



Psychometric properties of Adolescent Resilience Questionnaire among Nepalese adolescents in Lalitpur



Rakesh Singh^{a,*}, Sharika Mahato^b, Babita Singh^c, Suraj Bhushal^a, Fatemeh Khoshnavay Fomani^d

^a School of Public Health, Patan Academy of Health Sciences, Lalitpur, Nepal

^b The Hebrew University-Hadassah Braun School of Public Health and Community Medicine, Jerusalem, Israel

^c National Medical College and Teaching Hospital, Tribhuvan University, Birgunj, Nepal

^d School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran

ARTICLE INFO

Keywords:

Adolescent
Resilience
Psychometric properties
Nepalese

ABSTRACT

Background: Although the need of measuring resilience among adolescents has gained attention in recent decades, there is no availability of an appropriate tool designed yet to assess resilience among Nepalese adolescents. This paper describes the psychometric properties of Adolescent Resilience Questionnaire (ARQ) among Nepalese adolescent students in Lalitpur which could be a possible tool for measuring resilience.

Method: The ARQ was translated into Nepali and back translated in English. The Nepali ARQ was self-administered in 512 adolescent students with 46.7% boys between the age of 13 and 19 years (M = 16.07 years, SD = 1.49) enrolled in six secondary schools in Lalitpur, Nepal. Test-retest reliability was assessed among 52 adolescent students within an interval of two weeks.

Results: Findings confirmed 12 scales and 5 domain factor structure of adolescents' resilience. Cronbach's alpha coefficient (α) for the scales and domains ranged between 0.64–0.86 and 0.71–0.86. The values of Intraclass correlation coefficient (ICC) showed that test-retest reliability of the scales and domains ranged between good and excellent with an overall ICC 0.95 (95% CI 0.92–0.97).

Conclusion: The Nepali version of the ARQ can be used to measure resilience among adolescents in Lalitpur, Nepal. Further studies are recommended to assess adolescents' resilience using the ARQ in diverse settings including communities of various provinces and regions of Nepal.

1. Introduction

Resilience remains to be an important determinant to be studied in relation to its ability to influence on health and quality of life (Luthar and Cicchetti, 2002). Resilience is a process of adapting and/or succeeding (Hunter and Chandler, 1999). Resilient people can cope with stress or adversity more compared to non-resilient individuals (Holaday and McPhearson, 1997; Rutter, 1999). Resilience, one of the key constructs of positive mental health (Béné et al., 2016; Nelson et al., 2016), can be described as one's capability to tackle adversity or stress positively (Garmezy, 1991; Masten, 2001). The comprehensive nature of this construct makes its measurement difficult and exhaustive for a single tool (Guilera et al., 2015). Despite of advancements to these tools, the question in terms of its limitations exist (Smith-Osborne and Whitehill, 2013). Additionally, most of the resilience tools have overlooked the contexts of family, community, or societal relations which are equally important dimensions to be assessed while measuring

resilience (Windle et al., 2011). Furthermore, most of the tools have been designed to measure resilience among adults (Guilera et al., 2015).

Despite resilience being related to vulnerability and resistance to psychopathology during adolescence (Cicchetti and Rogosch, 2002; Masten, 2004), measuring adolescents' resilience remains to be a neglected area of study (Ahern et al., 2006). Adolescence can be viewed as a vulnerable stage in human life in relation to the chance of getting involved in health risk behaviors and setting about for stress (Hockenberry, 2012; Rew and Horner, 2003). Furthermore, measures of resilience have been linked to internalizing problems such as anxiety and depression (Hjemdal et al., 2007). Resilient adolescents have greater probability to grow into resilient adult with better skills to cope in difficult circumstances and diverse roles and responsibilities (Murphey et al., 2013). Resilience among adolescents can be described as the techniques to adjust in threatening situations (Ahern et al., 2006).

* Corresponding author.

E-mail address: rakes4r@gmail.com (R. Singh).

<https://doi.org/10.1016/j.ajp.2019.08.002>

Received 22 May 2019; Received in revised form 29 July 2019; Accepted 3 August 2019

1876-2018/ © 2019 Elsevier B.V. All rights reserved.

Nonetheless, few investigators focused on the significance of assessing the construct of resilience among adolescents and sought to design tools that could be used to assess adolescents' ability towards tackling adversity and internalizing problems (Fergus and Zimmerman, 2005; Olsson et al., 2003).

Accordingly, there is a need of tools to measure resilience precisely considering the typical characteristics of adolescents (Guilera et al., 2015). In this regard, Adolescent Resilience Questionnaire (ARQ) is a comprehensive tool to measure adolescents' resilience (Gartland et al., 2011). ARQ remains to be a robust tool embracing both individual and environmental dimensions in an exhaustive way (Gartland et al., 2011; Lynch and Cicchetti, 1998; Masten, 2001). This inclusion of individual and environmental factors or resources encompassing culture, neighborhood, school and family makes the construct measurement more accurate and favors for its implications in designing interventions (Olsson et al., 2003; Richardson et al., 1990).

Nearly 25% of the Nepalese population is comprised of adolescents (Government of Nepal, 2012). However, a significant proportion of this group of population is affected by high stress which is mirrored by the fact that more than one-tenth of Nepalese adolescents considered attempting suicide (Aryal et al., 2015). Similarly, more than one-third of this group reported to be affected from depression (Sharma and Kar, 2018). Additionally, risky behaviors and lack of protective factors are reported with regards to the environment surrounding among this younger group of population (Aryal et al., 2017). Moreover, resilience coincides between these factors in the lives of adolescents and helps them to adapt with the adverse conditions affecting their mental health (Rew and Horner, 2003).

Nepal has gone through many years of internal conflict, followed by the devastating earthquake in 2015, along with yearly seasonal natural calamities. There is all cross border trafficking of children as a concerning social phenomenon. Many other challenges are faced by Nepalese adolescents in this country which has recently federalized with unstable political changes. These changes in governance structures will impact the health care delivery system. Furthermore, the provincial health system is yet to be incorporated independently at the provincial level (Dhonju and Seshadri, 2018). All these aspects may create an adverse situation and influence mental health of Nepalese adolescents. However, resilient adolescents do have stronger potential to face these adversities in life and promote their mental health. In this regard, emphasis may be directed towards measuring resilience in adolescents and developing this construct. Moreover, in Nepal, there is a severe lack of mental health services, especially child and adolescent mental health services, with only one full time child and adolescent mental health service provider at a central children's hospital in Kathmandu (Dhonju and Seshadri, 2018). Current need, in absence of adequate mental health care services for adolescents, is local adaptation of standardized tools to assess adolescents' resilience at the community level. The tool may prove to be a useful and economically sound method for assessment of resilience and mental health status of adolescents so that appropriate health promotion intervention can be designed and implemented (Dhonju and Seshadri, 2018).

There have been adaptations to ARQ and its psychometric analysis in various contexts such as Romanian, Spanish and Persian (Cheraghi et al., 2017; Guilera et al., 2015; Marici, 2015). However, no studies have been conducted measuring resilience among Nepalese adolescents using the ARQ. Given the significance of context and culture in measuring resilience (Ungar, 2008), this paper highlights the assessment of the psychometric properties of the Nepali translation of the ARQ among adolescents enrolled in secondary schools in Lalitpur, Nepal.

2. Methods

2.1. Participants and procedures

Adolescent students aged between 13 and 19 years old from six

secondary schools in Lalitpur, covering both public and private schools (three public schools and three private schools) were involved in the study. A simple random sampling was deployed for selecting schools, and lottery method was used to select adolescent students from grade 9 to 12 from each of the six selected schools. The Nepali version of ARQ was administered among a total of 512 adolescent students. Moreover, 52 adolescent students' resilience was reassessed using the same ARQ over a time period of two weeks to assess the test-retest reliability of the tool.

Ethical approval was taken from Nepal Health Research Council to conduct the current study. At first, the permission to carry out this study was obtained from Education Development and Coordination Unit of Lalitpur. Then, the school principals and the parents or guardians of the adolescent students were informed about the purpose of this study followed by seeking consent from them. Finally, adolescent students were informed about the purpose of data collection ensuring their voluntary participation by obtaining assent for their involvement in the study. The data was collected in the normal classroom time and on an average it took 40–50 minutes for adolescents to complete the questionnaire.

2.2. Measures and data analysis

Adolescent Resilience Questionnaire (ARQ) comprises 88 items self-administered tool for adolescents in general population with 12 scales measuring resilience in five domains of Self, Family, Peers, School, and Community (see Table 1) (Gartland et al., 2011). The tool assesses individual traits encompassing Confidence, Emotional Insight, Negative Cognition, Social Skills, and Empathy and Tolerance along with the environmental domains bordering family, peer, school and community. The ARQ scales reported to have good factor structure and acceptable alpha coefficients (Gartland et al., 2011). With the permission of the lead author of the ARQ (DG), the original items of the ARQ were translated into Nepali by three experts- a psychiatric nurse, a public health expert and an anthropologist, whose first language was Nepali. The translated questionnaire in Nepali was reviewed by five native speakers to ensure its comprehensibility and some modifications were carried out in a consensus, followed by the back-translation procedure. The back-translation was reviewed by DG and with the feedback few changes in Nepali words were made in Nepali ARQ. Further, Nepali ARQ, its back-translation and original ARQ were concurrently reviewed and discussed by the three experts to ensure accuracy in the psychological meaning of each word in the Nepali version of ARQ, and the Nepali translation was modified for any discrepancy accordingly to prepare the final version of the Nepali ARQ.

Statistical analyses were performed using SPSS vs25 and Lisrel 8.8. Frequency, percentage and mean were used to describe socio-demographic variables. The internal consistency of the tool and its subscales were assessed using Cronbach's alpha coefficients. Similarly, test-retest reliability of the tool was assessed using intraclass correlation coefficients (ICC). Additionally, a confirmatory factor analysis (CFA) was performed to verify the factor structure of the questionnaire as proposed by the authors of the ARQ.

3. Results

3.1. Socio-demographic characteristics

Study participants were 512 adolescent students from grade 9 to 12 with 46.7% boys and 53.3% girls between 13 and 19 years of age ($M = 16.07$ years, $SD = 1.49$).

3.2. Descriptive data and internal consistency of Nepali ARQ

Data described in Table 2 shows that alpha coefficients for the scales of Nepali ARQ were in the range between 0.64 and 0.86. The computed

Table 1
Domain and scale internal consistencies of the ARQ (Gartland et al., 2011).

Domain/Scale	Definition	Number of items	Example of item
Individual/Self			
Confidence	Self-confidence and future expectations	8	I feel hopeful about my life
Emotional insight	Understanding and regulation of emotions	8	If I can't handle something I find help
Negative cognition	Tendency to worry, to ruminate and to pessimism	8	I worry about the future
Social skills	Communication skills and ability to develop connections with others	8	I find it hard to make important decisions
Empathy/Tolerance	Capacity to understand others' feelings and perspective	8	I am easily frustrated with people
Family			
Connectedness	Nurturing and supportive family environment	8	I do fun things with my family
Availability	Family members' availability to offer support and advice	3	There is someone in my family I can talk to about anything
Peers			
Connectedness	Connections to friends and confidence with peers	7	I have friends who make me laugh
Availability	Ability to develop and maintain friendships with peers	8	I find it hard making friends
School			
Supportive environment	Support from teachers and school staff	8	I get involved with school activities
Connectedness	Engagement with school socially and academically	8	I hate going to school
Community			
Connectedness	Perception of belonging to the community and support from people in their neighborhood	6	I like my neighborhood

Table 2
Descriptive data and alpha coefficient for scales of Nepali ARQ and original ARQ.

ARQ scales	Mean score	SD	Alpha Coefficient	
			Nepali	Original
Individual Confidence	32.67	4.55	0.69	0.81
Individual Emotional Insight	30.16	5.14	0.74	0.71
Individual Negative Cognition	22.49	5.99	0.70	0.83
Individual Social Skills	26.17	5.90	0.74	0.68
Individual Empathy/Tolerance	26.65	5.30	0.68	0.66
Family Connectedness	31.28	5.03	0.74	0.87
Family Availability	11.61	3.14	0.78	0.79
Peers Connectedness	27.56	4.71	0.74	0.81
Peers Availability	25.11	5.07	0.64	0.64
School supportive environment	29.03	5.83	0.77	0.81
School connectedness	29.66	5.03	0.72	0.65
Community connectedness	20.27	5.74	0.86	0.88

Cronbach's alpha coefficient for domains of Nepali ARQ showed that all domains were in the range between acceptable and good; for Individual ($\alpha = 0.78$), Family ($\alpha = 0.82$), Peers ($\alpha = 0.71$), School ($\alpha = 0.83$), and Community ($\alpha = 0.86$). The overall Cronbach's alpha coefficient for Nepali ARQ was in the range of good ($\alpha = 0.89$).

3.3. Test-retest reliability of Nepali ARQ

The findings in Table 3 depicts that the ICC for all domains and all scales ranged between 0.87 to 0.95 and 0.74 to 0.96 respectively indicating good reliability of adolescents' resilience scores using Nepali ARQ when calculated in an interval of two weeks. Furthermore, the overall ICC was 0.95 (95% CI 0.92–0.97) which ensures the excellent reliability of Nepali ARQ.

3.4. Fit indices for scales of Nepali ARQ

The estimated fit indices for scales of Nepali ARQ in Table 4 reveals that the original twelve scales and five domain model of resilience had a fair fit within the study participants. Moreover, the data on factor loadings of items shows that few of the items had poor correlation within the scale (see Additional File 1). However, most of the items had good correlation with the scale.

Table 3
Intraclass correlation coefficient for scales of Nepali ARQ.

Domain/Scale	Intra Class Coefficient (ICC)	95% Confidence interval of ICC
Individual Domain	0.95	0.91 – 0.97
Confidence	0.86	0.76 – 0.92
Emotional insight	0.88	0.79 – 0.93
Negative cognition	0.95	0.91 – 0.97
Social skills	0.94	0.90 – 0.96
Empathy/Tolerance	0.93	0.81 – 0.96
Family Domain	0.95	0.92 – 0.97
Connectedness	0.96	0.93 – 0.97
Availability	0.93	0.88 – 0.96
Peers Domain	0.87	0.78 – 0.93
Connectedness	0.85	0.74 – 0.91
Availability	0.93	0.88 – 0.96
School Domain	0.92	0.86 – 0.95
School supportive environment	0.95	0.92 – 0.97
School connectedness	0.74	0.55 – 0.85
Community Domain	0.88	0.79 – 0.93
Community connectedness	0.88	0.79 – 0.93

Table 4
Confirmatory factor analysis for scales of Nepali ARQ.

Indices	Estimated value	Cut-off values
χ^2	12.20	–
Df	5	–
P	0.03	< 0.05
GFI	0.99	0.9
RMSEA	0.05	Stringent upper limit of 0.07
90%CI	0.01, 0.09	–
CFI	0.99	> = 0.95
RMR	2.87	> = 0.08
NFI	0.98	> = 0.95

4. Discussion and conclusion

Being a country of great topographical and cultural diversities, Nepal has various challenges among which mental health of the adolescents remains to be a more neglected and less addressed area (Dhonju and Seshadri, 2018). The pathways of care for adolescent

mental health include early detection and early referral of mental health issues (Dhonju and Seshadri, 2018). With the adolescent mental health in its infancy in Nepal, there is need of studies assessing adolescent mental health (Dhonju and Seshadri, 2018). In this line, this study attempted to adapt the standardized tool (ARQ) to measure adolescents' resilience in Nepalese context. The overall results indicated the Adolescent Resilience Questionnaire to be a comprehensive tool to assess various domains of resilience among Nepalese adolescent students in Lalitpur, Nepal. The values of the goodness-of-fit index (GFI) and the standardized root mean square residual (SRMR) suggested that the twelve scales and five domain model of the adolescents' resilience as proposed by the authors of the ARQ was found to be fairly fit among Nepalese adolescents in secondary school settings in Lalitpur (Hu and Bentler, 1999). Further, based on the criteria of Kline (2005), the overall internal consistency of the tool in Nepalese context was found to be good. Furthermore, the internal consistency of the domains and most of the scales of the ARQ in the present study was found to be within the range between acceptable and good. However, the alpha coefficient of Individual Confidence scale ($\alpha = 0.69$) in the current study over the alpha coefficient of Individual Confidence scale ($\alpha = 0.81$) in the original ARQ (Gartland et al., 2011) indicates the presence of scope of improving the scale's reliability by rewording of the items in this scale in the Nepalese version of the ARQ. The internal consistency of the scales of the ARQ in Nepalese context was found to be similar to that of the scales of the ARQ in the original validation of the English version (Gartland et al., 2011). Similar to the results in the present study, Guilera et al. (2015) confirmed the twelve scales factor structure of the ARQ and reported internal consistency to be generally adequate (alpha coefficient ranging between 0.6 and 0.84). Marici (2015) also supported the findings of the present study with acceptable reliability trait for the family domain of the ARQ. The values of the intraclass correlation coefficient showed that the test-retest reliability of the scales and domains of ARQ in the Nepalese context ranged between good and excellent (Cicchetti, 1994). Moreover, the overall ICC value of the Nepali ARQ indicated its reliability to be excellent. Similar values of the intraclass correlation coefficient were reported for the Persian version of the ARQ (Cheraghi et al., 2017).

The individual confidence scale, individual empathy and tolerance scale and peers availability scale had values of alpha coefficient below 0.70. This may be attributable to socio-cultural differences in the present study as compared to studies done in Persian adolescents, Australian adolescents and Spanish adolescents (Cheraghi et al., 2017; Gartland et al., 2011; Guilera, et al., 2015).

The Nepali ARQ is the first comprehensive tool encompassing both individual and environmental factors to measure adolescents' resilience in the context of Nepal. In a nutshell, the overall findings of the present study suggested Nepali ARQ scales to be valid and reliable among Nepalese adolescent students aged 13–19 years enrolled in secondary schools in Lalitpur. The tool will have future implications to measure resilience among Nepalese adolescents and design interventions to improve their mental health.

Despite the present study has produced significant results in terms of psychometric properties of the ARQ among Nepalese adolescents in secondary schools in Lalitpur, it has few limitations. The samples consisted of adolescents only from secondary school settings in Lalitpur which in turn may limit the generalizability of the results to Nepalese adolescents in other settings. Furthermore, the classroom setting of this study may have created peer influence in the response of the participants. Additionally, there may be other dimensions that determine the level of resilience among Nepalese adolescents' resilience. Further studies encompassing both qualitative and quantitative methods to assess adolescents' resilience in diverse settings including communities of various ecological regions and provincial states of Nepal are recommended to test the psychometric properties of the Nepali ARQ in a wider context in the Nepalese population.

Financial disclosure

This research did not receive any specific grant from funding agencies in the public, commercial, or, not-for-profit sectors.

Declaration of Competing Interest

No.

Acknowledgements

We thank Nepal Health Research Council for giving permission to carry out this research. We would also like to thank Dr Deirdre Gartland for giving permission to translate ARQ in Nepali and her invaluable effort in reviewing the back-translation. Similarly, we are also indebted to Professor Madhusudan Subedi for his sincere effort in reviewing and finalizing the data collection tool. We also express our deep gratitude to all the students who participated in this research.

Additional File

Additional File 1: Factor loadings of Nepali ARQ items. <https://doi.org/10.1016/j.ajp.2019.08.002>.

References

- Ahern, N.R., Kiehl, E.M., Lou Sole, M., Byers, J., 2006. A review of instruments measuring resilience. *Issues Compr. Pediatr. Nurs.* 29 (2), 103–125.
- Aryal, K.K., Bista, B., Dhimal, M., Khadka, B.B., Pandey, A.R., Mehta, R., et al., 2017. Global School Based Student Health Survey Nepal, 2015. Nepal Health Research Council, Kathmandu, Nepal.
- Béné, C., Al-Hassan, R.M., Amarasinghe, O., Fong, P., Ocran, J., Onumah, E., Mills, D.J., 2016. Is resilience socially constructed? Empirical evidence from Fiji, Ghana, Sri Lanka, and Vietnam. *Global Environ. Change* 38, 153–170. <https://doi.org/10.1016/j.gloenvcha.2016.03.005>.
- Cheraghi, M.A., Ebadi, A., Gartland, D., Ghaedi, Y., Fomani, F.K., 2017. Translation and validation of "Adolescent Resilience Questionnaire" for Iranian adolescents. *Asian J. Psychiatr.* 25, 240–245.
- Cicchetti, D.V., 1994. Guidelines, criteria, and rules of thumb for evaluating normed and standardized assessment instruments in psychology. *Psychol. Assess.* 6 (4), 284.
- Cicchetti, D., Rogosch, F.A., 2002. A developmental psychopathology perspective on adolescence. *J. Consult Clin Psych.* 70 (1), 6–20.
- Dhonju, G., Seshadri, S.P., 2018. 'Resource Mapping and Needs Assessment For Child and Adolescent Mental Health Services in Nepal', Post Doctoral Dissertation. National Institute of Mental Health and Neuro Sciences, Bengaluru.
- Fergus, S., Zimmerman, M.A., 2005. Adolescent resilience: a framework for understanding healthy development in the face of risk. *Annu Rev Publ Health.* 26, 399–419.
- Garnezy, N., 1991. Resiliency and vulnerability to adverse developmental outcomes associated with poverty. *Am. Behav. Sci.* 34 (4), 416.
- Gartland, D., Bond, L., Olsson, C.A., Buzwell, S., Sawyer, S.M., 2011. Development of a multi-dimensional measure of resilience in adolescents: the Adolescent Resilience Questionnaire. *BMC Med. Res. Methodol.* 11 (1), 134.
- Government of Nepal, 2012. National Population and Housing Census 2011. Central Bureau of Statistics, Kathmandu, Nepal.
- Guilera, G., Pereda, N., Noemi, Panos, A., Abad, J., 2015. Assessing resilience in adolescence: the Spanish adaptation of the Adolescent Resilience Questionnaire. *Health Qual. Life Outcomes* 13 (100).
- Hjemdal, O., Aune, T., Reinfjell, T., Stiles, T.C., Friborg, O., 2007. Resilience as a predictor of depressive symptoms: a correlational study with young adolescents. *Clin Child PsycholPsychiat.* 12, 91–104.
- Hockenberry, M.J., Wilson, D., Wong, D.L., 2012. Wong's essentials of pediatric Nursing9: wong's essentials of pediatric nursing. Elsevier Health Sciences.
- Holiday, M., McPhearson, R.W., 1997. Resilience and severe burns. *J. Couns. Dev.* 75 (5), 346.
- Hu, L., Bentler, P.M., 1999. Cutoff criteria for fit indexes in covariance structure analysis: conventional criteria versus new alternatives. *StructEqu Modeling.* 6 (1), 1–55.
- Hunter, A.J., Chandler, G.E., 1999. Adolescent resilience. *Image: J. Nurs. Scholarsh.* 31 (3), 243–247.
- Kline, R.B., 2005. Principles and Practice of Structural Equation Modeling. Guilford Press, New York, pp. 59.
- Luthar, S.S., Cicchetti, D., 2002. The construct of resilience: implications for interventions and social policies. *Dev. Psychopathol.* 12, 857–885.
- Lynch, M., Cicchetti, D., 1998. An ecological-transactional analysis of children and contexts: the longitudinal interplay among child maltreatment, community violence and children's symptomatology. *Dev. Psychopathol.* 10 (2), 235–257.
- Masten, A.S., 2001. Ordinary magic: resilience processes in development. *Am. Psychol.* 56 (3), 227.

- Masten, A.S., 2004. Regulatory processes, risk, and resilience in adolescent development. *Ann. N. Y. Acad. Sci.* 1021, 310–319.
- Marici, M., 2015. Some psychometric properties of the family domain in the adolescent resilience questionnaire. *Procedia-Social Behav. Sci.* 187, 289–294.
- Murphey, D., Barry, M., Vaughn, B., 2013. Child Trends Positive Mental Health: Resilience [Internet]. 2013 [cited 2018 Sep 1]. Available from: https://www.childtrends.org/wp-content/uploads/2013/03/Child_Trends-2013_11_01_AHH_Resilience.pdf.
- Nelson, N., Shacham, R., Ben-ari, R., 2016. Trait negotiation resilience: a measurable construct of resilience in challenging mixed-interest interactions. *Personality Individ. Differences* 88, 209–218. <https://doi.org/10.1016/j.paid.2015.08.022>.
- Olsson, C.A., Bond, L., Burns, J.M., Vella-Brodick, D.A., Sawyer, S.S., 2003. Adolescent resilience: a concept analysis. *J Adolescence*. 26, 1–11.
- Rew, L., Horner, S.D., 2003. Youth resilience framework for reducing health-risk behaviors in adolescents. *J. Pediatr. Nurs.* 18 (6), 379–388.
- Richardson, G.E., Neiger, B.L., Jensen, S., Kumpfer, K.L., 1990. The resiliency model. *Health Educ.* 21 (6), 33–39.
- Rutter, M., 1999. Resilience concepts and findings: implications for family therapy. *J. Family Ther.* 21 (2), 119–144.
- Sharma, A., Kar, N., 2018. Posttraumatic Stress, Depression, and Coping Following the 2015 Nepal Earthquake: A Study on Adolescents. *Disaster Med. Public Health Prep.* 1–7.
- Smith-Osborne, A., Whitehill, B.K., 2013. Assessing resilience: a review of measures across the life course. *J. Evid. Soc. Work* 10 (2), 111–126.
- Ungar, M., 2008. Resilience across cultures. *Brit J Soc Work*. 38, 218–235.
- Windle, G., Bennett, K.M., Noyes, J., 2011. A methodological review of resilience measurement scales. *Health Qual. Life Outcomes* 9 (8), 1–18.