential in disaster risk management for both practice and research due to their efficiency and effectiveness in assessing various factors. In disaster preparedness, short scales can offer valuable insights into disaster preparedness among the general population, highlighting important factors that contribute to readiness.³⁸ After disasters, mental health consequences are a significant concern, and short scales play a vital role in evaluating the burden, correlates, and treatment of mental disorders following such events in an efficient way.³⁹ Furthermore, in the field of emergency logistics during large-scale disasters, using short scales can aid in understanding critical needs and challenges, providing valuable insights for effective disaster management for large populations affected by the disasters.⁴⁰

Given the growing empirical interest in family resilience within disaster research, there is a demand for a short scale that can be quickly administered while also reliably measuring a family's

ability to endure and recover from significant life challenges, such as disasters. This study aimed to develop a family resilience short scale tailored to disaster scenarios. The factorial structure, reliability, and correlations with theoretically related constructs were scrutinized. Additionally, the study explored the determinants of family resilience, including individual socioeconomic factors, family economic and housing conditions, and family health care needs.

Methods

Design and Procedure

The study adopted a multiple-step approach to develop and validate the family resilience short scale for disaster risk management. Hong Kong was selected as the site for data collection and short scale validation because it is one of the most densely populated areas in the world and this creates unique challenges in disaster risk management and resilience.⁵ Hong Kong is frequently exposed to various natural disasters, especially typhoons.⁴¹ This provides a constant stream of data for researchers to study how families react and recover from these situations. Despite being regularly subjected to natural disasters, Hong Kong has a robust infrastructure and disaster management system.⁶ Studying how these systems contribute to family resilience can provide valuable insights.

Step 1: Develop Walsh Family Resilience Questionnaire Short Version

The research conducted a substantial study of family resilience and adopted the theoretical framework and measurement proposed by Wash.^{14,19,33} The Walsh Family Resilience Questionnaire (WFRQ-32), comprising 32 questions,¹⁹ was adopted as the foundation for the short scale development. This scale was chosen due to its comprehensive structure for measuring family resilience, which has been widely used in both clinical and non-clinical settings. A draft of the Walsh Family Resilience Questionnaire Short Version was then created. Comprised of 5 experts from diverse professional backgrounds, including engineering, geography, psychology, political science, public management, and social work, an expert committee was established to review and discuss the draft Walsh Family Resilience Questionnaire Short Questionnaire with 9 items.

Step 2: Back-and-forth translation

Given that the local spoken language in Hong Kong is Cantonese, 2 initial translations were independently carried out by 2 translators, 1 with a background in disaster research and the other without. The translator without a disaster research background helped identify potential difficulties in understanding the questionnaire. Special attention was paid to the meaning of the words in different languages to ensure similar effects on respondents from various cultures. The backward translation was performed by 2 independent translators, 1 with a disaster research background and the other without. Two online meetings were organized by the translators to discuss discrepancies and finalize the Chinese version of the Walsh Family Resilience Questionnaire Short Version. The Cantonese version was slightly adjusted from the Chinese version by a professional data collection center specifically for the telephone survey adapting the local population and their spoken language.

Step 3: Preliminary pilot testing

A pilot study was carried out with 10 male and 10 female participants across various age groups. This pilot enabled the research team to verify that the translated items maintained their original meaning and that there were no misunderstandings regarding the translated questions.

Step 4: Data collection

A short-term, cross-sectional, population-based telephone interview was conducted to collect a large sample of responses for the short scale validation. This interview utilized a Computer-Assisted Telephone Interviewing (CATI) program to collect data using a structured questionnaire about family resilience among the adult population.

Step 5: Reliability and validity testing

The Walsh Family Resilience Questionnaire Short Version was validated via reliability, validity testing, and confirmation factor analysis (see section of data analysis for details). The Family Resilience Short Scale was subsequently validated, and its determinants were subsequently examined.

Ethical approval of the study was obtained from the affiliated university.

Participants and Data

Stratified random sampling was adopted in the study. Gender, age, and geographical distribution were controlled to have comparable percentages with the most recent Census data. The inclusion criteria included: (i) at least 18 years of age; (ii) a citizen of Hong Kong; (iii) be willing to participate in a telephone survey. The following subpopulations were excluded from the study: (i) non-Cantonese-speaking respondents, (ii) overseas visitors holding tourist visas to Hong Kong, (iii) 2-way permit holders from mainland China, (iv) the individuals who were unable to be interviewed for medical reasons, and (v) those who did not have a landline telephone on their property.

Random Digital Dialing (RDD) was applied to select the landline numbers and a last-birth approach was used to pre-select adults as interviews within a household. To ensure comprehensive sample coverage, calls were primarily initiated during weekday evenings (6:30-10:30 pm) and from afternoon to evening on weekends (2:00-10:30 pm). This timing was chosen to accommodate the schedules of employed respondents and students, among others. If a telephone number went unanswered, up to 5 attempts were made before it was confirmed as such.

In total, 4300 local phone numbers were dialed, yielding 2008 eligible respondents. The remaining 2292 numbers were unsuccessful contracts, comprising 593 invalid numbers, 1518 unanswered calls, and 171 ineligible numbers. Of the 2008 eligible respondents, 1015 provided valid samples, 872 declined participation, and 161 samples were incomplete. Consequently, the response rate for the study was 50.5% (1015 of 2008).

Measurements

Walsh Family Resilience Questionnaire Short Version (WFRQ-9)

Following Walsh's family resilience framework,^{14,33} a 5-point Likert scale with "1" representing "rarely/never" and "5" representing

"almost always," was adopted to indicate respondents' family's experience with adversities by using the proposed Walsh Family Resilience Questionnaire Short Version (WFRQ-9) with 9 statements. The total WFRQ-9 score was the sum of the 9 items, with a possible range of 9-45 (Appendix I). The scores for the 3 WFRQ-9 subdomains (belief systems, organizational process, and communication process) were calculated by adding their 3 respective items, resulting in a range from 3-15.

Sociodemographic factors

Gender (male or female), age (year 18-29, 30-59, or 60 or above), education (primary or below, secondary, or postsecondary level), and marital status (unmarried or married) were 4 individual sociodemographic factors in this study. Single, divorced, and widowed individuals were grouped under the broader category of unmarried.

Disaster risk management relevant factors

The disaster risk management relevant factors in this study included disaster experience, knowledge, preparedness, and emergency response. Given that typhoon is the most frequent hazard in Hong Kong,⁵ it was chosen as the specific disaster scenario for emergency response in this study.

Disaster experiences in this study were evaluated across 2 dimensions: i) experiences with natural hazards (no or yes) and ii) experiences with man-made hazards (no or yes). Specifically, experiences with natural hazards were categorized as a binary measure indicating whether a person has experienced at least 1 of the listed natural hazards: earthquakes, typhoons, severe air pollution, extreme temperatures, and landslides. Man-made hazard experiences encompassed incidents like fire accidents, large-scale power outages, riots, and terrorist attacks.

Disaster knowledge was measured by using 2 questions relevant to typhoons: i) "which of these risk factors can be caused by a typhoon: gale, huge waves, heavy rain, storm surge?" and ii) "can you list the tropical cyclone warning signals used in Hong Kong?" For the first question, each risk factor was coded as a binary variable. A score of "1" indicated that the respondent recognized the event as a potential consequence of a typhoon, while a score of "0" indicated that the respondent did not perceive the event as a potential outcome. For the second question, a score of "1" was given to a respondent who could accurately list all the tropical cyclone warning signals in Hong Kong, while a score of "0" was given for an incomplete or incorrect response for at least 1 warning signal. The disaster knowledge score was calculated by adding the total scores from Q1 and Q2, resulting in a range from 0-5. A higher cumulative score indicated a higher level of disaster knowledge.⁵

Disaster preparedness was adapted from the US Federal Emergency Management Agency's (FEMA) measurement appraisal of disaster preparedness.^{28,42} It included 6 items: i) drinking water for 3 days, ii) food for 3 days, iii) a first aid kit, iv) a flashlight, v) an information receiving device, and vi) an evacuation plan. The sum-scores of disaster preparedness ranged from 0-6, with a higher sum-score indicating a higher level of disaster preparedness.^{43,44}

Typhoon emergency response was measured by 6 items: i) checking up-to-date typhoon announcements, ii) checking doors and windows, iii) being aware of notifications from one's employers, iv) contacting family to discuss their situation regarding safety, v) securing outdoor furniture, and vi) attempting to buy more food before the major strike of the storm. This measure was adopted from the 2013 Taiwan Social Change Survey^{45,46} and the sum of all sub-items (ranging from 0-6) was used to measure the level of

typhoon emergency response in the statistical analysis. A higher sum indicated a higher level of emergency response.^{43,44}

Family economic and housing conditions

Five variables were used to measure family economic and housing conditions: i) the family income in Hong Kong dollars per month (grouped as < HK\$20000, HK\$20000-39999, \geq HK\$40000), ii) types of subsidized housing (government subsidized or private housing), iii) poverty ownership (rental or self-occupied), iv) size of housing area (grouped as < 400 ft², 400-699 ft², \geq 700 ft²), and v) size of household (1 person, 2 persons, 3 persons, 4 persons, or 5 persons or above). Usually, a higher income and residing in privately owned and larger housing areas indicates higher family economic status and better housing conditions.

Family health care needs

Family health care needs were evaluated by using the presence of 4 types of special health care needs in the family: i) child(ren), ii) mid-old(s), iii) member(s) with chronic disease(s), and iv) member(s) with disabilities. Specifically, “child(ren) in family” was used as a binary measure representing whether there was at least 1 family member aged under 18 years in the household (no or yes). “Mid-old(s) in family” was a binary measure indicating whether there was at least 1 family member older than 75 years old (no or yes). “Member(s) with chronic disease(s)” was a binary measure indicating whether there was at least 1 person (including the respondent) with chronic disease(s) in the household (no or yes). “Member(s) with disabilities” was a binary measure indicating whether there was at least 1 person (including the respondent) with disabilities in the household (no or yes).

Data analysis

First, a descriptive analysis was conducted by using SPSS 29.0 to understand the samples and items of WFRQ-9. Cronbach's alpha (α) was projected to measure the reliability of each subdomain of WFRQ-9. Also, Average Variance Extracted (AVE) was calculated for each subdomain to assess the validity. Cronbach's α above 0.70^{47,48} and AVE over 0.5⁴⁹ suggested good validity.

Moreover, Confirmation Factor Analysis (CFA) was adopted to test the reliability of the construct of WFRQ-9, utilizing MPLUS 7.0, which was theory-driven. Factor loading and its standard error were estimated for each manifest variable and each subdomain in the CFA. Three CFA models were established to test the construct of WFRQ-9 based on the theory^{15,19} and previous multiple trails.^{34,50} Model 1 was a 1-layer, 1-factor model where the latent factor of WFRQ-9 was constructed by the 9 resilient items. Model 2 was a correlated 3-factor model where belief systems, organizational processes, and communication processes were the 3 latent factors. The correlation among the 3 latent factors was tested in Model 2. Model 3 was a 2-layer model in which WFRQ-9 was constructed by the 3 latent factors in Model 2. The ML estimator was adopted in the CFA.

In the CFA, the Comparative Fit Index (CFI), Root Mean Square Error of Approximation (RMSEA), and Tucker-Lewis Index (TLI) were used to assess the model fit. Cutoff values of 0.95 for CFI and TLI (the higher the better) and 0.06 for RMSEA (the lower the better)^{51,52} were adopted to examine the goodness-of-fit value in this study. To determine the optimal fitting model, we relied on changes in the values of CFI(Δ CFI), TLI (Δ TLI), and RMSEA (Δ RMSEA), where a Δ CFI \geq 0.01, Δ TLI \geq 0.01 and Δ RMSEA \geq 0.015 was considered evidence of a meaningful difference in the fit of the respective models.⁵³

Finally, multivariate regression models were established to examine the impact of the individual sociodemographic, disaster risk management relevant factors, family economic and housing conditions, and family health care needs on the general public's WFRQ-9 score. All analyses in the first and third steps were conducted using SPSS software, version 29.0, with the threshold for statistical significance at $\alpha = 0.05$ 2-tailed. The coefficient (β), their associated 2-tailed P values, and a 95% CI were reported for each independent variable in the regression models. The ANOVA test, P value, and R^2 value were reported to present the performance of each model.

Results

Descriptive Analysis

In the data collection, slightly more females were sampled than males (55.3% VS 44.7%). More than 2/3 of the participants were under 60 years of age (Table 1). More than half obtained a senior secondary or below education degree (54.8%). More than half had been married (55.7%).

An overwhelming majority of participants reported experiences with natural hazards (95.8%). Additionally, 62.6% of them had encountered man-made hazards. The average scores for participants' knowledge of disasters, disaster preparedness, and typhoon emergency response were 4.02 ($SD = 1.02$), 3.46 ($SD = 1.35$), and 4.80 ($SD = 1.03$), respectively.

More than 60% of the participants reported a monthly family income of less than HKD 40 000 (61.9%). Over half resided in government-subsidized housing (50.6%), while approximately 37.1% lived in rental housing. Over 20% lived in homes smaller than 400 ft² (22.9%), with the average housing size being 575 ft² ($SD = 347$).

About 1/4 of the participants had children (25.0%) and 1/5 had middle-aged or senior adults in their families (20.3%). Furthermore, around 1/4 reported having family members with chronic diseases (25.7%). Less than 10% of participants had family members with disabilities (7.9%).

Validation of Walsh Family Resilience Questionnaire Short Version (WFRQ-9)

Following Walsh's family resilience framework,^{14,33} WFRQ-9 was constructed by a) belief systems (3 items, AVE = 0.609, $\alpha = 0.810$), b) organizational processes (3 items, AVE = 0.623, $\alpha = 0.784$), and c) communication processes (3 items, AVE = 0.655, $\alpha = 0.844$) (Table 2). Specifically, belief systems were measured by Q1) making meaning of adversity, Q2) positive outlook, and Q3) transcendence and spirituality. Organization processes were measured by Q4) flexibility, Q5) connectedness, and Q6) mobilize social and economic resources. Communication processes were measured by Q7) clarity, Q8) open emotional expression, and Q9) collaborative problem solving. Detailed questions corresponding to each subdomain can be found in Table 2. The item of making meaning of adversity received the lowest rating (Q1 making meaning of adversity, $M = 3.26$, $SD = 0.89$), followed by the item of transcendence and spirituality (Q3 transcendence and spirituality, $M = 3.38$, $SD = 0.97$).

The CFA results, including model fit statistics, were detailed in Table 3. The Chi-square statistics were significant in all 3 models. However, Model 2 was rejected because of its poor model fits ($\chi^2(14) = 396.829$, $P < 0.001$, CFI = 0.27, TLI = 0.813, RMSEA = 0.166). Both Models 1 and 3 indicated acceptable fits based on the

Table 1. Descriptive analysis of the sample and mean of WFRQ-9 score (*N* = 1015)

| Domain | Category | Measures | N(%) | Belief system | Organizational process | Communication process | WFRQ-9 score |
|---|--------------------------------|-------------------------|------------|---------------|------------------------|-----------------------|--------------|
| Individual sociodemographic | Gender | Male | 454(44.7%) | 10.09(2.30) | 10.70(2.34) | 10.34(2.43) | 31.11(6.43) |
| | | Female | 561(55.3%) | 10.36(2.30) | 10.89(2.30) | 10.51(2.30) | 31.76(6.32) |
| | Age | Age 18–29 | 181(17.8%) | 10.13(1.99) | 11.03(1.95) | 10.61(2.09) | 31.77(5.36) |
| | | Age 30–59 | 560(55.2%) | 10.25(2.23) | 10.78(2.26) | 10.43(2.27) | 31.45(6.22) |
| | | Age 60 or above | 274(27.0%) | 10.27(2.63) | 10.72(2.65) | 10.30(2.70) | 31.29(7.31) |
| | Education | Primary or below | 95(9.4%) | 10.04(2.95) | 10.40(3.10) | 9.70(3.05) | 30.13(8.35) |
| | | Secondary | 458(45.4%) | 10.14(2.37) | 10.72(2.33) | 10.36(2.32) | 31.22(6.50) |
| | | Postsecondary | 455(45.1%) | 10.37(2.05) | 11.00(2.09) | 10.65(2.19) | 32.01(5.68) |
| | Marital status | Unmarried | 447(44.3%) | 10.04(2.31) | 10.69(2.34) | 10.27(2.39) | 31.00(6.38) |
| | | Married | 561(55.7%) | 10.41(2.28) | 10.91(2.30) | 10.57(2.32) | 31.88(6.34) |
| Disaster risk management relevant factors | Natural hazards | No experience | 43(4.2%) | 10.86(2.56) | 11.40(2.49) | 11.09(2.46) | 33.35(6.72) |
| | | Yes | 972(95.8%) | 10.21(2.29) | 10.78(2.31) | 10.40(2.35) | 31.38(6.35) |
| | Man-made hazards | No experience | 380(37.4%) | 10.19(2.36) | 10.84(2.34) | 10.42(2.35) | 31.45(6.51) |
| | | Yes | 635(62.6%) | 10.27(2.27) | 10.78(2.31) | 10.44(2.37) | 31.48(6.30) |
| | Disaster knowledge | ≤3 score | 253(25.8%) | 10.18(2.44) | 10.74(2.45) | 10.14(2.50) | 31.05(6.81) |
| | | >3 score | 729(74.2%) | 10.22(2.23) | 10.79(2.26) | 10.51(2.29) | 31.53(6.16) |
| | Disaster preparedness | ≤3 score | 488(48.1%) | 9.87(2.46) | 10.39(2.48) | 9.99(2.49) | 30.21(6.77) |
| | | >3 score | 527(51.9%) | 10.57(2.10) | 11.49(2.10) | 10.83(2.16) | 32.62(5.76) |
| | Typhoon emergency response | ≤3 score | 106(10.4%) | 9.62(2.42) | 9.96(2.66) | 9.84(2.75) | 29.37(7.14) |
| | | >3 score | 909(89.6%) | 10.31(2.28) | 10.90(2.26) | 10.50(2.30) | 31.71(6.24) |
| Family economic and housing conditions | Family income | < HK\$20000 | 253(26.9%) | 10.12(2.71) | 10.67(2.71) | 10.22(2.73) | 30.98(7.55) |
| | | HK\$20000–39999 | 329(35.0%) | 10.05(2.12) | 10.68(2.18) | 10.33(2.22) | 31.08(5.92) |
| | | ≥ HK\$40000 | 358(38.1%) | 10.42(2.08) | 11.00(2.07) | 10.60(2.16) | 32.01(5.67) |
| | Subsidized housing | Gov. subsidized | 507(50.6%) | 9.89(2.39) | 10.57(2.45) | 10.11(2.47) | 30.59(6.69) |
| | | Private housing | 495(49.4%) | 10.59(2.12) | 11.04(2.13) | 10.75(2.18) | 32.35(5.83) |
| | Poverty ownership | Rental | 366(37.1%) | 10.42(2.24) | 10.96(2.24) | 10.58(2.31) | 31.96(6.15) |
| | | Self-occupied | 621(62.9%) | 9.97(2.37) | 10.53(2.44) | 10.17(2.44) | 30.64(6.67) |
| | Housing size | < 400 ft ² | 215(22.9%) | 9.89(2.46) | 10.23(2.51) | 9.90(2.50) | 30.07(6.80) |
| | | 400–699 ft ² | 458(48.8%) | 10.25(2.23) | 10.88(2.26) | 10.49(2.36) | 31.62(6.27) |
| | | ≥ 700 ft ² | 265(28.3%) | 10.50(2.17) | 11.06(2.19) | 10.68(2.18) | 32.24(5.94) |
| | Household size | 1 person | 72(7.2%) | 9.79(3.23) | 10.13(2.96) | 10.13(2.93) | 30.18(8.65) |
| | | 2 persons | 187(18.6%) | 10.43(2.29) | 10.82(2.51) | 10.54(2.50) | 31.75(6.63) |
| | | 3 persons | 276(27.5%) | 10.07(2.23) | 10.60(2.17) | 10.25(2.19) | 30.90(5.96) |
| | | 4 persons | 313(31.2%) | 10.25(2.13) | 10.98(2.19) | 10.46(2.24) | 31.69(6.00) |
| | | 5 persons or above | 156(15.5%) | 10.45(2.23) | 11.08(2.23) | 10.67(2.42) | 32.22(6.24) |
| Family healthcare needs | Child(ren) in family | No | 759(75.0%) | 10.12(2.34) | 10.68(2.37) | 10.35(2.40) | 31.14(6.49) |
| | | Yes | 253(25.0%) | 10.57(2.17) | 11.19(2.13) | 10.68(2.23) | 32.42(5.98) |
| | Mid-old(s) in family | No | 806 (79.7) | 10.24(2.23) | 10.83(2.28) | 10.47(2.32) | 31.54(6.24) |
| | | Yes | 205(20.3%) | 10.21(2.58) | 10.72(2.49) | 10.26(2.54) | 31.20(6.94) |
| | Member(s) with chronic disease | No | 752(74.3%) | 10.30(2.19) | 10.88(2.22) | 10.55(2.25) | 31.72(6.04) |
| | | Yes | 260(25.7%) | 10.06(2.62) | 10.59(2.59) | 10.07(2.62) | 30.74(7.25) |
| | Members(s) with disabilities | No | 932(92.1%) | 10.30(2.28) | 10.85(2.27) | 10.47(2.32) | 31.62(6.25) |
| | | Yes | 80(7.9%) | 9.51(2.46) | 10.35(2.82) | 9.95(2.81) | 29.73(7.64) |

Table 2. Items of Walsh Family Resilience Questionnaire Short Version (WFRQ-9) ($N = 1015$)

| | Mean | SD | AVE | Cronbach's α |
|---|------|------|--------------|---------------------|
| Belief systems | 3.41 | 0.76 | 0.609 | 0.810 |
| Q1 We try to make sense of stressful situations and focus on our options. (Making meaning of adversity) | 3.26 | 0.89 | – | – |
| Q2 We keep hopeful and confident that we will overcome difficulties. (Positive outlook) | 3.60 | 0.84 | – | – |
| Q3 We draw on spiritual resources (religious or nonreligious) to help us cope well. (Transcendence and spirituality) | 3.38 | 0.97 | – | – |
| Organizational processes | 3.60 | 0.77 | 0.623 | 0.784 |
| Q4 We are flexible in adapting to new challenges. (Flexibility) | 3.42 | 0.88 | – | – |
| Q5 We can count on family members to help each other in difficulty. (Connectedness) | 3.93 | 0.93 | – | – |
| Q6 We can rely on the support of friends and our community. (Mobilize social and economic resource) | 3.45 | 0.98 | – | – |
| Communication processes | 3.48 | 0.79 | 0.655 | 0.844 |
| Q7 We try to clarify information about our stressful situation and our options. (Clarity) | 3.47 | 0.87 | – | – |
| Q8 We can share difficult negative feelings (e.g., sadness, anger, fears). (Open emotional expression) | 3.48 | 0.92 | – | – |
| Q9 We collaborate in discussing and making decisions, and we handle disagreements fairly. (Collaborative problem solving) | 3.47 | 0.92 | – | – |

Table 3. Model fits of CFA of Walsh Family Resilience Questionnaire Short Version (WFRQ-9)

| Model | χ^2 | df | P | CFI | TLI | RMSEA (90% CI) |
|---------|----------|----|---------|-------|-------|---------------------|
| Model 1 | 52.113 | 15 | < 0.001 | 0.993 | 0.983 | 0.050(0.036–0.065) |
| Model 2 | 396.829 | 14 | < 0.001 | 0.927 | 0.813 | 0.166(0.152–0.180) |
| Model 3 | 38.021 | 14 | < 0.001 | 0.995 | 0.988 | 0.042 (0.026–0.058) |

Note: $N = 1015$; Estimator = WL; χ^2 = Chi-square goodness-of-fit statistic; df = degrees of freedom; CFI = comparative fit index; TLI = Tucker Lewis index; RMSEA (90% CI) = root-mean-square error of approximation with 90% confidence intervals.

results of CFI, TLI, RESEA, and SRMR. Model 3, the 2-layers, 3-factor CFA model, demonstrated the highest CFI and TLI values and lowest RMSEA and SRMR value ($\chi^2(14) = 38.021$, $P < 0.001$, CFI = 0.995, TLI = 0.988, RMSEA = 0.042). However, both the Δ CFI and Δ TLI between Model 1 and Model 3 were smaller than 0.01 and Δ RMSEA was smaller than 0.015. As such, the difference of model fit between Model 1 and Model 3 was not significant. Therefore,

both models were considered well-fitted for examining the factor construct of WFRQ-9.

All the factor loading presented in Model 1 and Model 3 was significant ($P < 0.001$). The factor loading in Model 1 ranged from 0.674 (SE = 0.021, Q6 loaded on WFRQ-9)-0.836 (SE = 0.013, Q4 loaded on WFRQ-9). The factor loading in Model 3 ranged from 0.714 (SE = 0.021, Q3 loaded on belief system and Q6 loaded on organizational process)-0.889 (SE = 0.012, Q4 loaded on organizational process, Figure 1).

Note: $N = 1015$; STDYX standardized MPLUS parameter was estimated for each path; Standard Error (SE) was reported in the parentheses; ***, $P < 0.001$; the parameters of latent variable of organizational process and communication process were fixed to 0.05 in Model 2 and 3; all 3 models include the residual covariances via Q1 with Q2, Q1 with Q7, Q2 with Q3, Q4 with Q5, Q4 with Q6, Q4 with Q8, Q5 with Q6, Q5 with Q8, Q5 with Q9, Q6 with Q7, Q7 with Q8, and Q8 with Q9.

Impacts of Sociodemographic, Disaster Risk Management, Family Economic and Housing Conditions, and Family Health Care Needs on Family Resilience

According to the sample with 1015 participants, the mean of WFRQ-9 was 31.47 with an SD of 6.38. The mean scores for belief system, organizational process, and communication process were 10.24(SD = 2.30), 10.81(SD = 2.32), and 10.43(SD = 2.36) respectively. Table 1 presents the means of these scores for different groups based on various sociodemographic factors, disaster risk management, family economic and housing conditions, and family health care needs.

Specifically, participants with a primary education level or below reported the lowest WFRQ-9 score (mean = 30.13, SD = 8.35, Table 1). Receiving a primary education or lower had a significantly negative impact on both the WFRQ-9 scores ($\beta = -0.087$, 95% CI: [-3.663, -0.111]) and the subdomain of communication process ($\beta = -0.101$, 95% CI: [-1.495, -0.148]).

Increased disaster preparedness within a family significantly enhanced WFRQ-9 score ($\beta = 0.191$, 95% CI: [0.564, 1.201]) and its 3 domains: belief system ($\beta = 0.174$, 95% CI: [0.176, 0.405]), organizational process ($\beta = 0.184$, 95% CI: [0.196, 0.429]), and communication process ($\beta = 0.149$, 95% CI: [0.137, 0.379]).

Implementing an additional proactive response to typhoon emergency caused an increase of WFRQ-9 score by 0.555 SD ($\beta = 0.088$, 95% CI: [0.131, 0.983]), organizational process by 0.100 SD ($\beta = 0.100$, 95% CI: [0.075, 0.388]), communication process by 0.072 SD ($\beta = 0.171$, 95% CI: [0.009, 0.332]). This was true while keeping individual sociodemographic, family economic and housing conditions, and family health care needs constant.

Residing in government-subsidized housing led to a decrease in the belief system subdomain by 0.081 SD ($\beta = -0.112$, 95% CI: [-0.852, -0.143]) and the communication process by 0.091 SD ($\beta = -0.091$, 95% CI: [-0.794, -0.046]), while maintaining constant factors such as individual sociodemographic, disaster risk management relevant factors, and family health care needs.

Increasing 1 unit of logarithm base 10 of housing size yielded an increase of WFRQ-9 score by 0.089SD ($\beta = 2.888$, 95% CI: [0.194, 5.519]) and an increase of organizational process by 0.110 SD ($\beta = 0.110$, 95% CI: [0.323, 2.279]), while holding the factors of individual sociodemographic, disaster risk management, and family health care needs constant.

Children in the family significantly and positively influenced the subdomain of belief system. Having kid(s) in the family resulted in

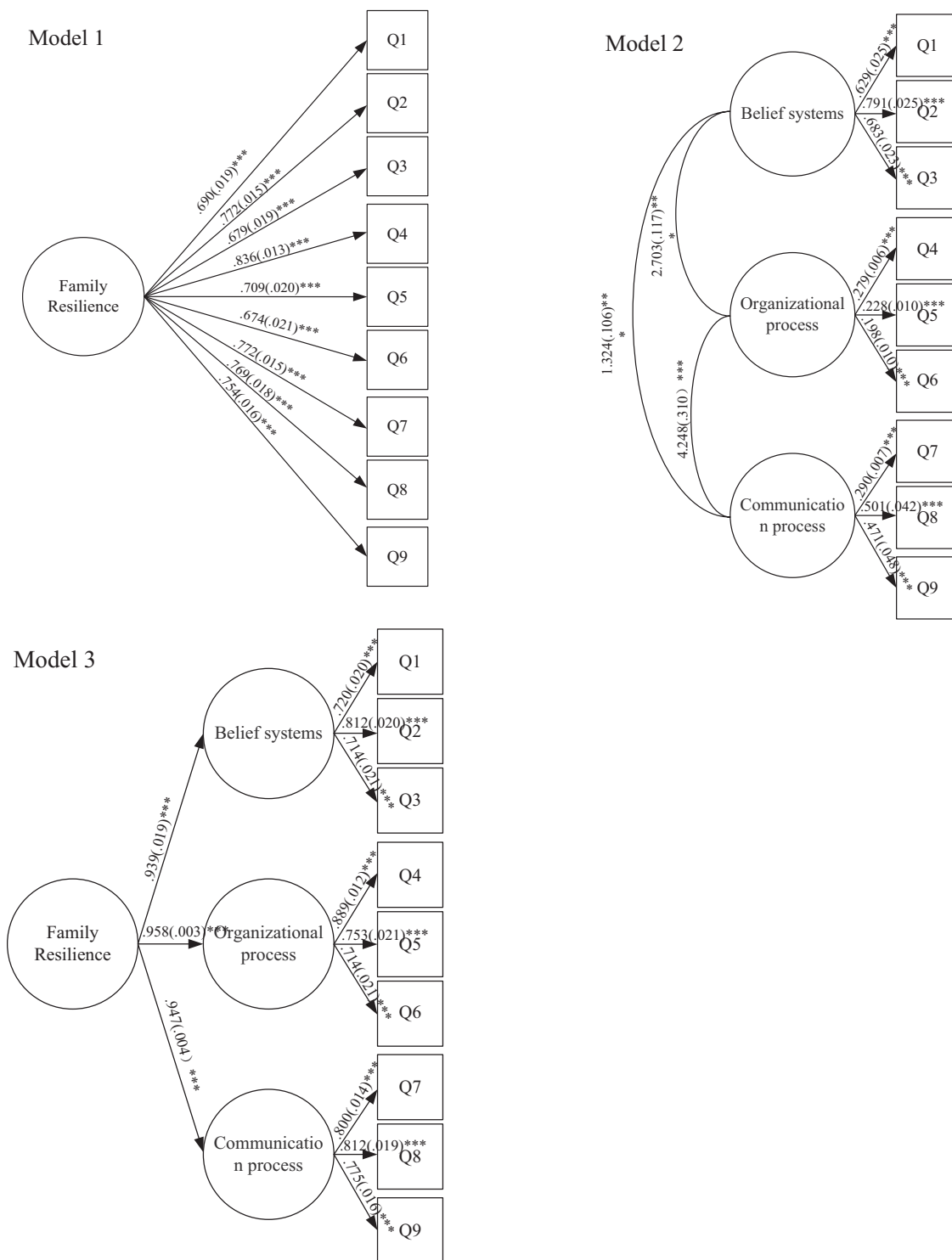


Figure 1. Factor models of Walsh Family Resilience Questionnaire Short Version (WFRQ-9) tested using confirmatory factor analysis.

an increase of belief system by 0.088 SD ($\beta = 0.088$, 95% CI: [0.054, 0.849]), while holding the factors of individual sociodemographic, disaster risk management, family economic and housing conditions, and other family health care needs constant. However, having person(s) with a disability caused a decrease of WFRQ-9 score by 0.073 SD ($\beta = -0.073$, 95% CI: [-3.291, -0.037]) and belief system by 0.103 SD ($\beta = -0.103$, 95% CI: [-1.430, -0.265]), while holding the

factors of individual sociodemographic, disaster risk management, and family health care needs constant.

Finally, factors such as gender, age, marital status, experience with natural or man-made hazards, disaster knowledge, family income, property ownership, the presence of older adults, or individuals with chronic diseases in the family did not significantly impact the prediction of the WFRQ-9 score and its 3 subdomains (Table 4).

Table 4. Multivariate regression modelling of Walsh Family Resilience Questionnaire Short Version (WFRQ-9)

| Domain | Category | Measures | Belief system (N = 843) | Organizational process (N = 839) | Communication Process (N = 838) | WFRQ-9 (N = 834) |
|---|---|-------------------------------|--|--|--|--|
| Individual sociodemographic | Gender (Ref. male) | Female | $\beta = 0.036, P = 0.288$ -0.138, 0.463 | $\beta = 0.007, P = 0.827$ -0.272, 0.341 | $\beta = 0.019, P = 0.580$ -0.227, 0.406 | $\beta = 0.024, P = 0.482$ -0.536, 1.135 |
| | Age (Ref. 18–29) | 30–59 | $\beta = -0.020, P = 0.730$ -0.592, 0.415 | $\beta = -0.045, P = 0.434$ -0.718, 0.309 | $\beta = -0.035, P = 0.539$ -0.696, 0.364 | $\beta = -0.037, P = 0.520$ -1.856, 0.939 |
| | | 60 or above | $\beta = 0.068, P = 0.301$ -0.306, 0.990 | $\beta = 0.037, P = 0.568$ -0.469, 0.854 | $\beta = 0.019, P = 0.773$ -0.582, 0.783 | $\beta = 0.048, P = 0.458$ -1.121, 2.483 |
| | Education (Ref. postsecondary) | Primary or below | $\beta = -0.067, P = 0.109$ -1.155, 0.115 | $\beta = -0.080, P = 0.057$ -1.282, 0.019 | $\beta = -0.101, P < 0.05$ -1.495, -0.148 | $\beta = -0.087, P < 0.05$ -3.663, -0.111 |
| | | Secondary | $\beta = -0.048, P = 0.246$ -0.581, 0.149 | $\beta = -0.048, P = 0.252$ -0.588, 0.154 | $\beta = -0.038, P = 0.362$ -0.562, 0.205 | $\beta = -0.051, P = 0.219$ -1.647, 0.378 |
| | Marital status (Ref. unmarried) | Married | $\beta = -0.001, P = 0.975$ -0.389, 0.377 | $\beta = -0.021, P = 0.631$ -0.488, 0.296 | $\beta = 0.018, P = 0.682$ -0.320, 0.489 | $\beta = 0.001, P = 0.987$ -1.060, 1.079 |
| Disaster risk management relevant factors | Natural hazards | Yes | $\beta = -0.049, P = 0.148$ -1.469, 0.222 | $\beta = -0.044, P = 0.204$ -1.420, 0.303 | $\beta = -0.054, P = 0.118$ -1.600, 0.180 | $\beta = -0.054, P = 0.117$ -4.214, 0.472 |
| | Man-made hazards | Yes | $\beta = 0.007, P = 0.845$ -0.279, 0.341 | $\beta = -0.028, P = 0.424$ -0.446, 0.188 | $\beta = 0.000, P = 0.991$ -0.329, 0.325 | $\beta = -0.009, P = 0.791$ -0.982, 0.748 |
| | Disaster knowledge | 0–5 | $\beta = -0.035, P = 0.320$ -0.230, 0.075 | $\beta = -0.031, P = 0.385$ -0.226, 0.088 | $\beta = 0.025, P = 0.490$ -0.105, 0.220 | $\beta = -0.011, P = 0.755$ -0.500, 0.363 |
| | Disaster preparedness | 0–6 | $\beta = 0.174, P < 0.001$ 0.176, 0.405 | $\beta = 0.184, P < 0.001$ 0.196, 0.429 | $\beta = 0.149, P < 0.001$ 0.137, 0.379 | $\beta = 0.191, P < 0.001$ 0.564, 1.201 |
| | Typhoon emergency response | 0–6 | $\beta = 0.060, P = 0.078$ -0.015, 0.291 | $\beta = 0.100, P < 0.01$ 0.075, 0.388 | $\beta = 0.072, P < 0.05$ 0.009, 0.332 | $\beta = 0.088, P < 0.05$ 0.131, 0.983 |
| Family economic and housing condition | Family income (Ref. \geq HK\$40000) | < HK\$20000 | $\beta = 0.037, P = 0.438$ -0.290, 0.669 | $\beta = 0.042, P = 0.381$ -0.271, 0.709 | $\beta = 0.056, P = 0.246$ -0.206, 0.804 | $\beta = 0.052, P = 0.277$ -0.596, 2.075 |
| | | HK\$20000–39999 | $\beta = -0.024, P = 0.562$ -0.483, 0.263 | $\beta = -0.019, P = 0.649$ -0.468, 0.292 | $\beta = 0.001, P = 0.988$ -0.389, 0.395 | $\beta = -0.014, P = 0.730$ -1.219, 0.855 |
| | Subsidized housing (Ref. private housing) | Government subsidized housing | $\beta = -0.112, P < 0.01$ -0.852, -0.143 | $\beta = -0.034, P = 0.410$ -0.514, 0.210 | $\beta = -0.091, P < 0.05$ -0.794, -0.046 | $\beta = -0.081, P < 0.05$ -1.985, -0.014 |
| | Poverty ownership (Ref. self-occupied) | Rental | $\beta = -0.002, P = 0.959$ -0.360, 0.343 | $\beta = -0.009, P = 0.813$ -0.402, 0.315 | $\beta = 0.023, P = 0.553$ -0.258, 0.482 | $\beta = 0.004, P = 0.928$ -0.931, 1.022 |
| | Log ₁₀ (housing size) | ft ² | $\beta = 0.058, P = 0.170$ -0.287, 1.628 | $\beta = 0.110, P < 0.01$ 0.323, 2.279 | $\beta = 0.076, P = 0.074$ -0.090, 1.930 | $\beta = 0.089, P < 0.05$ 0.194, 5.519 |
| | Household size | persons | $\beta = -0.025, P = 0.570$ -0.194, 0.107 | $\beta = 0.021, P = 0.627$ -0.115, 0.191 | $\beta = -0.007, P = 0.864$ -0.172, 0.145 | $\beta = -0.006, P = 0.888$ -0.448, 0.388 |

(Continued)

Table 4. (Continued)

| Domain | Category | Measures | Belief system (N = 843) | Organizational process (N = 839) | Communication Process (N = 838) | WFRQ-9 (N = 834) |
|-------------------------|-----------------------------|----------|--|---|---|--|
| Family healthcare needs | Child(ren) in family | Yes | $\beta = 0.088, P < 0.05$ 0.054, 0.849 | $\beta = 0.061, P = 0.126$ -0.089, 0.722 | $\beta = 0.031, P = 0.441$ -0.255, 0.584 | $\beta = 0.066, P = 0.098$ -0.172, 2.040 |
| | Old adult(s) in family | Yes | $\beta = -0.034, P = 0.360$ -0.614, 0.223 | $\beta = -0.040, P = 0.283$ -0.663, 0.194 | $\beta = -0.046, P = 0.223$ -0.719, 0.168 | $\beta = -0.041, P = 0.270$ -1.831, 0.513 |
| | Mid-old(s) in family | Yes | $\beta = 0.023, P = 0.550$ -0.267, 0.501 | $\beta = 0.006, P = 0.876$ -0.362, 0.425 | $\beta = -0.021, P = 0.594$ -0.516, 0.295 | $\beta = 0.002, P = 0.965$ -1.048, 1.096 |
| | Person(s) with a disability | Yes | $\beta = -0.103, P < 0.01$ -1.430, -0.265 | $\beta = -0.045, P = 0.218$ -0.968, 0.221 | $\beta = -0.035, P = 0.341$ -0.917, 0.318 | $\beta = -0.073, P < 0.05$ -3.291, -0.037 |
| Goodness of fit | | | F(21) = 3.900 $P < 0.001$ $R^2 = 0.091$ | F(22) = 3.717 $P < 0.001$ $R^2 = 0.087$ | F(22) = 3.012 $P < 0.001$ $R^2 = 0.072$ | F(21) = 4.072 $P < 0.001$ $R^2 = 0.095$ |

Note: The significant influencing factors were marked in bold.

Discussion

Walsh Family Resilience Questionnaire Short Version (WFRQ-9) for Disaster Scenarios

Family resilience equips families with the necessary support, adaptability, and innovation to navigate uncertainty and future challenges in a rapidly changing world.¹⁵ To assess the level of family resilience in the context of disasters, we developed the WFRQ-9, a reliable and efficient screening instrument. The WFRQ-9 captures 9 key aspects of family beliefs, organization, and communication that influence their response to adversities.

The scale has demonstrated strong measurement properties, including good construct validity and high internal reliability (Cronbach's $\alpha = 0.971$). Furthermore, the WFRQ-9 exhibits a robust factor structure, with the 2-layer, 3-factor model yielding the best fit (CFI: 0.995, RMSEA: 0.042, SRMR: 0.013). Scores on the WFRQ-9 range from 9-45, with a sample mean of 31.47 and a standard deviation of 6.38 supported by the data collected from Hong Kong.

Having adopted more behaviors of disaster preparedness and emergency response and having a large living space increased WFRQ-9. By incorporating disaster preparedness into resilience frameworks, a more holistic understanding of how individuals and families can effectively prepare for and respond to disasters is achieved, ultimately strengthening family resilience. The individuals and families are expected to have an immediate response to the disaster, especially within the first 72 hours.⁴² Enhancing the general public's disaster preparedness, such as preparing water and food for 3 days at home and increasing emergency response behaviors adopted when responding to local hazards, can have a broader impact on enhancing family resilience in the face of disasters. By improving preparedness and emergency response levels, families can enhance their capacity to respond efficiently to disasters, reduce risks, and adapt to challenging circumstances, ultimately fortifying their overall resilience.

Our research findings indicate that lower education levels, living in government-subsidized housing, and having family members with disabilities can reduce WFRQ-9 scores. Numerous studies have associated lower education levels with decreased family resilience. For instance, research by Violinda et al.⁵⁴ discovered that individuals with diploma/bachelor's degrees demonstrated greater resilience compared to those with high school/vocational school degrees, suggesting a positive correlation between higher education levels and family resilience. Moreover, Lennon & Heaman⁵⁵ found that individuals with higher education levels reported increased levels of family coherence, further reinforcing the idea that education contributes to the enhancement of family resilience.

Living in government-subsidized housing can significantly impact family resilience. For instance, Canadian renter households in government-subsidized housing have been found to be highly vulnerable to household food insecurity.⁵⁶ This suggests that the type of housing assistance provided can impact the well-being and resilience of families, particularly in terms of meeting basic needs like food security. Furthermore, securing subsidized housing has been linked to a lower likelihood of shelter readmission, implying that stable housing via government subsidies can enhance overall family stability and resilience, as per a study conducted in New York.⁵⁷ Additionally, while supportive housing offers more access to services than subsidized housing alone, it may not significantly benefit housing stability or employment for

families.⁵⁸ This suggests that the type of housing assistance offered can affect the support systems available to families, which can, in turn, impact their resilience.

In fact, the relationship between having disabled family members and family resilience is complex. Our data collected in Hong Kong indicate a negative correlation between the presence of disabled family members and family resilience. We recognize that the disabled population represents a significant vulnerable group in the context of disasters. Our findings also suggest that the family's response to disability is a critical factor in shaping their resilience. For instance, families with disabled children can witness positive outcomes, such as enhanced parent-child interactions, improved family functioning, and a heightened sense of life purpose.⁵⁹ These positive aspects can contribute to the resilience of families facing the unique circumstances associated with disability.

Furthermore, there is a pressing need to establish community programs that focus on enhancing family resilience through the development of essential skills, such as effective family communication and problem-solving. The implementation of resilience-oriented education and interventions is crucial to enhance the capacity for recovery from disasters.⁵ These interventions could concentrate on fortifying family systems, enhancing coping strategies, and cultivating the ability to positively adapt to challenging circumstances.

In accordance with the data collected in Hong Kong, interventions to strengthen family resilience, especially for families in which members reported low education levels, small living spaces, and disability, are urged. Residing in government-subsidized housing could potentially diminish belief systems and communication processes. Typically, residents of government-subsidized housing are regarded as individuals with lower socioeconomic status within society.⁵⁶ Family income was not a significant influencing factor, which may mean that the surrounding environment, including the design of the government-subsidized housing and neighborhood, influences citizens and their abilities to make meaning of adversity; have positive outlooks and skills in transcendence and spirituality; and achieve clarity, open emotional expression, and collaborative problem solving within families.

Limitations and Future Research

Building upon Walsh's original family resilience scale, we have developed a short scale for disasters to support a wide and quick assessment of family resilience specifically tailored for disaster scenarios. Although the current study contributes to the literature in several important ways, there are several limitations. First, the short scale's validation was based on approximately 1000 samples collected in Hong Kong. Thus, more cross-cultural validation is required before publicizing WFRQ-9 for disaster scenarios globally. Second, this study lacked sufficient evaluation of various psychometric properties, such as sensitivity to change. Sensitivity to change evaluates whether the scale can detect changes in family resilience over time, which is particularly important for intervention studies. Third, the concept of psychological resilience has been evoked in the explanation of the response and recovery from disastrous events of the public, ranging from individuals to families to larger communities. Future research should explore the interrelationships among individual, family, and community resilience.

Conclusions

The Walsh Family Resilience Questionnaire Short Version (WFRQ-9) with 9 items demonstrated satisfactory measurement properties, including good explanatory power, construct validity, and high internal reliability. The WFRQ-9 presented a robust factor structure, with a 2-layer, 3-factor model yielding the best fit. Proactive disaster preparedness and emergency response behaviors, as well as ample living space, increased WFRQ-9 score. The scale provides a target for intervention and prevention efforts. It has the potential to drive population-based strategies aimed at enhancing family resilience, serving as a valuable tool for practitioners working with individuals, families, communities, and organizations, as well as for researchers. With further cross-cultural validation, the WFRQ-9 could become an indispensable tool for global disaster risk management globally.

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Competing interest. No potential conflict of interest was reported by the authors.

Ethical standard. The study was reviewed and approved by the Human Subjects Ethics Sub-committee of The Hong Kong Polytechnic University (reference number: HSEARS20160304001).

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Appendix I

Validated Walsh Family Resilience Questionnaire Short Version (WFRQ-9) in English and Chinese

Directions: We will ask questions about your family's experience with adversities. Please share how your family deals with crises and ongoing challenges. Please use 1-5 to indicate how much the following sentences are true for your family currently. "1" means "rarely/never," "2" means "not often," "3" means "sometimes," "4" means "often," and "5" means "almost always."

說明:我們想了解您們家庭面對困難的經歷。請您分享下,您們家庭是如何應對危機和挑戰的。以下是關於一些家庭的描述和句子。請您用1-5分表示對這些句子是否符合您們現在家庭的狀況。其中“1分”代表“幾乎不/從不”,“2分”代表“很少”,“3分”代表“有時”,“4分”代表“經常”,“5分”代表“幾乎總是”。

| Items | 1 | 2 | 3 | 4 | 5 |
|--|---|---|---|---|---|
| 1 We try to make sense of stressful situations and focus on our options. 我們嘗試理解困境,並專注於我們可以有的選擇。 | | | | | |
| 2 We keep hopeful and confident that we will overcome difficulties. 對於克服困難,我們保持希望和信心。 | | | | | |
| 3 We draw on spiritual resources (religious or nonreligious) to help us cope well. 我們用精神力量(宗教或者非宗教)來協助應對困難。 | | | | | |
| 4 We are flexible in adapting to new challenges. 我們能靈活地應對新的挑戰。 | | | | | |
| 5 We can count on family members to help each other in difficulty. 在困境中,我們家人可以彼此依靠、互幫互助。 | | | | | |
| 6 We can rely on the support of friends and our community. 我們有朋友和社區的支持。 | | | | | |
| 7 We try to clarify information about our stressful situation and our options. 我們嘗試弄清我們的困境和選擇。 | | | | | |
| 8 We can share difficult negative feelings (e.g., sadness, anger, fears). 我們可以分擔負面情緒(例如悲傷,憤怒,恐懼等)。 | | | | | |
| 9 We collaborate in discussing and making decisions, and we handle disagreements fairly. 我們共同協商做決定,並公正地處理分歧。 | | | | | |