Development of Love for Nature Scale

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ABSTRACT

This topic was chosen to learn the behavior of people in the spring season, greenery approaches when flowers blossom and spread joy. How nature influence their behavior. Many researchers have found that spending time in nature can benefit with mental health problems such as anxiety and sadness. Without a doubt, Nature is the best medicine for curing any ailment or human behavior (mental health). Other than this, how many people agree with nurture too. In-depth interviews method was use in the study to understand behavior of people. Total 120 students interviewed from Lahore Punjab with age range 60-85. Results showed that total 32 items of love for nature scale (LNS) with four factors identified on the bases of EFA. It based on Likert scale. The internal reliability of the four factors was good that is .60 to .83. Inter-correlation of the subscales showed that all factors are inter-correlated however; aesthetic love indicated on-significant relationship with seasonal factor. LNS based on Pakistani culture so it may provide help on indigenous bases and for researchers to identify factors linked with nature and its relatedness with humans. Further studies are required to validate LNS and to investigate any other factor that may link with nature and human behavior. The Quran could utilize as guidance for those who are suffering emotional pain, and it attempts to help them attain an expressive quality of life. 'There is no disease that Allah has created, except that He also has created its treatment'
(Sahih Al-Bukhari, book # 71, Hadith 582, narrated by Abu Huraira) (Amir, 2022).

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1.   Introduction

The spectacles of the physical world mutually including plants, animals, the landscape, and other topographies and products of earth, as opposite to humans or human creation (Steiner, 2002). Mental health is a state-run of well-being in which an individual comprehends his or her own capabilities, can deal with normal stresses of life, can work efficiently, and is able to make an involvement to his or her community (World Health Organization WHO). Nurture usually used as the effect of exterior factors after conception. It includes the produce of exposures, life experiences and learning on an individual (McLeod, 2007). The Islamic idea of nafas underlines the inner self is deep and complicated composition. Sigmund Freud used all the id, ego, and superego in the early 1900s to characterize similar states. The nafas, or self, is described in the Quran as acting in one of three conditions: nafas al-ammara (commanding self), nafas al-lawwama (accusatory self), and nafas al-mutmainna (mutual self) (peaceful self). The Quran reveals how these conditions govern and dominate us, imposing our mentality and influential us what to do. The Quran recommends learning and working relaxation exercises. When it is in charge, our ideas is distorted, causing us to take things personally, see the whole thing in a

negative way, and have faith in that nothing can be done to progress situations *(Samah, 2018). Problem statement is to identify the love for nature among Pakistani people.*

1.1. Significance of the Study

This was first study that developed scale of love for nature and nature connectedness with different factors in Pakistan. This also highlights the Islamic perspective that linked with human love and nature connection. This study highlights the experiences of participants, shared values of culture and different domains of love for nature in Pakistan. By exploring, the transcript of interviews major factors contributing to the importance of nature and its effect on health also highlighted.

1.2. Objectives of the Study

By comparing the existing knowledge about human love for nature and the lack of cultural scale to measure love of nature in Pakistan, this study planned to develop and validate a scale to measure love for nature in Pakistani society.

Barrable and Booth (2020) conducted a research to test the relationship for nature connectedness with eudaimonic well-being of individuals and their findings suggested that visiting nature nursery increase the level of connection with nature. The factor that contributes to strong bond with nature in children was parental bond with nature and the time they spend in nature. This reveals that people with higher interest in nature tend to have higher connection and love for nature with high eudaimonic well-being. Their personal growth tends to improve during their visits to nature nursery (Pritchard, Richardson, Sheffield, & McEwan, 2020). Another study conducted by Martin et al. (2020) where the results have clear indication regarding non-significant relationship between living in green neighborhood with sustainability and well-being of those individuals. However visiting such places once a week, which are full of nature, have positive connection with good health of individuals and linked with higher level of pro-environmental behaviors (PEB). Another factor that contributes to nature love and PEB was watching and listening to documentaries based on nature (Martin et al., 2020).

Lambert et al. (2020) narrated that nature love and connectedness have a significant place, key metric and importance in basic human psychological need, desires and assessment of well-being. Another research indicated that noticing the nature is the best way to increase human connectedness and love. Activities of visiting nature increase the ration of people care for nature and connectedness to nature accordingly (McEwan, Richardson, Sheffield, Ferguson, & Brindley, 2019). The more people notice nature the more they have high well-being and also increase in their pro-nature behavior as compared to those who only visit nature once a while (Richardson, Hamlin, Butler, Thomas, & Hunt, 2022). Another study identify that use of sensory engagement based activities with wildlife for noticing and enjoying nature have positive and strong association with connection to nature than those who simply spend time in nature. Studying or reading about nature, visiting nature for short period of time, collecting shells, seeing nature from far tend to have no connection with increasing nature connectedness and love (Richardson et al., 2022).

Dong et al. (2020) identify different aspects of nature that indicate positive effect on buying green, recycling to protect nature and reusability of things to save nature. Different aspects of nature include passion, intimacy and commitment of individuals with nature in general. Connectedness to nature improved with the help of inspiration of purchasing green items and recycling after using products. According to Whitburn, Linklater, and Abrahamse (2020) nature provokes people to improve their PEB as compared to people who spend less time in nature. Nature has great influence on PEB engagement and on their conversation in general. People who visit nature showed connectedness by improving their PEB and they enhance their ability to perceived value for cultural services of ecosystem. PEB have indirect link with place and event attachment for people who love spending time in nature (Zhang, Cai, Bai, Yang, & Zhang, 2023).

According to Sreen, Dhir, Talwar, Tan, and Alharbi (2021) people who are conscious about their heath tend to increase their time spending in nature and consuming products made of natural ingredients. They showed their love for brands that use natural way to making products. This strategy to use natural products generate positive attitude toward those brands. Watching videos of immersive nature develop sense of engagement in environmental behaviors and spatial participation to environment than watching regular videos on nature (Breves & Heber, 2020). Another source of promoting love for nature was learning the literary work and it further provide

awareness to people to nurture the nature (Nahdhiyah, Rahman, Makkah, & Herawaty, 2022). Different researches been conducted to identify nature connectedness with human behavior in all over the world but there were few researches that talk about Pakistani culture and religion of Pakistani people. To identify and measure the love of Pakistani people for nature this study developed a 32 items love for nature scale and it will provide help for Pakistani researchers to explore different aspects related to human love for nature and how it affects their health.

2.   Method
2.1.   Research Design and Sample
It is a qualitative research method where in-depth interviews used to gather information from participants. We planned the questions that might ask to the participants in a variety of ways using this strategy. The questions made up in an ad hoc manner. By conducting this method, we were able to gain a lot of new information from the participants through their comments, which have really aided us in enhancing our knowledge. We conducted four interviews with university students to learn about their perspectives on how nature influences our behavior and how important it is for mental health. A sample of 120 participants selected from Lahore Pakistan. Non-probability based convenient sampling strategy was use to select participants. Both male and female students selected to participate in research. Students from University of Management and Technology took part in the research. Students above 18 years took part in the interviews.

Table 1: Demographic Characteristics of Love for Nature Scale (N = 120)

Variables	*f*(%)
Gender	
Male	67(55.8)
Female	53(44.2)
Education Level	
Matric	17(14.2)
Intermediate	10(8.3)
Bachelors	46(38.3)
Master	40(33.3)
PhD	6(5.0)
Nil	1(.8)
Marriage Type	
Arranged Marriage	74(61.7)
By Choice	23(19.2)
Both	23(19.2)
Income	
25000-35000	23(19.2)
36000-45000	7(5.8)
46000-55000	19(15.8)
56000-65000	8(6.7)
Above 65k	52(43.3)
Nil	11(9.2)
Belongs to	
Rural	32(26.7)
Urban	88(73.3)
Spouse Belongs to	
Rural	34(28.3)
Urban	86(71.7)
Spouse Education	
Matric	21(17.5)
Intermediate	22(18.3)
Bachelors	46(38.3)
Master	29(23.3)
PhD	3(2.5)
No. of Children	
1-2	34(28.3)
3-4	51(42.5)
5-6	26(21.7)
7-8	9(7.5)
Family Type (Spouse)	
Nuclear	65(54.2)
Joint	55(45.8)

2.2. Measures

2.2.1. Demographic Sheet

This sheet includes the information regarding the personal information of participants as age, gender, education, monthly income, family type, residence etc.

2.2.2. Structured Interview

Questions were open-ended and were unstructured. We explained the questions where they felt difficulty in understanding and answering them in a better way. The interview questions were as following:

- Are you nature lover?
- Favorite places that you had visited once and why?
- How do you manage your stress from nature?
- Do you love music while enjoying nature?
- Do you love chirping of birds and sunrise scene?
- Which season do you love according to your perspectives and Why?
- Have you ever planted plants at homes? What do you feel?
- Which flower do you love the most and why?
- Favorite destination spot, which you haven't visited yet and wanted to visit once and why?
- Share your thoughts on rain and snowfall. Do you ever-experience snowfall in life, then what was your reaction? How you feel the rain?
- How do you feel that nature really affects human behavior, explain?
- Don't you think that nurture also affect human behavior as the nature does and how?

2.2.3. Love for Nature Scale

This scale was developing by the researcher and it is consisting of total 32 items with four subscales (13 items for aesthetic love, 8 items for individual well-being, 6 items for plantation and 5 items for seasonal). It is developing to identify the loving behavior and connectedness of humans towards nature. It has response rate ranging from strongly agree to strongly disagree (1-4). This scale is suitable for age range 18 onward. Internal consistency of the subscales showed overall good Cronbach's value from .60 to .83. Higher score on each scale shows higher level of love for that scale.

3. Results

The researches questions explained with their theme are given as follow:

3.1. Are you a nature lover?
Theme

Everyone is a big fan of nature and admires it a lot. People take many photos of nature and share them on social media platforms like Instagram and others. People enjoy photographing the sun, rain, flowers, and other natural phenomena. You can refresh yourself by going to the park, and we can do nature paintings.

3.2. Favorite places that you had visited once and why?
Theme

Many individuals adore northern locations like Kashmir, Taif, and Narran Kaghan, however other people also adore village life. The high mountains, good weather, and stunning scenery that comfort mentally and physically love to visit northern places. Villagers on the other hand gave the daybreak, beautiful green fields, and the freshness that replenishes us.

3.3. How do you manage your stress from nature?
Theme

One of the students believed that the beauty of nature could not manage tension, but he controls his stress by remembering Allah Almighty and reciting the Quran. As Islam teach us the greatest approach to deal with stress. Even if you have ever seen a physiotherapist, they will advise you to adopt the same postures that applied when praying. Some people de-stress by looking at beautiful surroundings and immersing themselves in a fantasy world. Some people believe that you should go to the park and enjoy Allah's lovely creatures if you are bored with studying. Some people enjoy reading novels in lovely weather while looking the surroundings or listening to the rain.

3.4. Do you love music while enjoying nature?
Theme

Yes, many people prefer listening to music when out in nature. However, some people prefer not to listen to music while enjoying nature. Their perspective is that people should appreciate nature by imagining it and refreshing themselves, rather than listening to songs or music. Some individuals believe that listening to music offers you a sense of beauty, relaxation and romance.

3.5. Do you love chirping of birds and sunrise scene?
Theme

In this theme, everyone enjoys nature. Some people feel satisfied by rising early in the morning and offering Fajar prayer, reciting Holy Quran daily and then viewing the landscape while walking on the terrace; others enjoy by going for a morning walk and feeling so refreshed that they strive to devote their time positively throughout the day. Some people claim that they are of the view because they are not morning people, but they would absolutely adore it if they could.

3.6. Which season do you love according to your perspectives and Why?
Theme

Winter is a season that most of the people enjoy. In the summer, some people enjoy flowers blossom. In winter, they enjoy snowfalls and rains; in autumn, they enjoy the dried fallen yellow leaves on the ground and in spring, everyone loves and admires the flowers that bloom and spread their fragrances everywhere, as well as the pleasant weather. However, in Pakistan when summer and winter approach, extremism reigns supreme and some individuals despise winters as much as they despise summers. Summer reach its apex due to excessive perspiration and no one can enjoy it or even meet with others. The weather is incredibly peaceful and easygoing in the winter.

3.7. Have you ever planted plants at homes? What do you feel?
Theme

People enjoy having plants in their homes. Many people have planted them as well, believing that when you enter your home and see greenery and flowers everywhere, it gives you a refreshing mind-blowing view; also, birds love to come to these places and their chirping give refreshing vibes. Butterflies are the coolest and most beautiful things that no one can ignore. Many believe that plantation is not against nature, cultivate plants produce oxygen and absorb CO_2 carbon dioxide. More plantations reduce flooding while providing shadows against the scorching sunshine.

3.8. Which flower do you love the most and why?
Theme

Red roses are popular because they represent fragrance, attractiveness, romance, beauty, being for someone special, and being good for the skin. The smells of night flowering Jasmine gave positive vibes and improve the stress.

3.9. Favorite destination spot, which you haven't visited yet and wanted to visit once and why?
Theme

The participants are showing their place attachment towards these Northern areas, as well as hilly terrains such as *Kashmir and Fairy Meadows* in Pakistan and *Taif* in Saudi Arabia because they are popular tourist destinations. They wanted to visit those places repeatedly to feel relaxed and energetic. The vast majority of people wish to visit such locations to explore the beauty of nature. Some folks, however, wished to go to Murree and Islamabad to see the mountains.

3.10. Share your thoughts on rain and snowfall. Ever experienced snowfall in life, what was your reaction? How you feel the rain?
Theme

People enjoy both rain and snowfall, but only a few have actually seen snowfall. As a result, those who visited such places had a good time, and some of them thought it was too chilly. On the other side, other people are still planning visits to experience snowfall for the first

time. Many individuals enjoyed hail fall in different part of the country. Everyone enjoys the rain, and everyone admires such weather. They love to play, eat fried foods with tea, and generally enjoy themselves. In other opinion, rainy weather changes sentiments and emotions. Sitting in the rain reduces aggression and stress levels, which has an impact on your mental health and growth. The dewdrops leave an indelible impression.

3.11. How do you feel that nature really affects human behavior, explain?
Theme

Yes, nature has a significant impact on human conduct. When you sit in a room for a long time, you become stress and have a headache. When you get out for some fresh air, your mental level improves and you work more cognitively, and there are no mood swings.

3.12. Don't you think that nurture also affect human behavior as the nature does and how?
Theme

Because many respondents were unfamiliar with the concept of nurture, some of them responded that it could be a factor in influencing human behavior, but they had never experienced it and had no knowledge of it. Some of them said that nurture influenced by one's environment. When you are with someone special, you will never be bored or lonely, which has an impact on human conduct. Different cultures, interests, and familial backgrounds have a significant impact on it. Nature, on the other hand, heals your wounds and is at the center of your heart.

Nature has a way of relaxing your physical body, settling your racing mind, and infusing your soul with the spirit of the Universe. Nature is a true refuge. People all over the world is nature loving and they are so much imaginative that while conducting their interviews they were unable to handle their emotions. They believe that nature is beauty, which can manage your all tensions. Allah Almighty created nature and people think that by believing in Him you will be free of all tensions and stress in life. Everyone loves to enjoy nature and believe that in effecting human behavior nurture also plays an important role. We are born with a definite personality, but it progresses over time as outcome of the effect of our situations, such as the people we hang out with and the general amount of nutrition in our growing environment. Different castes, religions, traditions had impacts on human behavior. The first step towards the construction of nature scale was to find EFA (Exploratory Factor Analysis) in nature and compute its factors.

3.13. Exploratory Factor Analysis (EFA)

Each item was included in a specific factor on the bases of higher factor loading value and the reliability of subscales. Table 3 showed the Cronbach's alpha for above factors. The results showed that the factor loading value for all the items was above .30 except than item no 33 (see Table2). The sampling adequacy value of Kaiser-Meyer-Olkin measure for all items was higher than 0.6. However, value of sphericity showed significant results ($\chi 2 = 1722.98$, $p < .00$). For analysis of principal component results explained the compute values for all the items of short version of love for nature scale here, the value of Eigen revealed that the first four factors explained 15.04%, 10.63%, 10.53% and 7.67% of the variance respectively. The four-factor solution described 43.88% total variance.

Overall, all items were included in the four factors and only one item was excluded because its factor loading value was less than 0.30. It was clear that 32 out of the 33 items formed a four-factor structure of scale. First factor was aesthetic love because the components were discussed so aesthetically which include the feelings when nature is seen and which things excite them being with nature. Plantation was the second factor that includes the cultivation of plants and their effects on human. The third factor derived was individual well-beings based on how nature affects the individual well-being and how they relax themselves personally with it. The fourth factor was seasonal factor, which explained how different seasons have its impact on nature and how people perceive the beauty of each season with nature. The communalities of the factors considered are generally quite low, with one factor, aesthetic love that shared only a modest amount of variance (15.042%). This can mean that the variables selected for this analysis only have a tenuous relationship with one another.

Table 2: Nature factor analysis scale (factor-analysis table) NAT (N=120)

Sr.		Aesthetic love	Plantations	Individual Wellbeing	Seasonals
1	I am a nature lover.			0.73	
2	I enjoy nature by photographing and painting.			0.45	
3	Nature comforts me mentally and physically.			0.74	
4	Daybreak and green fields refresh me.			0.60	
5	Religion teaches greatest approach to deal with stress.			0.40	-0.26
6	I can manage stress as being a nature lover.			0.69	
7	Music helps me in enjoying nature.	0.32			
8	It's better to enjoy nature by imagining and refreshing rather than listening to music in a room.			0.43	
9	Music offers me a sense of beauty, relaxation and romance.	0.37	-0.11		
10	I enjoy morning activities of nature.			0.60	-0.12
11	I love winters.				0.52
12	I enjoy rain and snow falls.				0.59
13	I enjoy dried yellow fallen leaves in autumn.				0.61
14	I love and admire fragrances of blossoming flowers.		0.54		
15	I do not enjoy summers.			-0.15	0.57
16	I do not love to meet someone in hot summer because it reaches to its apex due to excessive perspiration.	-0.11		-0.15	0.48
17	I love flowers in summer.		0.42	-0.11	
18	Cultivating plants at home gives me a refreshing and mind-blowing view.		0.63		
19	Cultivating plants produces oxygen and absorb carbon dioxide (CO2).		0.77		
20	I think more plantation reduces flooding.		0.65		
21	Plantation provides shadows against the scorching sunshine.		0.75		-0.16
22	Red roses are famous for fragrances, attractiveness, romance, beauty, being for someone special and good for skin.	0.49			-0.22
23	Visiting to Northern areas as well as hilly terrains provide me a very peaceful and calm moment.	0.55			
24	Sitting in rain reduces my stress level and aggression.	0.75			
25	Sitting in rain has an impact on my mental health and growth.	0.76	-0.16		
26	Rainy weather changes my sentiments and emotions.	0.74			
27	Dew drops leave an indelible impression on me.	0.70			
28	Nature has a significant impact on my conduct.	0.65			-0.34
29	Nature improves my mental health.	0.58			-0.28
30	Nature helps me to work cognitively.	0.56			-0.47
31	Being with someone has an impact of nurture on human conduct.	0.59			
32	Nature heals my emotional wounds.	0.42			

Note 4 Components extracted and suppressed by.>10

Cronbach's Alpha was measured for four subscale of love for nature scale and it showed that all scales except plantation has alpha value higher than .50 that is overall good value. In other words, it means all items and the subscales of love for nature scale measure the same thing as it mentions.

Table 3: Psychometric Properties of Love for Nature Scale

Variables	k	M	SD	α	Range	Kurtosis
Aesthetic Love	13	23.60	5.80	.83	13-47	1.34
Plantation	6	11.45	2.40	.79	6-18	.32
Individual well-being	8	12.73	3.19	.74	8-21	-.54
Seasonal	5	10.55	2.62	.60	5-17	-.37

Table 4: Inter-Correlation between Love for Nature Scale and its Subscales (N= 120)

Factors	n	M	SD	2	3	4
Aesthetic Love	13	23.60	5.80	.40***	.28**	.14
Plantation	6	11.45	2.40	-	.28**	.18*
Individual well-being	8	12.73	3.19		-	.03
Seasonal	5	10.55	2.62			-

***p<.001

Inter-correlation of the subscales showed that there was significant relationship between all subscales. However, there was non-significant relationship between aesthetic love and seasonal and between individual well-being and seasonal.

4. Discussion

Nature, without a doubt, created by Allah Almighty and has a significant impact on our environment. Nature is Allah Almighty's blessing that distributes positivity throughout the world. Human behavior greatly influenced by nature as well. EFA indicated total four factors that cover human love for nature and how they showed their connectedness. Well-being proved the part of human love for nature as Martin et al. (2020) suggested that visiting nature and green places once a week improve human health. According to the results plantation was another factor that contribute to the love of humans towards nature and hence linked with positive impact on health. Greenery, steep terrain, tranquil forests, glaciers, and other natural features appeal to them. Some people enjoy visiting hilly locations in the north to explore nature. Some people take pleasure in the weather while being surrounded by nature. Our findings do not supported by Martin et al. (2020) who found that living in greenery neighborhood has no significant association with well-being. Richardson et al. (2022) supported the third factor of LNS which means noticing and seeing nature improve connectedness and refresh human mind. Seasonal factor also contributes to the connectedness with nature in general.

5. Conclusion

This study conducted to develop and validate love for nature scale. Total four factors with 32 items generated on the base of factor analysis. These four factors include Aesthetic love, Plantations, Individual Wellbeing and Seasonal. Inter-correlation of the subscales showed that all factors are inter-correlated however; aesthetic love indicated on-significant relationship with seasonal factor. Overall, all these factor has connection with enhancing connectedness to nature in people.

5.1. Limitations

The writings would be better if the topics had broad connotations so that other people could understand how they feel about the subject. It was a little difficult for us to conduct interview of participants because everyone was preoccupied with final exams even we were also in the same situation and they were unwilling to give us their time due to paucity of time. This scale need to validate by comparing it with other scales on nature. Only students selected for interviews for detailed information other age groups and profession should add. Sample size was very small to develop norms for this scale it is important to administer this scale on a large sample.

5.2. Implications

It will provide help for Pakistani researchers to explore different aspects related to human love for nature. How it affects their health. Environment committee can use this scale to identify the processes and factors that can elaborate and enhance the growth of plantation in Pakistan. This will also help to highlight the contributing factors and de-motivational aspects. This study can provide guidance clinical and counseling centers for improving the mental state of people by identifying the causing factor for hating nature. Psychologist can use this study to develop interventions based on natural techniques.

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