



A Comparative Analysis of Emotional Regulation and Quality of Life between women and without PCOS

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ABSTRACT

Polycystic Ovary Syndrome is seen to impact women of reproductive age. This study aims to compare the emotional regulation and life quality between two groups of women-women diagnosed with PCOS and the control group including non- PCOS women. The major goal of this study is to identify the significant differences in emotional regulation and quality of life in both groups and provide support strategies. A total of 104 participants are included in the study with the age range of (18-29) consisting of 52 participants who are clinically diagnosed with PCOS and 52 participants without the condition (control group). The variables are measured using the Emotional Regulation Questionnaire (ERQ) to assess emotional regulation and World Health Organization Quality of life Scale (WHOQOL-BREF) to measure quality of life. Independent sample t test was used to find out the variations in both groups. The results revealed that there is a significant difference in both domains of emotional regulation between both groups of women. Women with PCOS exhibit decreased levels of emotional regulation when compared with the control group. In terms of quality

of life, there was a significant difference in all domains - physical, psychological, social, and environmental where women without PCOS scored high in quality of life when compared to women with PCOS. Findings indicate that PCOS has a negative impact on emotional regulation and quality of life in women diagnosed with it which can lead to long term consequences.

Keywords: Polycystic ovary syndrome, emotional regulation, quality of life, PCOS

INTRODUCTION

Polycystic ovarian syndrome (PCOS) is a common endocrine disorder that impacts young women of reproductive age. (Karjula, 2021). Symptoms include polycystic ovaries on ultrasonography, hirsutism, obesity, and emotional disturbances, which can lead to infertility, metabolic disturbances, and long-term medical conditions. However, these symptoms are frequently linked to a woman's deterioration in self-esteem and self-image and may have an impact on her health-related quality of life. Approximately one in fifteen women worldwide suffer from polycystic ovarian syndrome This condition typically manifests in adulthood, followed by cardiovascular and metabolic disorders at menopause. Although common characteristics of normal aging, such as menstrual abnormality and insulin resistance, may raise the risk of PCOS in young adults, there are no criteria for diagnosis for this condition (Singh, 2023).

PCOS has been linked to many health hazards that can worsen morbidity, disrupt the quality of life, and soar mortality rates (Bellver, 2018). The prevalence of PCOS varies widely due to the plethora of diagnostic criteria used by different researchers and the varying standards recommended by numerous organizations (Sirmans, 2014). Countless women might possess PCOS conditions and coexist with it without clinical identification, bringing regard to this vital issue regarding PCOS diagnosis within community, noting that roughly 68% of women with PCOS had not undergone PCOS testing previously (March 2010). Life and dietary factors can possibly contribute indirectly to the happening of PCOS because exposure to such factors have been tied to the onset of PCOS in

susceptible women. Weight gain and obesity worsens the characteristic traits of PCOS, whereas weight loss helps reduce the characteristic traits of PCOS (Moran, 2006). A notable theory of PCOS be its liaison with stress. The existing symptoms of PCOS be distinguished by an heightened level of stress, which correlates with higher cortisol levels. This rise worsens PCOS symptoms by causing insulin resistance, constructing an evil loop. (Dybciak, 2022). Women with PCOS have been identified as showing increased levels of neuroticism, anxiety, and depression, signaling challenges in managing stress. This issue is worsened by metabolic stress, which adds to the prolonged state of the syndrome and its reproductive, metabolic, and emotional dysregulation (Gnawali, 2021).

Emotional Regulation

The process by which individuals control their emotions—what they feel, when they feel it, and how they express and experience it—is termed emotion regulation. (Gross, 2015). A well-regulated individual will be able to better balance and evaluate their emotions and behavior and has the capacity to properly assess which unpleasant implications to refrain from (Wegner, 1993). Emotion regulation can consciousness or unconsciously, automatic, or controllable. Symptoms of depression, anxiety, gastrointestinal pathology, and abuse have been linked to emotion dysregulation. Higher levels of emotion regulation are linked to high social skills and result in ethically appropriate emotions expression (Lexi, 1999). Features of PCOS involves irregular or missing menstrual times, inability to conceive, and hormonal levels which might affect an individual's emotional regulation and have an emotional correspondence. The stress felt also relies on individual's emotional regulation skill that impacts showcased and experienced psychological symptoms. (Pearte, 2009). Hormonal

imbalances and physical symptoms of PCOS can result in low self-esteem which can impact their emotional regulation. Emotional dysregulation can vary from extreme control of emotions all the way to not being able to regulate responses at all. Emotional dysregulation isn't isolated to one specific symptom but spans across different beliefs, like anxiety, drug abuse, eating issues, and sadness, and can disrupt efforts to adopt healthy behavior. Therefore, gaining the ability to regulate emotional responses to both internal and external stressors will probably affect one's quality of life and well-being significantly (Menefee, 2022).

Wang et al. (2023) analyzed the factors influencing body-image satisfaction, anxiety, and depressive symptoms in Chinese women diagnosed with PCOS, and investigate the relationships among them as well as whether cognitive reappraisal and expressive suppression played a mediating role. A total of 477 women with PCOS were enlisted from the Department of Gynecology and Reproductive Medicine Center at a university-affiliated tertiary hospital in China. The findings indicated a notable correlation between body-image satisfaction, anxiety, and depressive symptoms, with cognitive reappraisal and expressive suppression mediating this correlation.

Talwar et al. (2023) explored the contrast between women with PCOS and without PCOS in their emotion regulation, resilience, and experiences in close relationships. The sample included a total of 100 women aged between 21-30 years who were currently in a premarital relationship. The outcomes revealed there a significant difference in the levels of resilience between women with and without PCOS. Another key discovery of the study indicated that there was a notable difference in emotional regulation between both categories. Also found was that women with PCOS exhibit higher levels of avoidance attachment style as compared to those without PCOS, with no notable difference in anxiety attachment style.

Quality of Life

The multifaceted idea of quality of life (QOL) comprises of variety of factors related to an individual's well-being, such as their physical and psychological health, education, employment, environment, feeling of social belonging etc. (Leeuwen ,2019). The World Health Organization defines quality of life as an individuals' own perception of their position in life in the context of culture and value system in which they live and their relation to their goals, standers, and concerns and it includes four broad domains: physical health, psychological status, and social relations and environmental (WHO, 2017).PCOS has impacted the lives of women diagnosed with a variety of reproduction, metabolic, and mental health issues (Joham et al., 2022). Approximately 50%-70% of women who are affected has symptoms of insulin resistance that lead to comorbidities, involving metabolic syndrome, high blood pressure, dyslipidemia, sugar intolerance, and diabetes (Sirmans & Pate, 2013). Alongside the clinical symptoms, extended complications affect diverse components of their life quality. Studies was reported that PCOS symptoms affects women's physical health and emotional well-being which disrupts their quality of life. Impacted women encounter and deal with their symptoms and other comorbidities like irritable bowel syndrome (IBS). Furthermore, quality of life can be improved by proper guidance and maintenance of life activities. Counselling and awareness about PCOS can help women increase their self-esteem and manage their symptoms the right way (Ricci, 2017). Through education, women will be able to have proper insight about their physical symptoms and will be able to manage their symptoms by adapting a healthy lifestyle and coping strategies to help them boost their quality of life. This will help them avoid major life concurring diseases in the future.

Aryal et al. (2022) observed how symptoms of PCOS are often connected to decrease in a woman's self-esteem and self-image, which may have an impact on health-related quality of life. The study was conducted among 686 women of reproductive age, and the results indicated that more than half of the respondents were determined to have a good quality of life. The most common health-related

concern reported was infertility, whereas the least concern reported was acne. Additionally, there was statistically significance found between health-related quality of life and body mass index.

Stadnicka et al. (2015) evaluated the impact of certain clinical symptoms of polycystic ovarian syndrome (PCOS) on women's sexual lives, activities, and overall quality of life. The findings indicated that women with obesity had lower quality of life scores among those with PCOS and different body mass ratios. Similarly, the quality of life was lower for women with hirsutism, and it also appeared poorer for those who received medical care for 4-6 years than for shorter or longer periods of time. There were notable variations in the domains related to sexual response.

Need & Significance of the Study

This study investigates the dimensions of emotional regulation and Quality of life among women living with Polycystic Ovary Syndrome (PCOS) compared to women without the condition. Polycystic ovary syndrome is an endocrine disorder which impacts women of reproductive age. The symptoms of PCOS are seen to impact the psychological functioning of women who are clinically diagnosed. This study aims to briefly examine the psychological or e motional regulation of women diagnosed and to investigate the differences in emotional regulation between women with PCOS and women without PCOS. By doing so, it also focuses on providing intervention plans or coping strategies for PCOS women. Problems in emotional regulation causes distress in daily activities hence impacting their Quality of life. PCOS also leads to physical symptoms like obesity, acne, hirsutism etc. which can affect the quality of life in women. Understanding the relationship of PCOS with emotional regulation and quality of life will help in identifying suitable intervention plans as well as support strategies to help women who are struggling with the disorder.

RESEARCH GAP

Although there is a lot of research done which examines both the psychological and emotional

dimensions of Polycystic Ovary Syndrome (PCOS), there is still an obvious research gap that remains when it comes to finding the degree of association of emotional regulation and quality of life in PCOS-affected and non-PCOS women. Research studies that aim to compare quality of life and emotional control in women with and without PCOS are therefore clearly necessary. The results of such research would not only close the present gap in the literature but also offer relevant understanding of all the ways that PCOS might influence ways of coping that are adaptive and psychological well-being. Furthermore, exploring distinct methods for regulating emotions used by PCOS-affected women can help build specific strategies to improve emotional well-being and quality of life in women.

METHODOLOGY

PURPOSE

The aim of this study is to carry out a comparison of the emotional regulation and Quality of life in females diagnosed with Polycystic Ovary Syndrome (PCOS) in contrast to a control group of women who do not have PCOS. Through this investigation, notable differences in emotional regulation and quality of life scores between the two groups will be recognized and assessed.

HYPOTHESIS

- **Hypothesis 1:** There will be significant difference in emotional regulation between women with PCOS and without PCOS.
- **Hypothesis 2:** There will be significant difference in quality of life between women with PCOS and without PCOS

SAMPLE

The sample included women diagnosed with PCOS and women without PCOS. The sample study population were unmarried women who are residing in India and the sample size is 104 where 52 were women diagnosed with PCOS and the other 50 included non PCOS women. Sample size is 106.

MEASURES

1. *Emotional Regulation Questionnaire (ERQ)*

Emotional regulation questionnaire (ERQ) designed by Gross and John (2003) is a 7- point Likert scale that ranges from 1 to 7 where 1 represents (strongly disagree) and 7 represents (strongly agree). It consists of 10 items created for the evaluation of how individuals manage their emotions through two methods: a) Cognitive Reappraisal b) Expressive Suppression. ERQ has shown strong reliability and validity in many studies where Cronbach's alpha coefficients ranged from 0.73 to 0.94.

2. *World Health Organization Quality of Life (WHOQOL-BREF)*

World Health Organization Quality of Life is a 26-item questionnaire developed by World Health Organization (WHO) in 1995. WHOQOL-BREF assesses quality of life through 4 domains - Physical, Psychological, social, and environmental factors. It is designed as a 5-point Likert scale which comprises of options based on intensity and evaluation levels with responses ranging from "disagree" or "not at all" (1) to "completely agree" or "extremely" (5). WHO-QOL BREF has shown strong reliability and validity meeting standards of reliability with alpha coefficients ranging from 0.70 to 0.90.

PROCEDURE

This study has used non-probability convenience sampling technique. Convenience sampling is a

non-probability approach which chooses participants for the study considering their availability and ease of access. Individuals are selected because they are relatively easy to reach and recruit for the study than randomly choosing them from a bigger population. This technique is also practical and convenient for the study. The questionnaires were filled through online google forms and informed consent and instructions were provided to the participants involved in the study Analytical Tool and Technique used is independent sample T- Test is a statistical analytical tool which compares means and finds out whether there is a significant difference between groups.

RESULT

Table 1

Group Statistics table showing differences in cognitive appraisal and expressive suppression (Emotional regulation) between PCOS and Non PCOS group

Cognitive Reappraisal	N	Mean	Standard Deviation	Std. Error
Type 1 (Non- PCOS)	52	28.67	5.649	.783
Type 2 (PCOS)	52	25.73	4.951	.687
Expressive Suppression	N	Mean	Standard Deviation	Std. Error
Type 1 (Non PCOS)	52	18.44	4.041	.560
Type 2 (PCOS)	52	17.35	3.480	.483

The group statistics table indicates that women without PCOS tend to use cognitive reappraisal

more as an emotional regulation strategy compared to women with PCOS. The mean score for cognitive reappraisal is 28.67 for the non-PCOS group and 25.73 for the PCOS group, with standard deviation scores of 5.649 and 4.951, respectively which indicates that women without PCOS tend to use cognitive reappraisal more as an emotional regulation strategy compared to women with PCOS. On the other hand, for expressive suppression, women without PCOS tend to use this strategy more, with a mean score of 17.25 for the non-PCOS group and 18.48 for the PCOS group, along with standard deviation scores of 4.041 and 3.480, respectively.

Table 2

T-Test table showing differences in cognitive reappraisal and expressive suppression (Emotional regulation) between PCOS and Non PCOS group

Independent Samples Test

t-test for Equality of Means							
						95% Confidence Interval of the Difference	
	t	df	Sig (2- Tailed)	Mean Difference	Std. Error Diff.	Lower	Upper
Cognitive	2.825	102	.006	2.942	1.042	0.876	5.008
Reap.	2.825	100.277	.006	2.942	1.042	0.876	5.009
Exp. supp	1.482	102	.041	1.096	1.050	0.371	2.563
	1.482	99.806	.041	1.096	1.050	0.371	2.563

The t-value is 2.825 with 102 degrees of freedom, and the sig. (2-tailed) value is 0.006, which is less than alpha value 0.05. This indicates a statistically significant difference in cognitive reappraisal scores between the PCOS and non-PCOS groups. The t-value for expressive suppression is 1.482 with 102 degrees of freedom, and the sig. (2-tailed) value is 0.041 which is less than the alpha value 0.05. This indicates a statistically significant difference in expressive suppression scores between the PCOS and non-PCOS groups.

Table 3

Group Statistics table showing differences in Quality of life between PCOS and Non PCOS group in domains of physical health, psychological, social and environment

Physical Domain	N	Mean	Standard Deviation	Std. Error
Type 1 (Non PCOS)	52	64.40	15.559	2.158
Type 2 (PCOS)	52	54.87	13.748	1.907
Psychological Domain	N	Mean	Standard Deviation	Std. Error
Type 1 (Non PCOS)	52	57.52	18.564	2.574
Type 2 (PCOS)	52	50.37	16.114	2.235

Social Domain	N	Mean	Standard Deviation	Std. Error
Type 1 (Non PCOS)	52	66.02	18.199	2.524
Type 2 (PCOS)	52	56.83	18.412	2.553
Environment Domain	N	Mean	Standard Deviation	Std. Error
Type 1 (Non PCOS)	52	64.12	16.566	2.297
Type 2 (PCOS)	52	60.56	15.699	2.177

The group statistics gives an overview of the mean score for the physical domain which is 64.40 non-PCOS group (TYPE 1) and 54.87 for PCOS group (TYPE 2). The overview of the mean score for the psychological domain which is 57.52 for the non-PCOS group and 50.37 for the PCOS group. The group statistics table gives an overview of the mean score for the social domain in Quality of life which is 66.02 for the non-PCOS group and 56.83 for the PCOS group. The group statistics table gives an overview of the mean score for the

environmental domain in Quality of life which is 64.12 for the non-PCOS group and 60.56 for the PCOS group. These scores suggest that suggests that, on average, women without PCOS tend to have a higher quality of life in the physical, psychological social and environmental domain compared to women with PCOS.

Table 6

T-Test table showing differences in domains of Quality of life (physical health, psychological, social and environment) between PCOS and Non PCOS group

Independent Samples Test							
t-test for Equality of Means							
					95% Confidence Interval of the Difference		
	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Diff.	Lower	Upper
Physical	3.313	102	.001	9.538	2.879	3.827	15.250
Domain	3.313	100.478	.001	9.538	2.879	3.826	15.251
Social	2.560	102	.012	9.192	3.590	2.071	16.313
Domain	2.560	101.986	.012	9.192	3.590	2.071	16.313
Env.	1.124	102	.021	3.558	3.165	0.720	7.835
Dom	1.124	101.707	.021	3.558	3.165	0.720	7.835

The t-value for physical health domain is 3.313 with 102 degrees of freedom, and the sig. (2-tailed)

value is 0.001, which is less than 0.05 indicates a statistically significant difference in the physical domain scores between the PCOS and non-PCOS groups. The t-value for psychological health domain is 2.099 with 102 degrees of freedom, and the sig. (2-tailed) value is 0.038, which is less than 0.05 indicates a statistically significant difference in the psychological domain scores between the PCOS and non-PCOS group. The t-value is social domain is 2.560 with 102 degrees of freedom, and the sig. (2-tailed) value is 0.012, which is less than 0.05 indicates a statistically significant difference in the social domain scores between the PCOS and non-PCOS groups. The t-value is environmental domain is 1.124 with 102 degrees of freedom, and the sig. (2-tailed) value is .021 which is less than 0.05 indicates a statistically significant difference in the environmental domain scores between the PCOS and non-PCOS groups.. This suggests that the null hypothesis is rejected of no significant difference in means between the two groups. There is evidence to conclude a statistically significant difference based on this test.

DISCUSSION

The study intended to explore the dimensions of emotional regulation and quality of life between two groups - Women diagnosed with PCOS and women without PCOS (control group). Firstly, the results showed a significant difference in cognitive reappraisal and expressive suppression (the domains of emotional regulation) in which group 1 (non-PCOS) ranked high in cognitive reappraisal and expressive suppression than group 2 (PCOS) which scored low in both domains. This suggested that women without PCOS tend to use cognitive reappraisal and expressive suppression more as an emotional regulation strategy when compared to women with PCOS. The results for emotional regulation indicate that women who are diagnosed PCOS resulted in having low levels of emotional regulation than women without PCOS. This finding corresponds with the study done to identify the variations in the levels of depression, stress, and emotional regulation among women with PCOS (Fenn et al., 2022) in which the results indicated that women with PCOS

have low emotional regulation than women without PCOS. Higher levels of emotion regulation are linked to high social skills and result in ethically appropriate emotions expression (Lexi, 1999). Women without PCOS exhibit high levels of emotional regulation which indicates that they can control their emotions more effectively than women with PCOS. Emotional regulation in PCOS women is also caused by the physical symptoms of the syndrome - hirsutism, weight gain and irregular menstrual cycle. Women having PCOS have elevated levels of hypersensitivity, anxiety, and stress, suggesting a challenge in handling emotions. Thirdly, the results for the physical domain of quality of life revealed that there was a significant difference in the physical health domain of quality of life in which group 1 (Non-PCOS) showed higher levels of physical health when compared with women with PCOS who ranked low in this domain. This suggested that women without PCOS tend to have a higher quality of life in the physical domain compared to women with PCOS. Fourthly, the results for psychological domain of quality of life revealed that there was a significant difference in psychological health domain of quality of life in which group 1 (non-PCOS) showed higher levels of psychological health when compared with women with PCOS who ranked low in this domain. This suggested that women without PCOS tend to have a higher quality of life in the psychological domain compared to women with PCOS. Fifthly, the results for social domain of quality of life revealed that there was a significant difference in social health domain of quality of life in which group 1 (non-PCOS) showed higher levels of social health when compared with women with PCOS who ranked low in this domain. Sixthly, the results for environmental health domain of quality of life revealed that there was a significant difference in environmental health domain of quality of life in which group 1 (non-PCOS) showed higher levels of environmental health when compared with women with PCOS who ranked low in this domain. The findings for quality of life indicates that women diagnosed with PCOS exhibit have poor quality of life when compared with women without PCOS suggesting that Polycystic ovary syndrome negatively impacts the women diagnosed with it which can have long term impacts. The findings

correspond with the study done to explore the effect of PCOS on HR-QoL among young women and to explore the moderating role of proactive coping strategies between PCOs and Health Related Quality of life (Aslam, 2023) which indicated that PCOS has negative impacts on women who are diagnosed with it. The World Health Organization defines quality of life as an individuals' own perception of their position in life in the context of culture and value system in which they live and their relation to their goals, standers, and concerns (WHO, 2017). The findings also indicate that in physical, psychological, social, and environmental, women diagnosed with the disorder showed low levels which indicates the impact of PCOS in life quality in women with PCOS. The findings also align with the previous studies done on Quality of life in PCOS which clearly focused that the PCOS not only has a negative impact on physical health but also psychological health. (Authier et al., 2020)

Lastly, the results revealed that there is a significant difference in emotional regulation as well as quality of life between women with PCOS and women without PCOS which aligns with the objectives and hypothesis of the study. Therefore, the results reject null hypothesis (There is no significant difference in emotional regulation and quality of life between women with PCOS and women without PCOS.) and accepts the alternate hypothesis (There is a significant difference in emotional regulation and quality of life between women with PCOS and women without PCOS). While the findings give proper insights about emotional regulation and quality of life in both groups), it is vital to note some restrictions that may have impact on interpreting and extending the findings. The sample size of this study, though decent for the researching aims, can be deemed restricted in the setting of portraying the wider population of females of both groups. The study having cross- sectional design, despite fitting to seize a glimpse of emotional regulation and standard of living at a particular point in time, can restrict capacity to affirm causal relations or monitor longitudinal modifications. Longitudinal research would grant a more active perception of how these elements develop over time in women having PCOS.

To address the limitations of the study, future research should conduct longitudinal studies for measuring emotional regulation and quality of life as longitudinal studies can track changes in emotional regulation and quality of life over time in women with and without PCOS. They should examine how women with PCOS use healthcare services, considering factors such as mental health service accessibility, usage trends, and obstacles to receiving treatment. This will offer perceptions into unfulfilled requirements as well as chances to enhance the provision of healthcare and emotional assistance.

CONCLUSION

The study is done to compare the emotional regulation and quality of life between two groups of women- women diagnosed with PCOS and the control group (non-PCOS). To find out variations in both groups, the study used the Emotional regulation Questionnaire (ERQ) and World health organization Quality of life Scale (WHOQOL-BREF). The results revealed significant differences in both domains of emotional regulation (Cognitive reappraisal & Expressive Suppression) between women with PCOS and the control group. The results also revealed significant variations in all domains of Quality of life (physical, psychological, social and environment) between women with PCOS and women without PCOS. In terms of emotional regulation, the findings indicated that women diagnosed with PCOS exhibited low scores in emotional regulation when compared to the control group which states that PCOS has a negative impact on women which can alter their psychological regulation leading to long term problems. In terms of Quality of life, the findings revealed that women diagnosed with PCOS have reduced quality of life when compared with the control group. PCOS women exhibited low scores in Quality of life than the control group which indicate that PCOS not only has a negative impact on emotional regulation of women diagnosed with it but also negatively affects their quality of life. So, the results of the study rejected the null

hypothesis and accepted the alternate hypothesis, by showing that there is indeed variations in emotional regulation and quality of life between both groups. Various interventions and support strategies have been introduced to help women cope with their emotions and overall well-being. Counselling and awareness about PCOS can help women increase their self-esteem and manage their symptoms the right way. Other interventions like practicing mindfulness, acceptance techniques, meditation and Yoga has also been proven quite useful in managing emotional distress in women diagnosed with PCOS. Furthermore, education and awareness about PCOS will help women to have proper insight about their physical symptoms and will be able to manage their symptoms by adapting a healthy lifestyle and coping strategies to help them boost their quality of life and overall mental well-being. The findings of the study not only contribute to the understanding of emotional regulation and quality of life in women with Polycystic Ovary Syndrome (PCOS) but also pave the way for impactful future implications in research and clinical practice. By identifying significant differences in emotional regulation and quality of life between women with and without PCOS, this study highlights several key areas for further exploration and intervention development. Longitudinal studies can be done by tracing emotional control and life excellence in women having PCOS for a long time. This method enables researchers to see transformations and patterns in these aspects, providing thoughts on how they progress with time. The longitudinal research can detect trends, stimulants, and likely treatments that might not be clear in a cross-cutting study. The Forthcoming studies should concentrate on the creation of targeted interventions as per the requirements of females dealing with PCOS. These interventions might involve psychological therapeutic methods, daily life modifications, and all-encompassing health management tactics aimed at enhancing both emotional wellness and physiological health. Recognizing the impact of cultural difference on emotion regulation and quality of life, forthcoming studies should emphasis cultural sensitivity. Tailing interventions for adjusting with cultural norms and values can enhance their relevance and effectiveness across diverse populations of women

diagnosed with PCOS ensuring that the interventions are accessible and acceptable by all Proper Guidance and maintenance of life activities is quite necessary to ensure better life quality and to enhance emotional regulation.

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