

A Preliminary Study on the Relationship between Death Anxiety, Spiritual Well-being and the Meaning of Life among Individuals Living in Klang Valley, Malaysia

¹*Suzana Mohd Hoesni, ²Haikal Anuar Adnan, ³Najwa Afifa Roshaizad

ABSTRACT--- *To investigate the relationship between death anxiety, spiritual well-being and the meaning of life among individuals from critically developed areas in Klang Valley, Malaysia. This is an exploratory research study. The study involved 309 participants who were selected using the cluster sampling method from 10 of the most critically developed locations in Klang Valley, Malaysia. Questionnaires were distributed to respondents who had stated their agreement to the informed consent. The questionnaires consisted of questions regarding personal background, death anxiety, spiritual well-being and the meaning of life. Completed questionnaires were then collected and analyzed. The results show that there is a small, negative and significant relationship between the dimensions of death anxiety (extinction) and spiritual well-being (existential) ($r_s = -0.12^{**}$, $p < 0.01$). Conversely, there is a small, positive and significant relationship between death anxiety (cessation) ($r_s = 0.27^{**}$, $p < 0.01$) and death anxiety (extinction) ($r_s = 0.18^{**}$, $p < 0.01$) with meaning of life (searching). Results also show that there is a small, positive and significant relationship between death anxiety (cessation) and spiritual well-being (religious) ($r_s = 0.15^{**}$). Findings indicate that individuals with more understanding on existential aspects within the dimension of spiritual well-being are prone to lesser death anxiety experience. In addition, individuals who achieved the meaning in life have lower scores in death anxiety. Implications of this study towards helping professionals such as counselors, therapists and social workers working with individuals facing death anxiety. Future research suggestions relating to death anxiety were also discussed.*

Keywords--- *Death Anxiety, Meaning of Life, Klang Valley, Malaysia.*

I. INTRODUCTION

Death is one of the processes in the human life cycle and the final stage in the phase of life of an individual (Santrock, 2017). This is an important issue due to the close relationship it has with the life experienced by every human (Jong & Halberstadt, 2016). Social scientists and members of the helping professions have begun paying attention to the aspect of death.

Death not only influences the well-being of an individual but also those who surround him or her (Bernard, Strasser, Gamondi, Braunschweig, Forster, Kaspers-Elekes, Veri, & Borasio, 2017). This factor encompasses

¹*Faculty of Social Science and Humanities, Universiti Kebangsaan Malaysia, Bangi, Selangor. smh@ukm.edu.my.

²Faculty of Social Science and Humanities, Universiti Kebangsaan Malaysia, Bangi, Selangor.

³Faculty of Social Science and Humanities, Universiti Kebangsaan Malaysia, Bangi, Selangor.

situations that are capable of arousing prolonged sadness in an individual, giving up on life, depression and taking the radical decision to hurt own self and having a suicidal tendency. A study has shown that if the issue of death was not properly addressed, many less fortunate situations would emerge and threaten the well-being of an individual's life (Aghababaei, Sohrabi, Eskandari, Borjali, Farrokhi & Zhuo, 2016).

Consequently, a growing number of researchers are beginning to study the importance of coping with death positively to help individuals affected and also dealing with the loss of significant persons in their lives due to death (Stein et. al, 2019). It is essential to help those individuals to ensure the happiness of people around them so they can optimally continue their lives well. Due to this importance, there have been many previous studies which examined the aspect of death especially on those who had experienced the loss of loved ones (Stein et al., 2019), chronically ill patients waiting for their final moments (Soleimani, Sharif, Yaghoobzadeh, Yeoh, & Panarello, 2018), individuals from the younger and older generations (Wittkowski, 2016) and death anxiety among undergraduates (Desa dan Gan, 2001).

However, the scientific study of death in psychology is still in its early stages. As most of the research activities and the construction of knowledge on death are originated in the West, past researchers have emphasized the significance of future studies focusing on non-Christian religions and Western samples as well as individuals from various cultures (Abdel-Khalek & Neimeyer, 2017). To date, there have been studies that focus on Muslim individuals but less frequently done among Southeast Asian samples such as Malaysians. Research on death related issue in Malaysia was focused on death of semantic language development in specific ethnic groups (Wahab, Abdullah, Mis, Salehuddin, 2016), spiritual well being (Ibrahim, Che Din, Ahmad, Amit, Ghazali, Wahab, Abdul Kadir, Halim & Halim, 2019; Adawiyah Ismail, Fariza Md. Sham, Faizah Mohd. Zaki, 2018), death anxiety among undergraduate university students (Desa dan Gan Wei Suan, 2001) and meaning of life (Hamjah, Deraman, Mokhtar, Ismail, 2018; Alavi, Sail, Omar, Subhi, Chong, Sarnon, Ibrahim & Lukman, 2011)

Past researchers have found that most of the sample population in the studies implemented were Arabs who had experienced war. The result of that study was believed to induce a higher level of death anxiety compared to those samples who did not have any experience of war. Up to now, there have been many studies conducted among Muslims but most of the sample population were Iranian and Turks.

Therefore, psychologists have also begun to discuss and investigate the issue of death. They have also developed theories to understand this phenomenon of death specifically for those facing death as well as those who have been affected by the process of life and death (Jong & Halberstadt, 2016, Wittkowski, 2016). Previous studies have shown that there was a correlation between death anxiety and the meaning of life. It has been found that the more anxious a person when facing death, the less meaningful his or her life came to be, thus leading to the lack of happiness in life. This is important because it helps one to continue living with a positive goal.

Besides, spiritual aspects are also deemed significant in helping to enhance the meaning of one's life. Tekin (2016) has found that as a person's spiritual tendency increased, he or she became more positive hence, helping that person to respond positively to the challenges of life. This indirectly suggests that spiritual matters are an important

aspect of helping individuals overcome death anxiety. This is further supported by the findings of Tanhan (2007) and Yalom (2001). They found that death anxiety could be reduced by seeking and acknowledging the reality of death besides understanding and recognizing its meaning. This is supported by the study conducted by Peters et. al (2013) which found that the emphasis on education on death is necessary for professions that deal with patients such as nurses. Aghababaei et. Al (2016) found that the belief in God or science is a factor that contributes to subjective well-being through the existence of hope and purpose in life. Furthermore, Jong, and Halberstadt (2016) found that individuals with religious beliefs appeared to possess “immunity” or were protected from the effects of death anxiety. As a result, these individuals are more positive about their lives even though death will come to them at any time. This is because the phenomenon of death is one of the stressors for nurses especially the young ones.

The results and synthesis of previous studies highlighted the need and importance of studying the relationship between death anxiety and two other psychological aspects namely, the meaning of life and spiritual well-being. Thus, this study aims to investigate the relationship between two important psychological aspects specifically, the meaning of life and spiritual well-being and death anxiety.

II. RESEARCH METHOD

Research Design

This study applied the exploratory research design using questionnaires.

Sampling

The sampling for this study utilized a cluster sampling method that focused on 10 locations partitioned by municipalities in the Klang Valley area. Those areas are Kuala Lumpur, Putrajaya, Shah Alam, Petaling Jaya, Klang, Kajang, Subang Jaya, Selayang, Ampang Jaya, and Sepang. The area has been categorized as 10 densely populated areas by the PEMANDU Survey 2016 and has been identified as the “Greater KL / Klang Valley Region” which serves as a critical economic growth center (Economic Transformation Programme (ETP)). One of the reasons for selecting those locations is due to the fact they are densely populated with residents from diverse socioeconomic backgrounds.

The respondents in this study consisted of individuals residing in those 10 locations. A total of 309 individuals (118 men, 191 women) has voluntarily completed the questionnaires distributed to them. The age of respondents ranged from 20 to 72 years old.

III. PROCEDURE

The process of the survey began by distributing the questionnaires to those 10 locations identified by the researchers and handed out to the respondents with the assistance of survey enumerators. A total of 309 questionnaires were collected and completed by the respondents. Then, they were analyzed by survey enumerators.

IV. MEASUREMENTS

The questionnaire in this study deals with questions related to the respondents' background, life satisfaction, spiritual well-being, and the level of death anxiety. The questions are divided into 5 sections namely Section A (respondent's background), Section B (the meaning of life), Section C (spiritual well-being) and Section D (death anxiety).

Section A: Respondent's background

Questions related to the respondent's background are also included to give descriptive characteristics for this survey. Those questions include sex, age, race, religion, level of education, marital status, and occupation.

Section B: The Meaning in Life Questionnaire (Steger, Frazier, Oishi, & Kaler 2006)

The Meaning in Life Questionnaire (Steger, Frazier, Oishi, & Kaler 2006) scale has been used in this study to measure how the respondents give meaning in their lives. The scale consists of 10 items and it is divided into two dimensions: *presence* and *search*. The dimension of *presence* contains five items that deal with the situations where individuals feel they have meaning in their lives. The respondent evaluates 10 items by stating his or her responses through 7-point Likert Scale ranging from 1 point which represents "absolutely untrue" to 7-point that signifies "absolutely true". The greater the score for each dimension, the higher the existence of the meaning in life. The reliability of *The Meaning in Life Questionnaire* in this study is $r = .77$ for the "presence of meaning in life" dimension and $r = .82$ for "searching for meaning in life" dimension.

Section C: The Spiritual Well-Being Scale (Ellison, 1983)

The Spiritual Well-Being Scale by (Ellison, C. W. (1983)) has been used to measure an individual's well-being in the spiritual aspect which comprises belief and religious practice. This scale has 20 items which are divided into two dimensions namely *religious well-being* (10 items) and *existential well-being* (10 items). The *religious well-being* items include questions related to divinity and self, while *existential well-being* items consist of questions related to life satisfaction, the purpose of life and the surrounding environment. Each respondent needs to give his or her response in the form of a 6-point Likert Scale where "1" represents "strongly disagree" while "6" signifies "strongly agree". To reduce bias, almost half of the items on this scale are stated in reverse direction. The given response agreement will reflect higher spiritual well-being. The reliability of *The Spiritual Well-Being Scale* in this study is $r = .37^{**}$ for the dimension of "spiritual well-being of religiosity" and $r = .45^{**}$ for the dimension "spiritual well-being of existential".

Section D: The Two-Factor Existential Death Anxiety Scale (Jong, Halberstadt, & Jackson 2015)

This scale has 12 questions on death anxiety which are divided into two dimensions namely *the cessation of life* (6 items) and *the extinction of the self* (6 items). The question on *the cessation of life* is related to the general question about death, which means the end of life in this world. Whereas, *the extinction of the self* is about self-extinction in a world where one would eventually cease to be in the state of consciousness. Respondents state their responses with a 7-point Likert Scale ranging from “1” which means “strongly disagree” to “7” which signifies “strongly agree”. The greater the score, the higher the degree of death anxiety. The reliability of *The Two-Factor Existential Death Anxiety Scale* in this study is $r = .21^{**}$ for the “cessation of life” dimension and $r = .14^{*}$ for the “extinction of the self” dimension.

V. ANALYSIS

Data analysis was obtained from the questionnaire using IBM^R SPSS Statistical Package for the Social Science (SPSS) version 22. Descriptive statistics such as frequency, percentage, and mean were used to get descriptive information about the samples in this study. Normality test was conducted and it has been found that the abnormal distribution for the variables meaning in life, $D(309) = 0.07$, $p < .05$, spiritual well-being $D(309) = 0.00$, $p < .05$, and death anxiety $D(309) = 0.00$, $p < .05$, done using the Kolmogorov-Smirnov test. Thus, the non-parametric analysis of the Spearman's Correlation Test was used to test the relationship between the variables meaning in life, spiritual well-being and death anxiety.

VI. RESULTS

Descriptive statistical results

A total of 309 respondents (118 men, 191 women) has participated voluntarily in this study. They age from 20 to 72 years old with the mean age of $m = 34.30$ and the standard deviation of $s.d. = 12.49$. The respondents' ethnicities were Malays (49.2%), Chinese (29.1%), Indians (19.4%) and other races (7%). About 49.5% of the respondents were Muslims, followed by Buddhists (26.9%), Hindus (15.9%), Christians (6.1%) and other religions (1.6%). The majority of the respondents in this study (47.9%) have Bachelor's degrees followed by Malaysia Certificate of Education holders (21.0%) and MHSC/Diploma holders (17.8%). Around 47.9% of the respondents were married and 47.6% of them were singles. Other than that, most of them worked in the private sector (35.6%), while 34.0% were unemployed and 17.2% worked in the public sector.

VII. INFERENCE STATISTICS RESULTS

Personal background and death anxiety

The results show that there is a small, positive and significant relationship between the dimensions of death anxiety (cessation) ($r_s = .27^{**}$, $p < 0.01$) and death anxiety (extinction) ($r_s = .18^{**}$, $p < 0.01$) with the meaning of life (searching). The results also show that there is a small, positive and significant relationship between the dimensions of death anxiety (cessation) and spiritual well-being (religious) ($r_s = 0.15^{**}$). Conversely, there is a small, negative and significant relationship between the dimensions of death anxiety (extinction) and spiritual well-being (existential) ($r_s = -0.12^{**}$).

Table 1: Results of Spearman Correlation test of Death Anxiety (DA), Meaning of Life (MoL), and Spiritual Well-being (SWB)

Death Anxiety	MoL(presence)	MoL(searching)	SWB(religious well-being)	SWB(existential well-being)
- cessation	$r_s = 0.06$	$r_s = .27^{**}$	$r_s = 0.15^{**}$	$r_s = .04$
- extinction	$r_s = 0.02$	$r_s = .18^{**}$	$r_s = 0.04$	$r_s = -.12^*$

Note: $^{**}p < 0.01$, $^*p < 0.05$

VIII. DISCUSSION

The following discussion is arranged under subheadings to help the audience grasp the significant results of this study as a whole. This section will end with a short discussion on the implication of the study to the psychological field of research in death anxiety, to the members of the helping professions and also, suggestions for future research.

The relationship between the meaning of life and death anxiety-cessation and extinction

Findings indicate that individuals who are actively searching the meaning of life are more anxious toward the idea of death. These include acts such as looking for something which makes their lives meaningful, seeking a purpose in their lives, searching for something to make them feel that their lives are significant and searching for missions in their lives. In other words, individuals who are still striving to put meaning to their lives are prone to experience more anxiety toward death compared to those who have achieved an understanding to the meaning of life.

The relationship between spiritual-religious and death anxiety-cessation

Besides, the more religious individuals are, the more anxious they will be when it comes to dealing with the certainty of death (cessation) or the end of life. To illustrate, as individuals feel more connected to God, they are

getting more anxious toward the fact that their lives will end one day. One of the possible reasons is that they understand the inevitability of death and it will happen without giving any notice in advance. They also know that there will not be enough time for them to repent their wrongdoings and to please God.

The relationship between spiritual-existential well-being and death anxiety

Conversely, findings in this study show that individuals who possess more spiritual-existential characteristics are found to be less anxious about death-the extinction of self. These spiritual-existential aspects of existence include awareness on the purpose of life, being satisfied with life, having a good relationship with other people and feeling good about life situations. Furthermore, individuals who are less worried about departing from this world tend to cope better with anxiety.

Findings in this study are supported by an experimental study done by Jackson, Jong, Bluemke, Poulter, Morgenroth, and Halberstadt (2017) which tested the causal relationship between religious belief and death anxiety. They found that religious belief helped individuals to reduce death anxiety by presenting symbolic and literal aspects of being immortal after death. Religion provides an explanation of life after death and this factor helps individuals to reduce the fear of death. These ideas are also supported by Jong and Halberstadt (2016) who stated that individuals who have religious worldviews tend to have more positive views toward death. Interestingly, they can also manage the negative aspects of death quite well (Carr & Sharp, 2014, Jonas & Fischer, 2006; Schoenade, 1989).

Moreover, in the field of research that focuses on death anxiety, the Theory Management of Terror (TMT) (Goldenberg, Pyszczynski, Greenberg & Solomon, 2000) has a very important role in explaining this natural phenomenon. This theory adopts the idea introduced by the late anthropologist, Becker (1971, 1973) who proposed that any issue related to mortality is best managed psychologically rather than directly. He proposed that for children, secure attachments are built to their parents to reduce the fear of facing the world. Over the years, when children grow up into adults, they soon begin to understand that they and their parents are mortals. Thus, the role of parents as secure attachments that help them to provide security against uncertainty in life will be eventually replaced by religion.

All in all, one of the crucial implications from the findings indicates the need to expand psychological research on the subject of death anxiety. It suggests that future research will focus on using a larger sample size to gain normally distributed data to enable further analysis. It is also vital to extend the study of death anxiety in a population with diverse culture, religions and faith. This enables to explore and understand more on the issue of death anxiety and its nature of occurrence. Conversely, another research implication is suggesting future researchers to explore death anxiety by focusing on collecting data qualitatively, thus getting rich data to understand the topic on death anxiety in depth. One of the important focus of future studies is to explore how spiritual aspects can help to reduce death anxiety among individuals. This may enhance the existing knowledge of the psychological aspects of death anxiety.

Furthermore, findings in this research are also important to inform helping professions such as counselors, therapists, and social workers in working with individuals and other related persons in facing issues related to death anxiety. The knowledge on understanding death anxiety is crucial for helping professional since it can help formulate modules, intervention programs in to halt death anxiety or to cope with death anxiety. Not only that, these findings also suggest the importance of educating individuals so they can understand and achieve the meaning of life besides linking individuals to spiritual aspects such as religiosity and existentialism in helping to reduce anxiety toward death.

IX. ACKNOWLEDGEMENT

I would like to express my gratitude to Faculty of Social Sciences and Humanities, Universiti Kebangsaan Malaysia (UKM) for providing the Small Research Grant (GKP) (SK-2019-009). Nevertheless, many thanks to research assistant, Nurul Shafini Shafurdin for her endless help in managing enumerators in data collection process and managing data. Last but not least, I would like to thank all respondents who have contributed to the understanding of death anxiety in Malaysian context.

REFERENCES

1. Abdel-Khalek, A.M. & Neimeyer, R.A. (2017). Death Anxiety Scale. In Zeigler-Hill, V. & Shackelford (eds), *Encyclopedia of Personality and Individual Differences*. Springer International Publishing AG 2017.
2. Aghababaei, N., Sohrabi, F. Eskandari, H., Borjali, A., Farrokhi, N., Zhuo, J.B. (2016). Predicting subjective well-being by religious and scientific attitudes with hope, purpose in life, and death anxiety as mediators. *Personality and Individual Differences*, 90, 93-98.
3. Alavi, K., Sail, R., Mohamad, M.S., Omar, M., Subhi, N., Chong, S.T., Sarnon, N., Ibrahim, F. & Lukman, Z.M. (2011). Exploring the meaning of ageing and quality of life for the sub-urban older people. *Pertanika Journal of Social Science and Humanities*. 19(S):41-48 .
4. Ardlet, M. (2008). Wisdom, religiosity, purpose in life, and death attitudes of aging adults. In Tomer, A, Eliason, G.T. & Wong, P.T.P., *Existential and spiritual issues in death attitudes*. (p.p. 139-158). London: Lawrence Erlbaum Associates
5. Bernanrd, M., Strasser, F., Gamondi, C., Braunschweig, G., Forster, M., Kaspers-Elekes, K. Veri, S.W. & Borasio, G.D. (2017). Relationship between spirituality, meaning in life, psychological distress, wish for hastened death, and their influence on quality of life in palliative care patients. *Journal of Pain and Symptom Management*. 54(4).
6. Carr, D., & Sharp, S. (2014). Do afterlife beliefs affect psychological adjustment to late-life spousal loss? *The Journals of Gerontology. Series B, Psychological Sciences And Social Sciences*, 69(1), 103–112. doi:10.1093/geronb/gbt063

7. Desa, A. dan Gan, W.S. (2001). Kebimbangan terhadap kematian di kalangan pelajar UKM. *Jurnal Personalia Pelajar*. 7, 131-137.
8. Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49, 71-75.
9. Ellison, C. W. (1983). Spiritual well-being: Conceptualization and measurement. *Journal of Psychology and Theology*. 11: 330-340.
10. Shidhaye SS, Lotlikar VM, Ghule AM, Phutane PK, Kadam VJ. "Pulsatile Delivery Systems: An Approach for Chronotherapeutic Diseases." *Systematic Reviews in Pharmacy* 1.1 (2010), 55-61. Print. doi:10.4103/0975-8453.59513
11. Goldenberg, J. L., Pyszczynski, T., Greenberg, J., & Solomon, S. (2000). Fleeing the Body: A Terror Management Perspective on the Problem of Human Corporeality. *Personality and Social Psychology Review*, 4(3), 200–218. https://doi.org/10.1207/S15327957PSPR0403_1
12. Ibrahim, N., Che Din, N., Ahmad, M., Amit, N., Ghazali, S.E., Wahab, S., Abdul Kadir, N.B., Halim, F.W., A. Halim, M.R.T. (2019). The role of social support and spiritual wellbeing in predicting suicidal ideation among marginalized adolescents in Malaysia. *BMC Public Health*. 1-8.
13. Japar, S., Yahya, N.A., Raman, R.A., Sani, A.M., Halain, A.A., Geok, K.I.M., Soh, K.L.S. Knowledge, attitude and practice of blood donation among undergraduate students in a Public University, Malaysia(2018) *International Journal of Pharmaceutical Research*, 10 (4), pp. 47-52.
14. Ismail, A., Sham, F.M. & Zaki, F. M. (2018). The spiritual wellbeing of female cancer patients at the national cancer society Malaysia. *Journal of Education and Social Sciences*.
15. Jackson, J.C., Jong, J., Bluemke, M., Poulter, P., Morgenroth, L., & Halberstadt, J. (2017). *Testing the causal relationship between religious belief and death anxiety*, *Religion, Brain & Behavior*. <http://dx.doi.org/10.1080/2153599X.2016.1238842>.
16. Jonas, E & Fischer P. (2006). Terror management and religion: evidence that intrinsic religiousness mitigates worldview defense following mortality salience. *Journal of Personality and Social Psychology*. 2006, 91(3), 553-67.
17. Jong, J. & Halberstadt, J. (2016). *Death anxiety and religious belief: An Existential Psychology of religion*. New York: Bloomsbury.
18. Jong, J., Ross, R., Philip, T., Chang, S.H., Simons, Naomi & Halberstadt, J. (2017). The religious correlates of death anxiety: A systematic review and meta-analysis. *Religion, Brain & Behavior*, 8(1), 4-20.
19. Neimeyer, R.A., Wittkowski, J. & Moser, R.R. (2004). *Psychological research on death attitudes: An overview and evaluation*. *Death studies*. 28, 309-340.
20. Paloutzian, R. F., & Ellison, C. W. (1982). *Manual for the Spiritual Well-being Scale*. Nyack, NY:Life Advance, Inc
21. Santrock, J. (2017). *Life-Span Development*. Edisi ke 16. New York: McGraw-Hill Higher Education.
22. Schoenrade, P.A. (1989). When I die... Belief in afterlife as a response to mortality. *Personality and Social Psychology Bulletin*, 15, 91-100.

23. Soleimani, M.A., Sharif, S.P., Yaghoobzadeh, A. Yeoh, K.K. & Panarello, K. (2018). Exploring the Relationship Between Spiritual Well-Being and Death Anxiety in Survivors of Acute Myocardial Infarction: Moderating Role of Sex, Marital Status and Social Support. *Journal of Religion and Health*, 57, 683-703.
24. Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The Meaning in Life Questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, 53, 80-93.
25. Stein, H.C., Majher, J.H., Froemming, M.W., Greenberg, S.C., Benoit, M.F., Gonzales, S.M., Ptrowski, C.E., Mattei, G.M. & Dulek, E.B. (2019). Community psychology, digital technology, and loss: Remembrance activities of young adults who have experienced the death of a close friend. *Journal of Community & Applied Social Psychology*. 1-16.
26. Templer, D.I. (1970). The construction and validation of a death anxiety scale. *The Journal of General Psychology*. 82, 165-177.
27. Veena Sharma, Urmila Chaudhary (2015) An Overview On Indigenous Knowledge Of Achyranthes Aspera. *Journal of Critical Reviews*, 2 (1), 7-19.
28. Wahab H.A., Abdullah I.H., Mis M.A. & Salehuddin K. (2016). An analysis of death euphemisms in sarawak malay community from the perspective of cognitive semantics [Analisis eufemisme kematian masyarakat melayu sarawak dari perspektif semantik kognitif]. *GEMA Online Journal of Language Studies*. 53-71.
29. Wittkowski, J. (2016). Coping and Attitudes Toward Dying and Death in German Adults. *Journal of Death and Dying*, 72(4),316-339.
30. Rajavenkatesan,T.,Mohanasundaram,C.,Ajith,A.S., &Vignesh, P. (2017). Photo Voltaic Cooling Can. *International Journal of Communication and Computer Technologies*, 5(1), 17-22.
31. Gowshika,E., &Sivakumar,S. (2017). Smart LPG Monitoring and Controlling System. *International Journal of Communication and Computer Technologies*, 5(1), 23-26
32. Odaci, E., İkinci, A., Yildirim, M., Kaya, H., Akça, M., Hanci, H., Sönmez, O.F., Aslan, A., Okuyan, M., Baş, O. The effects of 900 megahertz electromagnetic field applied in the prenatal period on spinal cord morphology and motor behavior in female rat pups(2013) *NeuroQuantology*, 11 (4), pp. 573-581.
33. Hameroff, S. Orchestrated reduction of quantum coherence in brain microtubules: A model for consciousness (2007) *NeuroQuantology*, 5 (1), pp. 1-8.