The Resilience of Families who Live in a Disaster-Prone Location in terms of Disaster Preparedness: A Scoping Review

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The Resilience of Families who Live in a Disaster-Prone Location in terms of Disaster Preparedness: A Scoping Review

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Abstract--- *Introduction: Post-disaster difficulties and problems are closely related to the level of family resilience. 50% of Lapindo mudflow victims in Indonesia have faced delays in getting disaster compensation due to having low resilience. Meanwhile 60% - 70% of riverbank residents in the UK have never been prepared due to low resilience. Objective: To explore the research that has been done related to the topic of family resilience living in disaster-prone locations in terms of disaster preparedness. Method: The study design was a scoping review where data were searched through the Medline and Scopus databases. Data analysis was performed using qualitative thematic analysis. Result: 20 articles were found that met the inclusion criteria. Themes that emerged from the basic research analysis included: definition of preparedness according to family, factors affecting disaster perceived risk, inter-family factors and intra-family factors that increase resilience. Discussion: Emotional and religious support can help shape coping and positive thinking so as to increase family resilience. An intervention that includes religion and increased resilience can fill a few gaps in understanding the science of resilience in preparing for disasters.*

Keywords--- *Resilience; Family; Disaster; Preparedness*

I. INTRODUCTION

The level of resilience affects the economic revival of families after a disaster [1]. The population of residents who live in areas near disasters rarely realize the risk of disasters or make preparations. Disaster preparedness is rarely done before a disaster event has occurred [2]. Goodhand and Klem (2005) emphasize that social conditions laden with vulnerabilities such as conflict or family weakness will lead to greater disaster impacts [3]. The post-disaster impact will be large on populations that lack preparedness. Awareness of the danger or risk of disaster will increase motivation for preparedness, which is in line with research in the UK in 60-70% of populations at high risk of flood who are not aware of these risks and so have never taken any preparedness action [5].

The decrease in resilience is suspected to be directly proportional to the mechanism of family coping thereby increasing stress which impacts on the process of family interaction. Research on family stress levels treating children with Down syndrome shows the greatest effect on reducing resilience comes from sources of vulnerability, family tension, and stress. Low resilience indicates high depression and it is reported that health problems are increasingly significant [6]. The level of family cohesion, family flexibility, communication skills, and support from others is directly related to

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resilience and adaptation [7]. Patterson (2002) explains that family resilience will result in family adaptation. The family as a unit has risk factors and protective factors, which when in the theory of human adaptation are stressful and coping. An attempt for the family to be able to analyze risk factors and increase protection factors will perpetuate improved adaptation [8,9].

Despite the many studies conducted to explore family resilience under stress [10–12], there is not much literature that explains the effect of family resilience on disaster preparedness. Assertions from studies conducted at several disaster locations imply that there is a link between increased family resilience which is a protection factor against potential disasters which is a risk factor [13]. A study is needed to explore knowledge from existing studies related to the description of the resilience of families living in potentially disastrous locations. So, the question arises: how does the resilience of families living in disaster-prone locations relate to disaster preparedness? This article aims to explore research that has been carried out related to the topic of family resilience living in disaster-prone locations in terms of disaster preparedness.

II. METHOD

- Theory of family resilience by Patterson

This study uses the theory of family resilience by Patterson (2002) as a bridge to understanding the various ideas of family resilience found in existing research. By definition, resilience is an ability to be able to adapt to or survive a problem. A resilient family is shown by the family relationship process when problems and protection mechanisms come into play [8]. According to Masten & Coatsworth (1998) the family is said to be resilient if it fulfils three things, namely: family level of outcome, risk factor, protective factor [8,9].

- Design, search strategy and inclusion criteria

The design of this study was a scoping review with the aim to explore the research that has been carried out and display a basic level (ground level view) on the topic of family resilience in terms of disaster preparedness [14,15]. The SPIDER pneumonic design was used to limit the search for research and develop keywords [17]. The sample of this study was families who live in disaster-prone locations (example: family, community) (Table 1).

Databases used in this study were Medline (EBSCO) and Scopus. A data search was conducted by researchers by reading titles and abstracts. The initial search was conducted from August - September 2019. Articles that were collected by researchers were selected using inclusion criteria. Inclusion criteria consisted of: (1) research carried out on families; (2) observation on resilience in terms of disaster preparedness; (3) articles published from 2009 - 2019. If the researcher had doubts about the selection of an article, the promotor determined whether the article was included or not. [17].

- Data extraction

The data extraction process used Pawson's recommendation (2002) about data extraction for narrative review with modification from Arksey and O'Malley's (2005) recommendation about data extraction for scoping a review, namely (1) author and year of publication, (2) country of study, (3) the objectives of the study, (4) methodology, (5) sampling techniques, (6) sampling criteria, (7) results, (8) conclusions, (9) statistical analysis [15,18,19].

- Data analysis

Data analysis was presented in the form of (1) description of existing research; and (2) thematic analysis based on the method of recommendations of Braun and Clarke (2006), namely on themes raised from the high frequency of mentions appearing in articles obtained (Table 2) [20].

III. RESULTS

A literature search was carried out carefully and as many as 152 articles were obtained. Reductions were made in irrelevant duplications, titles and abstracts. After reading the full literature it was decided to include 20 basic research studies (Figure 1).

- Primary research characteristics

Respondents in the basic research were vulnerable families including those who were particularly socially vulnerable (immigrants, CALD (culturally and linguistically diverse) 20% (n = 4), economically vulnerable 10% (n = 2), physically vulnerable (health disorder, disability, infant / aging member) 15% (n = 3), geographically vulnerable 30% (n = 6), socially and economically vulnerable 20% (n = 4), and geographical and physically vulnerable 5% (n = 1).

- Theme 1: Family Level Outcome

The socially vulnerable families demonstrated the importance of adequate supplies and emphasized preparedness in the preparation of an established evacuation plan, how to get enough information about disasters, and always to be vigilant when a disaster occurred [21]. The majority of vulnerable families said that informal disaster training even though repeated (rehearsal of disasters) by several different parties increased family resilience [22]. Training needed to include the theme of mental preparation consisting of emotional control, understanding psychological tension, and being prepared to carry out a disaster emergency plan. This theme was to prevent panic or anxiety in critical conditions [23].

Families who had positive thoughts about preparing for disasters increased preparedness behavior significantly compared to families who thought negatively [24,25]. The act of preparing for a disaster is thought to be influenced by the psychology of families and to shape resilience. These psychological factors are: knowledge of information about psychological preparedness, training or previous experience of emergency services, previous experience threatened by natural disasters, higher attention, active involvement with higher coping styles, lower stress, and lower depression [26].

- Theme 2: Family Risk Factor

Factors affecting the family's perceived risk were related to the impact of cyclone disaster including: gender, education level, income, land size, occupation, past disaster experience, and geographical location [27]. Natural disasters are classified as accumulated acute risks, although families with high resilience may still be affected by it [28,29]. Underestimating the impact of disasters also causes loss. Coastal populations in the United States underestimated Hurricane Sandy because Irene's previous storm did not have a fatal impact, so residents were evacuated late and suffered heavy losses [28].

Economically vulnerable families chose to seek loans to improve their homes after a disaster [30]. Physically vulnerable family complained about the difficulty of the evacuation process if there were no adequate public facilities to support the mobilization of people disabilities. Families found it difficult to procure the equipment needed independently due to insufficient savings for such preparedness [31].

- Theme 3: Family Protective Factor

The inter-family factor has an influence on increasing family resilience. Families of victims of disaster strengthen one another by helping to meet their survival needs [28]. Emotional support was found in women's empowerment groups making women 55% more proactive about playing a role in their families to prepare for disasters [32]. Social relations had an important influence on this process [33]. Traditional social capital ties the families of disaster victims together, among

others in terms of: sharing supplies, cooking large meals to meet the needs of all refugees, being responsive to caring for elderly families and people with disabilities, to moving goods before and after a disaster [28,30]. High resilience relates to help among residents [22].

Intra-family factors (family internal factors) play a role in increasing family resilience. Vulnerable families were suspected of taking pets as protective factors, thus encouraging them to prepare for disasters [34]. Families with high resilience showed a form of rapid adaptation; for instance, the first night post disaster the head of the family invited the member to a survival discussion [22]. Families with members with special needs and families who lived in areas that were flooded during Hurricane Sandy tended to be prepared for emergencies [24].The difference in disaster experience affecting the level of preparedness in Zambia was 9% compared to Namibia which was 52%; this is related to experience [25].

Religious nature is one of the catalysts for growing positive coping [35]. Religious belief fosters comfort that helps people think more clearly and act positively [36]. In the disaster evacuation process, it was reported that more religious people acted more effectively than non-religious people in changing the meaning of emotions [37,38] this is thought to be caused by cognitive reappraisal abilities [39].

IV. DISCUSSION

Components of preparedness are the provision of shelter, setting up disaster relief infrastructure, providing adequate supplies, providing medicines, adding children's toys and textbooks [27,29,31]. Supplies include adequate food, clean water which needs to be provided, at least enough for three days in the hope that help will come soon [40]. Medicines tend to be forgotten by families because not all families have knowledge about health. Children's toys can be one method of reducing children's stress when displaced; on the other hand, textbooks are useful so that school-age children can have their attention diverted by learning together with families or other refugees [41,42].

Data on gender relations and roles in preparedness remain a matter of debate. Some studies say that women play an important role in preparing for disasters [32,43]. However, much literature says that the role of men is more real [44].The role of women is also influenced by family conditions such as family composition, social, and family economy [43,45].

As many researchers predict that education or training on disaster preparedness has a positive effect [46–48]. on the family's response, repeated training on disasters is to increase their confidence in being prepared [22]. Technology-based games can be used to train children mentally to deal with the effects of disasters. Technology-based games play a role in building children's emotional abilities and as a medium for expression, understanding, and controlling emotions in children [49,50].

Perception and experience will affect preparedness regardless of the form of family vulnerability [24,25]. This is in line with research in Nigeria where if a perception is formed through disaster alert measures, preparedness measures will be more effectively implemented [51]. Increased perception can also occur from a different angle, namely through how vulnerable the locations of family homes are to disasters [52]. Influential experience increases disaster preparedness except among families who feel they have low ability to control the impact of disasters [53,54].

One form of getting ready is getting the latest news related to disasters. The methods of getting news about disasters varies from the conventional way of seeing news through the TV to using internet facilities [23,31,44]. But there is also a need for education given that the spread of rumors must be minimized so there is no chaos in the community [55].

The abstract concept of psychological disaster preparedness seeks to be explained by Every et al. (2019) from four perspectives. First, preparedness psychology is being mentally prepared to realize the threat of disaster and mitigate materially or physically. Second, preparedness psychology is an important key in responding to stress caused by disasters

and a protective factor to generate mental resilience. Third, preparedness psychology is knowledge that makes individuals ready independently to handle the effects of disasters. Fourth, forming a specific understanding of disaster, preparedness and plans, coping and personality all relate to positive mental health [26].

Families with high resilience were reported as experiencing stress if there was an accumulation of acute risks that afflicted families[22,56]. Disaster is an accumulation of acute risks. The impact caused by the disaster affects the aspects of biology, psychology, social, and economic factors especially on victims who are included in the category of vulnerable families [22], [56]. The potential impact of the disasters in Canada were 4,700 injured, 556,000 evacuated, around 92 million US dollars loss, and other material losses such as infrastructure damage [57]. Those disaster potential impact pictures the accumulation of risk felt by disaster survivors.

Family confidence has a significant impact in decision making related to disaster preparedness, but in families with single mothers, low incomes and families with elderly members there was low self-confidence [24,27]. Research conducted to increase resilience by the police in Australia was carried out by increasing confidence in people's abilities. The method used was self-reflection and changing stress perspectives. Difficulties can be an opportunity to improve abilities [58]. Increased confidence in disaster preparedness can be done with ongoing socialization from many parties such as disaster emergency services [23].

Resilience is an ongoing process that does not require a particular level be achieved so that the strengthening of emotional relationships especially, if among those who share the same burden is expected to help accelerate the process of increasing resilience. Intra-family factors show the same role in increasing resilience despite the different processes. The family as a unit requires the members collectively to develop resilience [8]. Understanding of the local language will help the preparedness process [21].

Intra family factors include the faith believed by the family [35]. Religion is a medium used by the family to enhance mental wellbeing. Religion is spirituality in the form of ritual. Spirituality itself was reported as linking to the development of a clear mind, increased focus, and reduced fear [59]. Properly equipped spirituality which helps to form meaning making in terms of disaster experiences can help to upgrade family resilience. This fact is supported by research that says spirituality helps in forming positive coping. Families with positive coping are supposed to have high resilience.

V. Conclusion

Growing resilience to preparedness in vulnerable populations is a daunting task. Basically, the vulnerable population has experienced the hardships of life every day and that increases resilience as evidenced by the ability of the family to survive. Béné C., et al. (2014) said that economically vulnerable families are not resilient even too resilient, only that poverty makes them unable to prepare adequately [60].

The purpose of writing this literature review was to explore research that has been carried out related to the topic of family resilience for those living in disaster prone locations in terms of disaster preparedness. If religion can be a bridge to increase positive emotions and coping, so that resilience will increase, an intervention that includes religion and increased resilience can fill a small gap in understanding the science of resilience in preparing for disasters.

This scoping review has a weakness, which is that the research that was included in the review was mostly qualitative research, so that the researchers had trouble quantifying family resilience in general. Some studies that measured family resilience used different instruments so that researchers were constrained in terms of combining the value of family resilience. Researchers will try to note this weakness so that, in future studies, it can be reduced.

REFERENCE

[1] Danes SM, Lee J, Amarapurkar S, Stafford K, Haynes G, Brewton KE. Determinants of family business resilience after a natural disaster by gender of business owner. J Dev Entrep. 2009 Dec;14(4):333–54.

[2] Miller MA, Douglass M. Disaster Governance in Urbanising Asia. Singapore: Springer Science & Business Media; 2016. 298 p.

[3] Åkebo M. Disaster Governance in War-Torn Societies: Tsunami Recovery in Urbanising Aceh and Sri Lanka. In: Disaster Governance in Urbanising Asia. Singapore: Springer Science & Business Media; 2016. p. 85–107.

[4] Padawangi R. Muddy Resistance: Community Empowerment in Mudflow Disaster Governance in Porong, Sidoarjo, Indonesia. In: Disaster Governance in Urbanising Asia [Internet]. Singapore: Springer Singapore; 2016 [cited 2019 Aug 16]. p. 61–84. Available from: http://link.springer.com/10.1007/978-981-287-649-2_4

[5] Harvatt J, Petts J, Chilvers J. Understanding householder responses to natural hazards: Flooding and sea-level rise comparisons. J Risk Res [Internet]. 2011 Jan [cited 2019 Jan 5];14(1):63–83. Available from: http://www.tandfonline.com/doi/abs/10.1080/13669877.2010.503935

[6] Choi EK, Yoo IY. Resilience In Families of Children With Down Syndrome In Korea. 2015;532–41.

[7] Choi EK, Van Riper M, Jang M, Han SW. Adaptation and Resilience in Families of Children With Spina Bifida in South Korea. Rehabil Nurs [Internet]. 2018;43(6):343–50. Available from: http://insights.ovid.com/crossref?an=00006939-201811000-00006

[8] Patterson JM. Understanding family resilience. J Clin Psychol [Internet]. 2002 Mar [cited 2019 May 10];58(3):233–46. Available from: http://doi.wiley.com/10.1002/jclp.10019

[9] McCubbin HI, Thompson EA, Thompson AI, Futrell JA. The dynamics of resilient families. McCubbin HI, Thompson EA, Thompson AI, Futrell JA, editors. The dynamics of resilient families. Thousand Oaks, CA, US: Sage Publications, Inc; 1999. xiv, 279–xiv, 279. (Resiliency in families, Vol. 4.).

[10] Shi L, Gao Y, Zhao J, Cai R, Zhang P, Hu Y, et al. Prevalence and predictors of posttraumatic stress symptoms in parents of children with ongoing treatment for cancer in South China: a multi-centered cross-sectional study. Support Care Cancer [Internet]. 2016; Available from: https://www.ncbi.nlm.nih.gov/pubmed/27966022

[11] O'Brien S. Families of Adolescents with Autism: Facing the Future. J Pediatr Nurs [Internet]. 2016;31(2):204–13. Available from: http://dx.doi.org/10.1016/j.pedn.2015.10.019

[12] Matua GA, Wal DM Van der. Living Under the Constant Threat of Ebola. J Nurs Res [Internet]. 2015;23(3):217–24. Available from: http://content.wkhealth.com/linkback/openurl?sid=WKPTLP:landingpage&an=00134372-201509000-00009

[13] Toledano-Toledano F, Moral de la Rubia J, McCubbin LD, Liebenberg L, Vera Jiménez JA, Rivera-Rivera L, et al. Validity and reliability of the Mexican resilience measurement scale in families of children with chronic conditions. Health Qual Life Outcomes [Internet]. 2017 Dec 13 [cited 2019 Jan 7];15(1):242. Available from: http://www.ncbi.nlm.nih.gov/pubmed/29237460

[14] Gasparyan AY, Ayvazyan L, Blackmore H, Kitas GD. Writing a narrative biomedical review: Considerations for authors, peer reviewers, and editors. Vol. 31, Rheumatology International. 2011. p. 1409–17.

[15] Pawson R. Evidence-based Policy: In Search of a Method. Evaluation [Internet]. 2002 Apr 24 [cited 2019 Nov 12];8(2):157–81. Available from: http://journals.sagepub.com/doi/10.1177/1358902002008002512

[16] Lozano S, Calzada-Infante L, Adenso-Díaz B, García S. Complex network analysis of keywords co-

occurrence in the recent efficiency analysis literature. Scientometrics. 2019 Aug 15;

[17]   Methley AM, Campbell S, Chew-Graham C, McNally R, Cheraghi-Sohi S. PICO, PICOS and SPIDER: A comparison study of specificity and sensitivity in three search tools for qualitative systematic reviews. Vol. 14, BMC Health Services Research. BioMed Central Ltd.; 2014.

[18]   Arksey H, O'Malley L. Scoping studies: Towards a methodological framework. Int J Soc Res Methodol Theory Pract. 2005 Feb;8(1):19–32.

[19]   Daudt HML, Van Mossel C, Scott SJ. Enhancing the scoping study methodology: A large, inter-professional team's experience with Arksey and O'Malley's framework. Vol. 13, BMC Medical Research Methodology. 2013.

[20]   Braun V, Clarke V. Using thematic analysis in psychology. Qual Res Psychol [Internet]. 2006 [cited 2019 Nov 5];3(2):77–101. Available from: https://www.tandfonline.com/action/journalInformation?journalCode=uqrp20

[21]   Teo M, Goonetilleke A, Deilami K, Ahankoob A, Lawie M. Engaging residents from different ethnic and language backgrounds in disaster preparedness. Int J Disaster Risk Reduct. 2019 Oct 1;39.

[22]   Akhter SR, Sarkar RK, Dutta M, Khanom R, Akter N, Chowdhury MR, et al. Reprint of: Issues with families and children in a disaster context: A qualitative perspective from rural Bangladesh. Int J Disaster Risk Reduct. 2015 Dec 1;14:140–51.

[23]   Howard A, Agllias K, Bevis M, Blakemore T. "They'll tell us when to evacuate": The experiences and expectations of disaster-related communication in vulnerable groups. Int J Disaster Risk Reduct. 2017 Jun 1;22:139–46.

[24]   Martins VN, Nigg J, Louis-Charles HM, Kendra JM. Household preparedness in an imminent disaster threat scenario: The case of superstorm sandy in New York City. Int J Disaster Risk Reduct [Internet]. 2019 Mar 1 [cited 2019 Nov 6];34:316–25. Available from: https://linkinghub.elsevier.com/retrieve/pii/S2212420918312196

[25]   Mabuku MP, Senzanje A, Mudhara M, Jewitt G, Mulwafu W. Rural households' flood preparedness and social determinants in Mwandi district of Zambia and Eastern Zambezi Region of Namibia. Int J Disaster Risk Reduct. 2018 Jun 1;28:284–97.

[26]   Every D, McLennan J, Reynolds A, Trigg J. Australian householders' psychological preparedness for potential natural hazard threats: An exploration of contributing factors. Int J Disaster Risk Reduct. 2019 Aug 1;38.

[27]   Sattar MA, Cheung KKW. Tropical cyclone risk perception and risk reduction analysis for coastal Bangladesh: Household and expert perspectives. Int J Disaster Risk Reduct. 2019 Dec;41:101283.

[28]   Hernández D, Chang D, Hutchinson C, Hill E, Almonte A, Burns R, et al. Public Housing on the Periphery: Vulnerable Residents and Depleted Resilience Reserves post-Hurricane Sandy. J Urban Heal [Internet]. 2018 Oct 7 [cited 2019 Nov 7];95(5):703–15. Available from: http://link.springer.com/10.1007/s11524-018-0280-4

[29]   Krishna RN, Ronan KR, Alisic E. Children in the 2015 South Indian floods: community members' views. Eur J Psychotraumatol. 2018 Dec 3;9(sup2):1486122.

[30]   Karunarathne AY, Lee G. Traditional social capital and socioeconomic networks in response to flood disaster: A case study of rural areas in Sri Lanka. Int J Disaster Risk Reduct. 2019 Dec;41:101279.

[31]   Lam RPK, Leung LP, Balsari S, Hsiao K hsun, Newnham E, Patrick K, et al. Urban disaster preparedness of Hong Kong residents: A territory-wide survey. Int J Disaster Risk Reduct. 2017 Aug 1;23:62–9.

[32]   Story WT, Tura H, Rubin J, Engidawork B, Ahmed A, Jundi F, et al. Social capital and disaster preparedness in Oromia, Ethiopia: An evaluation of the "Women Empowered" approach. Social Science and Medicine. 2018;

[33]   Ashida S, Robinson EL, Gay J, Ramirez M. Motivating rural older residents to prepare for disasters: moving beyond personal benefits. Ageing Soc [Internet]. 2016 Nov 20 [cited 2019 Nov 7];36(10):2117–40. Available from: https://www.cambridge.org/core/product/identifier/S0144686X15000914/type/journal_article

[34]   Thompson K, Trigg J, Smith B. Animal Ownership among Vulnerable Populations in Regional South Australia: Implications for Natural Disaster Preparedness and Resilience. J Public Heal Manag Pract [Internet]. 2017 [cited 2019 Nov 7];23(1):59–63. Available from: http://www.ncbi.nlm.nih.gov/pubmed/27598703

[35]   Lim JR, Liu BF, Egnoto M, Roberts HA. Individuals' religiosity and emotional coping in response to disasters. J Contingencies Cris Manag. 2019 Dec 1;27(4):331–45.

[36]   Bakar A. PENGEMBANGAN MODEL ASUHAN KEPERAWATAN (CARING) ISLAMI TERHADAP NYAMAN PSIKOSPIRITUAL PADA PASIEN JANTUNG KORONER [Internet]. Universitas Airlangga;

2017 [cited 2019 Nov 29]. Available from: http://repository.unair.ac.id/65060/

[37]   Carter EC, McCullough ME, Carver CS. The Mediating Role of Monitoring in the Association of Religion With Self-Control. Soc Psychol Personal Sci [Internet]. 2012 Nov 2 [cited 2019 Nov 29];3(6):691–7. Available from: http://journals.sagepub.com/doi/10.1177/1948550612438925

[38]   Koole SL, McCullough ME, Kuhl J, Roelofsma PHMP. Why Religion's Burdens Are Light: From Religiosity to Implicit Self-Regulation. Personal Soc Psychol Rev [Internet]. 2010 Feb [cited 2019 Nov 29];14(1):95–107. Available from: http://journals.sagepub.com/doi/10.1177/1088868309351109

[39]   Vishkin A, Bigman YE, Porat R, Solak N, Halperin E, Tamir M. God rest our hearts: Religiosity and cognitive reappraisal. Emotion. 2016 Mar 1;16(2):252–62.

[40]   Chen CY, Xu W, Dai Y, Xu W, Liu C, Wu Q, et al. Household preparedness for emergency events: a cross-sectional survey on residents in four regions of China. BMJ Open. 2019 Nov 1;9(11):e032462.

[41]   Hipper TJ, Davis R, Massey PM, Turchi RM, Lubell KM, Pechta LE, et al. The Disaster Information Needs of Families of Children with Special Healthcare Needs: A Scoping Review. Heal Secur [Internet]. 2018 Jun [cited 2019 Nov 7];16(3):178–92. Available from: http://www.ncbi.nlm.nih.gov/pubmed/29883200

[42]   Burger J, Gochfeld M, Lacy C. Concerns and future preparedness plans of a vulnerable population in New Jersey following Hurricane Sandy. Disasters [Internet]. 2019 Apr 16 [cited 2019 Nov 6];43(3):disa.12350. Available from: https://onlinelibrary.wiley.com/doi/abs/10.1111/disa.12350

[43]   Dangol N, Carrasco S. Residents' self-initiatives for flood adaptation in informal riverbank settlements of Kathmandu. Int J Disaster Risk Reduct [Internet]. 2019 Nov 1 [cited 2019 Nov 6];40:101156. Available from: https://linkinghub.elsevier.com/retrieve/pii/S2212420918314559

[44]   Kirschenbaum A (Avi), Rapaport C, Canetti D. The impact of information sources on earthquake preparedness. Int J Disaster Risk Reduct [Internet]. 2017 Mar 1 [cited 2019 Nov 6];21:99–109. Available from: https://linkinghub.elsevier.com/retrieve/pii/S2212420916303326

[45]   Khoza S, Van Niekerk D, Nemakonde LD. Understanding gender dimensions of climate-smart agriculture adoption in disaster-prone smallholder farming communities in Malawi and Zambia. Disaster Prev Manag An Int J. 2019 Oct 7;28(5):530–47.

[46]   Kılıç N, Şimşek N. The effects of psychological first aid training on disaster preparedness perception and self-efficacy. Nurse Educ Today. 2019 Dec 1;83.

[47]   Marlow R, Singleton S, Campeau D, Russell T, Hunt R, Hick JL, et al. The evolution of healthcare disaster preparedness and response training at the FEMA Center for Domestic Preparedness. Am J Disaster Med. 2019 Dec 1;14(1):5–8.

[48]   Superio DL, Abaday EM, Oliveros MGH, Delgado AS, Palcullo VE V., Geromiano JF. Fire + water + bombs: Disaster management among academic libraries in Marawi City, Lanao del Sur, Philippines. Int J Disaster Risk Reduct. 2019 Dec 1;41.

[49]   Denham SA. Emotional development in young children. Guilford Press; 1998. 260 p.

[50]   Raccanello D, Vicentini G, Brondino M, Burro R. Technology-based trainings on emotions: A web application on earthquake-related emotional prevention with children. In: Advances in Intelligent Systems and Computing. Springer Verlag; 2020. p. 53–61.

[51]   Ilo PI, Nkiko C, Izuagbe R, Furfuri IM. Librarians' perception of disaster preparedness as precursor for effective preservation and conservation of library resources in Nigerian university libraries. Int J Disaster Risk Reduct. 2020 Feb 1;43.

[52]   Khan SU, Qureshi MI, Rana IA, Maqsoom A. An empirical relationship between seismic risk perception and physical vulnerability: A case study of Malakand, Pakistan. Int J Disaster Risk Reduct. 2019 Dec 1;41.

[53]   Wei HH, Sim T, Han Z. Confidence in authorities, neighborhood cohesion and natural hazards preparedness in Taiwan. Int J Disaster Risk Reduct. 2019 Nov 1;40.

[54]   Priyanti RP, Hidayah N, Rosmaharani S, Nahariani P, Asri, Mukarromah N, et al. Community Preparedness in Flood Disaster: A Qualitative Study. Int Q Community Health Educ. 2019 Oct 1;40(1):67–8.

[55]   Zhang C, Fan C, Yao W, Hu X, Mostafavi A. Social media for intelligent public information and warning in disasters: An interdisciplinary review. Vol. 49, International Journal of Information Management. Elsevier Ltd; 2019. p. 190–207.

[56]   Setyawan AA, Isa M, Wajdi F, Syamsudin S. Disaster as Business Risk in SME: An Exploratory Study. Int J Res Bus Soc Sci. 2017;6(6):52–63.

[57]   Godsoe M, Ladd M, Cox R. Assessing Canada's disaster baselines and projections under the Sendai Framework for Disaster Risk Reduction: a modeling tool to track progress. Nat Hazards. 2019 Aug 1;98(1):293–317.

[58]   Crane MF, Rapport F, Callen J, Boga D, Gucciardi DF, Sinclair L. Military police investigator perspectives of a new self-reflective approach to strengthening resilience: A qualitative study. Mil Psychol. 2019 Sep

3;31(5):384–96.

[59]   Purwanti R, Ah.yusuf, Endang H, Qomariah SN, Bakar A. The effect of religious relaxation therapy on improving sleep quality of patients chronic kidney failure: A pilot study in surabaya. Bangladesh J Med Sci. 2020 Nov 7;19(1):48–52.

[60]   Béné C, Newsham A, Davies M, Ulrichs M, Godfrey-Wood R. REVIEW ARTICLE: RESILIENCE, POVERTY AND DEVELOPMENT. J Int Dev [Internet]. 2014 Jul [cited 2019 Nov 29];26(5):598–623. Available from: http://doi.wiley.com/10.1002/jid.2992

APPENDIX

Table 1. List of keywords using the SPIDER method

Sample		Phenomenon of Interest		Design		Evaluation		Research Type
Family Community Household	AND	Disaster Prone Risk* High Vulnerable	AND	Analysis Statistical Survey Interview Grounded Theory	AND	Resilience Resiliency Resilien* Adaptation Adapt* Coping Cope Cope*	AND	Qualitative Quantitative

Note:
* is a truncation mark used in the EBSCO and Scopus databases in order to retrieve terms with similar initial words

Table 2. Emerging themes of family resilience in disaster preparedness

Family Level Outcome	• Definition of preparedness according to family • The role of gender in decision making in disaster preparedness • Disaster preparedness education or training • Influence of perception of the impact of disasters on disaster preparedness • Choice of information sources related to disaster warning • Factors that influence family psychology to prepare for disasters
Family Risk Factor	• Factors that affect disaster perceived risk • Acute risk factors and their impact on family resilience • The acute impact of disasters on vulnerable families • The impact of low resilience on disaster preparedness
Family Protective Factor	• Inter-family factors that increase resilience • Intra-family factors that increase resilience • Socio-economic influence on disaster preparedness

Screening

The searched records identified through databases
Medline   : 34
Scopus   : 118
Total   : 152

Duplicates Removed: 3

Identification

Abstract: 149

Title and abstracts reviewed
Excluded: 89

Full-Text Articles: 60

Eligibility

Entire article reviewed
Excluded: 40

Included articles from formal database search: 20

Included

Final sample: 20
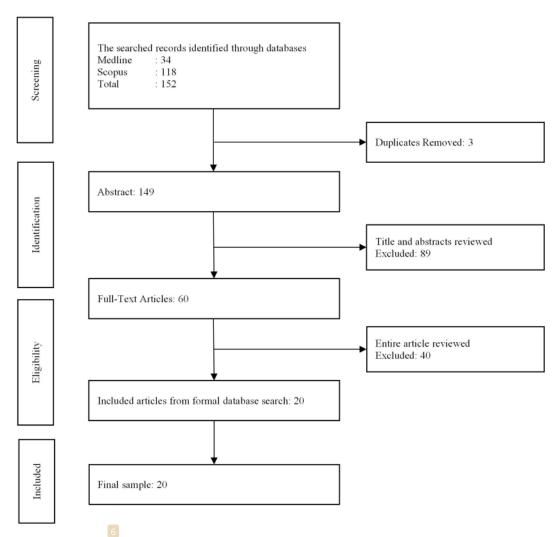
Fig 1. Flow diagram of the study selection process according to PRISMA

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