



WWJMRD 2023; 9(04): 30-34
www.wwjmr.com
International Journal
Peer Reviewed Journal
Refereed Journal
Indexed Journal
Impact Factor SJIF 2017:
5.182 2018: 5.51, (ISI) 2020-
2021: 1.361
E-ISSN: 2454-6615

Lowel Urian

Psychology Department,
National University
Philippines Bulacan Campus
Baliwag, Bulacan, Philippines.

Arnel Diego

Office of the Executive
Director, National University
Philippines Clark Campus
Mabalacat, Pampanga,
Philippines.

Rizalia Aurelia General

Psychology Department,
National University
Philippines Bulacan Campus
Baliwag, Bulacan, Philippines.

Correspondence:

Lowel Urian

Psychology Department,
National University
Philippines Bulacan Campus
Baliwag, Bulacan, Philippines.

The Initial Development and Validation of the NatU Empathy Scale

Lowel Urian, Arnel Diego, Rizalia Aurelia General

Abstract

The study focused on the initial development and validation of the NatU Empathy Scale (NatU ES); a scale designed to measure empathy. The scale's psychometric properties were established by determining its validity by expert validation and construct validation, and reliability by estimating its coefficient of stability and internal consistency. Upon conducting appropriate data analysis, it can be suggested that the NatU ES has significant and statistically competitive psychometric properties.

Keywords: Empathy, Personality Measure, Test Construction.

1. Introduction

Since its conceptualization, experts in the field of social sciences and neurobiological sciences have not reached a mutual agreement on how empathy is defined. For instance, narratives from the writings of Coplan (2011) and Engelen and Rottger-Rossler (2012), as cited by Eklund and Meranius (2020), respectively entailed that "a longstanding problem with the study of empathy is the lack of clear and agreed-upon definition" and "almost anybody writing in the field would declare that there is no standard definition of empathy." Even with the lack of agreement on the definition of empathy, however, there have been numerous academic studies, researches, and findings of the construct, particularly within the field of psychology, nursing, neuroscience, and philosophy. There have also been approximately ten thousand scientific articles written about empathy with the majority published in the 21st century.

Empathy is best defined as the process of sharing of feelings, that is, resonating with someone else's feelings, whether it is positive or negative, with the complete awareness that the other person is the origin of this positive or negative emotion (Prackel et al., 2017). However, having empathy or being empathic is not only about resonating with someone else's feelings but also involves correctly and accurately inferring the contents of another person's feelings and thoughts with regards to a certain event or situation. Numerous factors that contribute to being 'accurately' empathic were identified and can be summarized into two, which are the emotional expressivity of an individual and the information available to the perceiver about what triggered the receiving individual's emotions (Israelashvili et al., 2020).

Moreover, Lamm et al. (2017) agreed with the definition of empathy stated above and further explained that empathy covers the isomorphic sharing of the affective state of another person, called affect sharing, which can be caused not only by direct observation, but also by mentalizing the emotions of another person, and knowing that the source of his or her affect lies in the other. Additionally, Eklund and Meranius (2020) named four common themes under the construct of empathy: understanding, feeling, sharing, and self-other differentiation. Understanding is a cognitive process that involves being aware of the mental life of another person while feeling is an affective process that involves expressing an appropriate response to another person's situation. Sharing, on the other hand, involves experiencing a state similar to those that the other person is experiencing while self-other differentiation involves a recognition that there is a variation between the other person and oneself.

As suggested, a core feature of empathy is its capability to help people connect with one another. As Riess (2017) stated, the ability to empathize is a product of the evolutionary development of a brain-based capacity focusing on emotional sharing. Hence, individuals tend to have the most empathy for others who look or behave like them, for others with whom they share common experiences, or for those who share a common goal with them. These instances can often be observed in communities, schools, sports teams, and religious communities. Furthermore, various theories have tried to explore and explain the mechanism of empathy (Preckel et al., 2018; Wondra & Ellsworth, 2015; Mccaffree, 2019). Among the existing frameworks, the Moral Development Theory of Hoffman is suggested to have provided the most comprehensive explanation for the mechanisms of empathy (Wondra & Ellsworth, 2015). As Hoffman (2000) explained, empathy is described as a product of either of the five internal mechanisms that govern an individual's disposition to relate with another individual. These five mechanisms are mimicry, classical conditioning, direct association, mediated association, and role-taking.

1.1. Objective of the Study

Assessing empathy has been a topic of interests since it has been suggested to be highly associated with various attitudinal dispositions such as expression of aggression (Atramentova et al., 2017) accurate emotional recognition, and sensitivity (Israelashvili et al., 2020), effective listening skills (McKenna et al., 2020), self-other differentiation (Eukland & Meranius, 2019), altruism (Riess, 2017), self-efficacy and optimism (Dionigi & Gremigni, 2020) and resiliency (Devecchi & Guerrini, 2019). Zaki (2018) has also concluded that empathy is highly related to morality and its development and empathic individuals are generally more likely to show moralistic attitudes and actions, behave in a socially acceptable manner, and engage in prosocial behaviors.

Hence, the current study aims to develop an empathy scale that can help school counselors, psychologists, and other mental health professionals further assess the empathy of students that may serve as a basis for designing programs and interventions that will foster their empathic dimension. Furthermore, the development of an empathy scale will also be of great help in contributing to the growing empirical knowledge in the field of social sciences and can be of support to advance discoveries and researches about empathy and related constructs.

2. Materials and methods

2.1 Population and Respondent

The participants of the study were composed of 204 tertiary students of the National University Philippines – Bulacan campus, ages 18 to 21, sampled conveniently

2.2. Measurement and Instrumentation

The researchers made use of two instruments in establishing the psychometric properties of the NatU ES: the Toronto Empathy Questionnaire (TEQ) and the Multidimensional Emotional Empathy Scale (MEES).

Toronto Empathy Questionnaire. The Toronto Empathy Questionnaire (TEQ) is a 16-item 5-point Likert scale designed to measure the unidimensional behavioral and interpersonal sensitivity of individuals and is consists of six

subscales: perception of the emotional state of others, emotional comprehension in others, behavior sensitivity, sympathetic physiological arousal, altruism and higher order of empathic responding. To support its psychometric properties, the TEQ was correlated with the self-report measure of empathy and an Autism Scale and produced r values of .80 and -.33 respectively, proving that the TEQ is highly likely to measure the construct of empathy. Its reliability was established by determining its coefficient of internal consistency and stability, which are .87 and .81 respectively (Sprenge et al., 2009).

Multidimensional Emotional Empathy Scale. The Multidimensional Emotional Empathy Scale (MDEES) is a 30-item 5-point Likert scale designed to measure the ability to recognize and understand emotions experienced by others. The scale consists of six dimensions: suffering, positive sharing, responsive crying, emotional attention, feel for others, and emotional contagion. The reliability of the MDEES was derived by calculating its internal consistency ranging from .17 to .66 scattered throughout the six factors and has a mean of .42. For validity, the six subscales of the MDEES were all significantly correlated with one another, with an r -value ranging from .15 to .66 with a mean of .41 (Caruso & Mayer, 1998).

2.3. Data Analysis

To establish its validity, expert validation was primarily done by the researchers, and the Content Validation Ratio (CVR) for each item was computed. Computing the CVR will give an idea of whether a certain item is valid, content-wise, and is suggested to be a powerful tool in establishing validity (Ayre & Scally, 2014). Those with satisfactory CVR were retained and afterward validated by convergent validity testing. Convergent validity will dictate whether a certain test or scale measures the same construct as other tests purporting to measure the said same construct (Kaplan & Sacuzzo, 2017). The Pearson product-moment correlation was utilized to calculate the NatU ES convergent validity by correlating it to the garnered scores of the TEQ and the MDEES and their respective sub-scales. To establish its reliability, on the other hand, the coefficient of stability and the coefficient of internal consistency were estimated. The former was estimated since such an estimate is deemed fit when one is evaluating the reliability of a test or scale that is designed to measure something relatively stable over time, such as a personality trait. Furthermore, the coefficient of internal consistency is also estimated because such an estimate will tell if the items in a given test or scale are consistent with one another, with regards to the construct that is being measured (Cohen & Swerdik, 2014; Kaplan & Sacuzzo, 2017).

3. Results

The content validity of the present scale was established by means of expert validation. The validators are composed of three Guidance Counselors, two Psychologists, and three Psychometricians. Given that there are eight validators, Cohen and Swerdik (2014) suggested that a Content Validity Ratio (CVR) of at least .75 must be established for an item to be considered valid. Upon evaluating, only sixteen items attained the necessary CVR value and are accepted to be valid.

Table 1: Content Validity Ratio (CVR) Testing Result.

#	Item	CVR	Decision
1	Other people's feelings easily affect me.	0.25	Reject
2	When my friend is happy even though my day seems not, I pretend that I am also happy.	0.75	Accept
3	I also feel scared when my friends are feeling scared about something.	0.25	Reject
4	I am in teary eyes when I am seeing someone cry.	1	Accept
5	When someone is angry at me, I also become angry with them.	0	Reject
6	Observing someone been surprised, I tend to be curious.	0	Reject
7	My mood goes down when I am with people who feel depressed.	0.5	Reject
8	Watching people on National TV who were involved in cruelty, I felt I am too.	0.25	Reject
9	I feel fulfilled when I see my friends smiling.	0.5	Reject
10	I tend to shout in shocking situations.	-0.25	Reject
11	I withdraw from group works when there is bullying involved.	0.5	Reject
12	I look forward to surprises whenever there is a Birthday.	0.25	Reject
13	I can feel the emotions of my friends just by reading their texts/messages to me.	1	Accept
14	I feel alone when I see families saying goodbye in airports.	0.25	Reject
15	Going to new places with my friends excites me.	0.5	Reject
16	I feel sad when I visit hospitals.	0	Reject
17	I tend to hate the things that my friends hate.	-0.25	Reject
18	I feel sad when attending funerals.	0.75	Accept
19	I enjoy seeing those close to me be successful in their tasks.	1	Accept
20	I giggle when I see other people's pets.	0	Reject
21	I can feel the heartache of ex-couples who broke up without closure.	0.75	Accept
22	I can tell if my friend is sad just by observing him/her.	0.75	Accept
23	When I hear news about parents' separation, it makes me question who's at fault.	0.25	Reject
24	When I see someone being bullied, I feel sad.	0.75	Accept
25	When listening to songs, I often recall memories associated with it.	0.25	Reject
26	I understand how my friends are feeling even before they tell me.	-0.25	Reject
27	I usually recall joyful memories when I see a family sharing a meal.	1	Accept
28	I get delighted if I see someone helping another person.	1	Accept
29	I feel inspired when I see people giving gifts to one another.	1	Accept
30	I get mad when I see someone being treated disrespectfully.	1	Accept
31	In group activities, I feel confident because I am important.	0.25	Reject
32	When reading a novel, I can relate to the emotions being conveyed by the author.	0.5	Reject
33	When watching films about friendship, I feel delighted.	0.5	Reject
34	I am easily frightened by horror stories.	0.25	Reject
35	When my friends are arguing, I feel the weight of the intensity of the situation	0	Reject
36	I feel terrified when I read news about natural calamities.	0.5	Reject
37	Stories about betrayal make me unhappy.	0.25	Reject
38	I feel like crying when watching a sad movie.	0.5	Reject
39	When I read poetry about love addressed to another person, I can also feel the love.	0.5	Reject
40	News stories about injured children distress me.	0.25	Reject
41	I feel worried when my friends fail an exam that I am about to take.	0.25	Reject
42	I sympathize with the problems experienced by Person-With-Disabilities.	0.75	Accept
43	I am proud of my friend's achievements.	0.75	Accept
44	I grieve for my friend who lost a loved one.	1	Accept
45	I feel obligated to help people that are less able in life.	0	Reject
46	I tend to also cry when I see my close family members crying.	0.5	Reject
47	I get angry to someone who hurts my friend.	0.5	Reject
48	If my friends get overwhelmed in a certain situation where I am not concerned with, I tend to panic.	0.25	Reject
49	I tend to enjoy the activities my close friends enjoy.	0.75	Accept
50	I feel disturbed by other people's misfortunes.	0.5	Reject

The construct validity of the scale was established by indicating its convergent evidence. The sixteen valid items of the NatU ES, as per content validation, were correlated with the TEQ and MDEES and generated a satisfactory r-value. As Kaplan and Sacuzzo (2017) suggested, an r-value of at least .50 is enough to claim that there is a significant correlation between two tests designed to measure the same construct and that the test-in-development is commendable

in measuring what it is purported to measure. Furthermore, the NatU ES correlated positively with the subscales of the MDEES and the TEQ. The result of the validation study is shown in the tables below.

Table 2: Construct Validation Result.

	MDEES	TEQ
NatU ES	.71	.59

Notes. N=204, p<.001

Table 3: NatU ES Correlation with the MDEES subscales and TEQ Subscales.

MDEES Subscales		TEQ Subscales	
Suffering	.69	Perception of emotional state of others	.27
Positive Sharing	.54	Emotional comprehension in others	.47
Responsive Crying	.38	Behavior sensitivity	.23
Emotional Attention	.25	Sympathetic physiological arousal	.64
Feel for Others	.38	Altruism	.59
Emotional Contagion	.39	Higher order empathic responding	.51
Suffering	.69	Perception of emotional state of others	.27

Notes. N=204, p<.001

To establish the reliability of the NatU ES, its internal consistency was computed through split-half reliability testing and Cronbach's alpha estimation. The scale's split-half correlation is at .75 while the Cronbach's Alpha is at .83. The test-retest reliability of the NatU ES was then examined by re-administering the scale to the same pool of participants six weeks after its first administration and produced an estimate of .89.

Table 4: Reliability Estimates.

Estimates	
Split-Half Correlation	.75
Cronbach's Alpha	.83
Stability	.89

Notes. N=204, p<.001

4. Discussion

The present study focused on the initial development and validation of the NatU Empathy Scale (NatU ES); a tool designed to measure empathy. Originally, the NatU ES is composed of fifty items. The initial items were subjected to experts' validation and the Content Validity Ratio (CVR) of each item was computed. The CVR pertains to the ratio of the validators who agreed that a certain item is relevant to the construct being measured. The acceptance value for CVR varies with the number of validators available. The higher the number of validators, the lower the required CVR will be since greater levels of content validity exist as larger numbers of panelists agree that a particular item is essential (Cohen & Swerdik, 2014). For the current study, a CVR of .75 must be met by to be considered valid, with regards to the framework it was derived, and only sixteen items met this criterion. The suggested value also ensures that the agreement of the validators is unlikely due to chance, further proving the validity of the accepted items. Furthermore, the NatU ES exhibited a significant positive correlation with the MDEES and TEQ, and its various subscales. As Kaplan and Sacuzzo (2017) suggested, generating a significant positive correlation between a psychometrically established test and a test-in-development is enough to claim that the latter is also measuring the same construct that the former is purported to measure. Hence, results suggest that the NatU ES measures the same construct of empathy that the MDEES and TEQ are designed to measure.

In terms of reliability, the scale's Cronbach's Alpha, which is considered to be the mean of all the possible split-half of a test, was computed and generated a significantly positive value which indicates strong internal consistency. The estimate of stability of the NatU ES was also examined by means of the test-retest reliability method and result suggests that the scale is capable of generating scores that signify the internal validity of a test and ensures that the

scores obtained are both representatives of the construct of interest and stable over time. Overall, the reliability estimates suggest that there is a coherence between each and every item of the NatU ES with regards to its unidimensionality, which further proves its capability to generate consistent scores with minimal standard error.

In conclusion, the present findings suggest that the NatU ES has significant and statistically acceptable psychometric properties.

5. Conclusion

The NatU Empathy Scale is a scale designed to measure empathy. The proposed scale is validated by experts in the field and the items considered essential are subjected to construct validity testing by convergent estimation. The estimate of internal consistency and the estimate of stability of the NatU ES was also established and produced admissible results. Overall, it can be suggested that the NatU ES has good psychometric properties.

6. Acknowledgments

The researchers would like to acknowledge the support of the National University Philippines in making this study possible.

References

1. Atramentova, L., Luchko, E., & Filiptsova, O. (2018). Impact of migration on the expression of aggression and empathy in urban populations. *Egyptian Journal of Medical Human Genetics*, 19(2), 83-86. <https://doi.org/10.1016/j.ejmhg.2017.06.004>
2. Ayre, C., & Scally, A. J. (2014). Critical values for Lawshe's content validity ratio: revisiting the original methods of calculation. *Measurement and Evaluation in Counseling and Development*, 47(1), 79-86. <https://doi.org/10.1177/0748175613513808>
3. Cohen, R. J., Swerdlik, M. E., & Phillips, S. M. (2014). *Psychological testing and assessment: An introduction to tests and measurement*. Mayfield Publishing Co.
4. Dionigi, A., Casu, G., & Gremigni, P. (2020). Associations of self-efficacy, optimism, and empathy with psychological health in healthcare volunteers. *International Journal of Environmental Research and Public Health*, 17(16), 6001. <https://doi.org/10.3390/ijerph17166001>
5. Dionigi, A., & Guerrini, L. (2019). Empathy for resilience. In *Around the Campfire-Resilience and Intelligence, Cumulus Conference Proceedings Rovaniemi 2019* (pp. 594-607). University of Lapland/Cumulus International Association of Universities and Colleges of Art, Design and Media. Aalto University.

6. Eklund, J. H., & Meranius, M. S. (2021). Toward a consensus on the nature of empathy: A review of reviews. *Patient Education and Counseling*, 104(2), 300-307. <https://doi.org/10.1016/j.pec.2020.08.022>
7. Hoffman, M. L. (2000). *Empathy and moral development: Implications for caring and justice*. Cambridge University Press.
8. Israelashvili, J., Sauter, D. A., & Fischer, A. H. (2020). Different faces of empathy: Feelings of similarity disrupt recognition of negative emotions. *Journal of Experimental Social Psychology*, 87, 103912. <https://doi.org/10.1016/j.jesp.2019.103912>
9. Kaplan, R. M., & Saccuzzo, D. P. (2017). *Psychological testing: Principles, applications, and issues*. Nelson Education.
10. Lamm, C., Rütgen, M., & Wagner, I. C. (2019). Imaging empathy and prosocial emotions. *Neuroscience letters*, 693, 49-53. <https://doi.org/10.1016/j.neulet.2017.06.054>
11. McCaffree, K. (2020). Towards an integrative sociological theory of empathy. *European Journal of Social Theory*, 23(4), 550-570. <https://doi.org/10.1177/1368431019890494>
12. McKenna, L., Brown, T., Williams, B., & Lau, R. (2020). Empathic and listening styles of first year undergraduate nursing students: A cross-sectional study. *Journal of Professional Nursing*, 36(6), 611-615. <https://doi.org/10.1016/j.profnurs.2020.08.013>
13. Preckel, K., Kanske, P., & Singer, T. (2018). On the interaction of social affect and cognition: empathy, compassion and theory of mind. *Current Opinion in Behavioral Sciences*, 19, 1-6. <https://doi.org/10.1016/j.cobeha.2017.07.010>
14. Riess, H. (2017). The science of empathy. *Journal of patient experience*, 4(2), 74-77. <https://doi.org/10.1177/2374373517699267>
15. Spreng, R. N., McKinnon, M. C., Mar, R. A., & Levine, B. (2009). The Toronto Empathy Questionnaire: Scale development and initial validation of a factor-analytic solution to multiple empathy measures. *Journal of personality assessment*, 91(1), 62-71. <https://doi.org/10.1080/00223890802484381>
16. Wondra, J. D., & Ellsworth, P. C. (2015). An appraisal theory of empathy and other vicarious emotional experiences. *Psychological Review*, 122(3), 411. <https://doi.org/10.1037/a0039252>
17. Zaki, J. (2018). Empathy is a moral force. *Atlas of moral psychology*, 49-58.