Comparative Study

Effects of Morningness-Eveningness Orientation on Life Satisfaction and Big Five traits in Males and Females: A Comparative Study

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ABSTRACT

Chronotype is an important variable to understand since it plays a key role in influencing many other factors like personality, temperament, perceived well being, etc. The current study is a comparative study aimed at measuring gender differences amongst males and females for morningness-eveningness, life satisfaction and the big five factor personality traits. The sample(n=77) consists of young adults with age ranging from 19 to 25. The sample population comprises 57.1% females and 42.9% males. Standardized tools were utilized to measure the variables. The results indicated that there are significant differences between males and females for the variables morningness-eveningness and conscientiousness. Further, the study also found significant relationships between chronotype and some of the Big Five Factor traits. Although, no significant relationship was found between life satisfaction and chronotype. Further research is suggested on the above-mentioned variables due to the relatively ambiguous effects of chronotype on well being and life satisfaction, and the under-explored nature of the research conducted on the Indian young adult population.

Keywords: *Morningness-Eveningness, Comparative study, Gender, Personality, Big Five.*

Understanding of one's sleep cycle or chronotype is probably the most essential aspect of modern life that one must pay their attention towards. The starting of the day, or the act of winding down for the night are essential parts of an individual's daily routine and can make or break it. Many research studies have been conducted on morning-eveningness orientation. Past research has found a significant positive relationship between morning-oriented individuals and satisfaction with life (Randler, 2007). In another study, there was a positive correlation between morningness and a positive attitude towards life, and a negative correlation between morningness and depressive symptoms (Randler, 2011). The general narrative in media and research points to a mutually beneficial relationship between morning-orientation and psychological well-being.

Noticeably in the literature study, we found that the statistically significant difference between males and females has mixed results when it comes to chronotype. One study

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suggests that under the age of 30, females tend to be more morning-oriented: although with time this discrepancy evens out to show no significant differences over the age of 30 (Duarte et al., 2014b). Another study on the Italian adolescent population indicated no sex differences when it comes to morningness-eveningness (Giannotti et al., 2002). On the other hand, there are a few studies that propose the contrary. A study conducted on 1600 undergraduate students expressed significant differences between males and females when it comes to chronotype: female participants expressed significantly stronger tendencies towards morningness orientation (Chelminski et al., 1997). Another study confirms the same trend, with genders showing significant differences when it comes to chronotype (Adan & Natale, 2002).

The purpose of the current research is to confirm/disconfirm the evidence of the previous studies in context of the young adult population of Chandigarh, India. Further, the ambiguous nature of the results on gender differences for chronotype warrants further research to bring out concrete data in context of the location of the current study.

Morningness-Eveningness
"Morningness-eveningness refers to the individual differences in diurnal preferences, sleep-wake pattern for activity, and alertness in the morning and evening" (Susman et al., 2007). "Chronotype is an established concept designed to identify distinct phase relationships between the expression of circadian rhythms and external synchronizers in humans" (Duarte et al., 2014).

Individuals high on the morningness side of the spectrum tend to be early risers, perform mental and physical tasks better in the morning hours, and have a preference to do so. They tend to get exhausted by night and sleep early. By contrast, individuals who exist more towards the eveningness spectrum tend to be late risers, and perform physical and mental tasks more effectively at night. Their energies tend to peak during late afternoon and evening hours. Such preferences are dictated by many factors, like genetics, socio-cultural context, personal psychology and lifestyle, etc (Susman et al., 2007).

Life Satisfaction
"In essence, life satisfaction is a subjective assessment of the quality of one's life. Because it is inherently an evaluation, judgments of life satisfaction have a large cognitive component" (Sousa & Lyubomirsky, 2001). The American Psychological Association describes life satisfaction as "the extent to which a person finds life rich, meaningful, full, or of high quality" (APA, 2022). "Life satisfaction is an endorsement of, or positive attitude towards one's life overall" (Hall, 2014).

Life satisfaction is a reliable indicator of wellbeing since it is less influenced by mood swings. Higher performance, improved physical health, and more positive social ties are all related to life satisfaction. An individual can reflect on their successes, goals, and unmet needs through regular evaluation of their life satisfaction. It offers a broad view of how one is doing in life relative to their own expectations, and serves as a good place to start when examining in greater detail what enhances and what detracts from one's quality of life.

Big Five Personality
The Big Five Factor traits explain an individual's personality through five traits. The American Psychological Association defines personality as "the enduring characteristics and

behavior that comprise a person's unique adjustment to life, including major traits, interests, drives, values, self-concept, abilities, and emotional patterns" (APA, 2022).

Five-factor model of personality is a classification of a person's personality into five traits used in psychology. Personality traits are defined as patterns of thought, mood, and behavior that persist over the course of a person's life (Grice, 2016). The Big Five is one of the most widely used and empirically driven questionnaires to measure personality traits. It was first developed in 1949 by D.W. Fiske, and later expanded upon properly by Costa and McCrae. The Big Five trait dimensions are openness, conscientiousness, extraversion, agreeableness, and neuroticism (Costa & McCrae, 2012).

Purpose
The current study is a comparative study, aimed at finding out any statistically significant differences between males and females for the variable morningness-eveningness.

Hypothesis
- There will be a significant positive correlation between Morningness and Life Satisfaction.
- There will be a significant positive correlation between Morningness and Conscientiousness.
- There will be a significant negative correlation between Morningness and Neuroticism.
- There will be a significant positive correlation between Morningness and Agreeableness.
- There is no statistically significant difference in morningness-eveningness between males and females.
- There is no statistically significant difference in conscientiousness between males and females.

METHODOLOGY
Sample
The sample consists of N=77 young adults (19 to 25 years) ranging from high school graduates, to college students. The sample consists of 57.1% females and 42.9% males.

Measures
The following standardized scales were used for the measurement -
- **Morningness-Eveningness Questionnaire:** The measure was created to evaluate individual differences in morningness and eveningness, or how attentive and active respondents are at different times of the day. Scale elements ask for preferred sleeping and waking hours, as well as respondents' perceived 'peak' periods of well-being. It was developed by Horne & Östberg in 1976 and was translated to the English language for western usage (American Thoracic Society, 2022). It consists of 19 items, each multiple choice, ranging from 4 to 5 scale pointers. The summation scores range from 16 to 86. The full-scale internal consistency of the questionnaire is at 0.82, indicating feasibility for global use (Horne & Ostberg, 1976).
- **Big Five Inventory-10:** The BFI-10 is a shorter rendition of the Big Five Factor Inventories, which measure five personality traits like Extraversion, Agreeableness, Conscientiousness, Emotional Stability/Neuroticism, and Openness. It was adapted from Rammstedt, B. & John, O. P. (2007). The scale consists of 10 items, each a

likert scale, ranging from 1 (disagree strongly) to 5 (agree strongly). Several findings support factorial, construct and criterion validity of the BFI-10. The scale also had an acceptable reliability coefficient. Rammstedt and John (2007) showed test-retest correlations between r=.65 (Openness) and r=.79 (Extraversion) in a sample of American students over a period of 6 to 8 weeks. Numerous investigations revealed comparable outcomes for the German BFI-10 items. For instance, over the course of six weeks, Rammstedt et al. (2014) showed retest correlations between r =.49 (Neuroticism) and r =.62 (Openness).

- **Satisfaction With Life Scale:** The Satisfaction with Life Scale (SWLS) was created to gauge how satisfied respondents are with their overall quality of life. It was first created by researchers Diener, Emmons, Larsen, and Griffin (1985). The scale consists of 5 items, each a 7 point likert scale ranging from 1 (strongly disagree) to 7 (strongly agree) (Diener et al., 1985). The scale demonstrated strong internal consistency. The Cronbach's alpha coefficient for SWLS was 0.887 (Maroufizadeh et al., 2016).

Procedure

Participants were given questionnaires, and their consent was obtained and acknowledged. The participants were informed that they had to be truthful in their responses and had the option of quitting the study in the middle if they experienced any sort of discomfort. The instructions were presented to the participant along with the questionnaire itself, and their queries were addressed and answered. Finally, they received gratitude for their assistance with the research.

RESULTS

The Mean, Standard Deviation, Correlations and p-value were found out as below

Table 1: Shows the N, mean and standard deviation

	Gender	Life Satisfaction	MEQ	E	A	C	N	O
N	F	43	43	43	43	43	43	43
	M	34	34	34	34	34	34	34
Mean	F	22.2	48.6	6.21	7.70	6.72	6.40	6.677
	M	20.3	43.8	5.766	7.09	5.76	6.24	6.79
Standard deviation	F	6.47	11.0	2.055	1.41	1.67	1.84	1.48
	M	7.12	9.49	1.95	1.44	1.67	1.94	1.23

Table 2: Shows the correlation values between the studied variables and their subscales

		Life Satisfaction	MEQ	E	A	C	N	O
Life Satisfaction	Pearson's r	—						
	p-value	—						
MEQ	Pearson's r	0.149	—					
	p-value	0.195	—					
E	Pearson's r	0.169	0.094	—				
	p-value	0.143	0.415	—				
A	Pearson's r	-0.027	0.259*	-0.011	—			
	p-value	0.816	0.023	0.924	—			
C	Pearson's r	0.282*	0.480***	0.238***	0.228*	—		
	p-value	0.013	<.001	0.037	0.046	—		
N	Pearson's r	-0.259*	-0.232*	-0.176*	-0.081	-0.311**	—	
	p-value	0.023	0.042	0.126	0.483	0.006	—	
O	Pearson's r	-0.003	-0.078	0.141	0.073	0.225*	0.081	—
	p-value	0.981	0.501	0.223	0.526	0.049	0.481	—

*Note. * $p < .05$, ** $p < .01$, *** $p < .001$*

Table 3: Shows the p values of the t-test

		Statistic	df	p
Life Satisfaction	Student's t	1.204	75.0	0.233
MEQ	Student's t	2.016	75.0	0.047
E	Student's t	0.963	75.0	0.338
A	Student's t	1.867	75.0	0.066
C	Student's t	2.497	75.0	0.015
N	Student's t	0.370	75.0	0.712
O	Student's t	-0.380	75.0	0.705

DISCUSSION OF RESULTS

Current literature aims to find a correlation between life satisfaction and morningness. A lot of studies on personality tests show that morningness has significant correlations with conscientiousness and agreeableness. A study, keeping the higher order functioning of Big-five factor personality traits in mind, has drawn the conclusion that morningness has significant positive relation with neuroticism(reversed), conscientiousness and agreeableness (DeYoung et al., 2007). In another study, morning-types scored significantly higher on the conscientiousness factor as compared to evening-types, and evening types scored higher on neuroticism as compared to morning types (Tonetti et al., 2009).

The current study attempts to identify any salient relationship that may occur between the variables of chronotype, life satisfaction and Big Five Factory personality traits, that may be occurring between male and female participants of the age group 18-25. The current study

shows no significant relationship between life satisfaction and morningness. Hence, the hypothesis that life satisfaction correlates positively with morningness is rejected. However, there was a significant positive relationship found between morningness, conscientiousness and agreeableness, and a significant negative relationship between morningness and neuroticism. It confirms previous studies, which show a significant relationship between morningness and conscientiousness. As an example, a study by the University of Trier exhibited significant positive correlations between morningness and conscientiousness (Lipnevich et al., 2017). Another study confirms the hypothesis of this study, stating that morningness has a positive correlation with conscientiousness and agreeableness, while it has a negative correlation with neuroticism (Randler et al., 2017).

Hence the hypothesis that morningness correlates positively with agreeableness, and the hypothesis that morningness positively correlates with conscientiousness, both are accepted. An interesting relationship was found: although morningness does not correlate with life satisfaction, both life satisfaction and morningness correlate significantly and positively with conscientiousness. Not much can be inferred from this equation, although it may be possible that conscientiousness works as a mediating factor between life satisfaction and morningness. Infact, a study published in Chronobiology International found that conscientiousness partially mediated morningness and life satisfaction (Drezno et al., 2018). Although in the study from Chronobiology journal, life satisfaction, conscientiousness and morningness were found to be mutually correlated as well, indicating that extraneous factors like socio-cultural context may also be coming into play.

In the comparison study between male and female college students, age ranging from 18 to 25, there was a statistically significant difference when it comes to chronotype. Female population expressed a more morningness orientation (Mean value=48.6) as compared to male population (Mean value=43.8). It was also found that there was a significant difference between males and females over the variable of conscientiousness, with the females (mean=6.72) being higher than males (mean=5.76). Hence, both the null hypothesis for statistically significant difference between males and females on the variables of Morningness-Eveningness and conscientiousness are rejected.

CONCLUSION

The research was a comparative study between male and female young adult (age:19-25) population of Chandigarh (India) conducted on the primary variable, Morningness-Eveningness and how it relates to Life Satisfaction and the Big-Five Factor personality traits. There was a significant difference found between the males and females on the variables morningness-eveningness and conscientiousness, with females showing higher conscientiousness and a morningness orientation. Further, the research found that morningness has significant positive relationships with conscientiousness and agreeableness, a significant negative relationship with neuroticism, and no significant relationship with life satisfaction. The results of the comparison study are consistent with many other studies conducted to identify gender differences in morningness-eveningness orientation. However, the lack of correlation between morningness and life satisfaction holds some inconsistencies with other previous studies on the same variables. The limitations imposed by a relatively smaller sample size may have been one of the reasons, along with the psycho-social context of the country, and the urban nature of the sample size. Although the gender differences between males and females are evident, they cannot be easily explained without further digging into how the social and cultural standings of the two genders affect their chronotype

and lifestyle. Nevertheless, the study adds to the long-standing narrative that waking up in the morning may relate to a positive effect on an individual's mental stability and well being.

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