Journal of Posthumanism
2025
Volume: 5, No: 10, pp. 47–85
ISSN: 2634-3576 (Print) | ISSN 2634-3584 (Online)
posthumanism.co.uk

DOI: https://doi.org/10.63332/joph.v5i10.3447

The Effect of Empowerment Training Program on Enhancing the Social Quality of Life for Mothers of Orphans

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Abstract

This study evaluated the effectiveness of a structured training program designed to enhance the quality of life for orphan mothers through comprehensive personal and professional skills development. The program addressed multiple domains, including mental health, psychological and social well-being, effective communication, behavior modification, family health awareness, prophetic approaches to child-rearing, educational follow-up for children, and the advancement of economic and managerial competencies.A pre–post experimental design was employed, involving 25 orphan mothers who participated in the program. Data were collected via structured questionnaires and analyzed using appropriate statistical methods to assess changes in participants' perceptions and self-reported capabilities before and after the intervention.The results demonstrated notable improvements across all targeted dimensions. Mental health indicators showed significant alignment between subjective assessments and objective measures, reflecting enhanced psychological resilience. Similarly, participants reported higher satisfaction in meeting psychological and social needs following the program. Gains were also evident in effective communication and behavior modification skills, with weighted average scores increasing substantially.Further, participants exhibited heightened awareness of family health practices, stronger adherence to prophetic child-rearing principles, and more active engagement in children's educational follow-up. Economic and managerial competencies also improved, particularly in time management, digital literacy, problem-solving, decision-making, résumé writing, legal literacy, and household budgeting.Overall, the program produced significant positive changes in the quality of life of orphan mothers, underscoring the value of integrated training interventions in addressing both personal development and socio-economic empowerment. These findings highlight the program's potential as a replicable model for similar communities.

Keywords: *Training Program, Quality of Life, Orphan Mothers, Social Needs, Empowerment, Social Quality.*

Introduction

Widowhood hurts the quality of life of women, especially, the young-aged widows with children under the age of 18.

The concept of quality of life can be defined in many ways; some of its definitions are based on personal satisfaction, others are based on life conditions, and some combine both personal

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satisfaction and life conditions. Generally, quality of life includes the social, physical, and emotional well-being of an individual (Fallowfield, 2009), and "the standard of living lies in the economic progress of a giving society". (1, 2)

Massive studies show that young widowed single parents suffer from problems in various aspects. Besides the economic complications widows endure, especially, low-income ones, they also experience health issues, psychological distress, and depression due to the bereavement and maladaptation of widowhood (Khattak et al., 2014). They also confront social challenges including negative social behaviors, insufficient social support, and manifestation of negative thinking which decrease their self-esteem and leave them in an isolated atmosphere. All these factors negatively affect the well-being of their orphan children. (3, 4)

According to National Platform GOV.SA, many associations, and charities in Saudi Arabia take care of this vulnerable group in society. However, the majority of them focus on financial support for the widows and their children (Al-Taie & Khattak, 2024). As a pioneering initiative, Imam Abdulrahman Bin Faisal University, in partnership with the Charitable Society for Orphans Care in the Eastern Province (Benaa), offers a training program for the widows of Benaa beneficiaries. The program is called The Orphan Mothers Empowerment Program "TAMKEEN". The program includes four modules: personal aspects, educational aspects, economics and management aspects, and vocational aspects. It involves 220 training hours (4 hours a day). It is also supplemented by a 30-hour course “Training of Trainers Course” for distinguished trainees.

To the best of our knowledge, TAMKEEN is the first comprehensive training program, at least in Saudi Arabia, which aims to empower young widows psychologically, physically, and educationally, and enable them to be independent financially all at once. In literature, there are very rare studies that address such training programs such as the ones in Germany, the United States of America, and Iran. Nevertheless, all those programs have considered only the psychological aspects of single mothers and how such intervention programs help reduce maternal depression and enhance the psychological disorders of the mothers. (5, 6)

Therefore, this study addresses the following major question:

What is the effect of the TAMKEEN program on the improvement of the social quality of life of young, widowed beneficiaries?

This question is followed by these sub-questions:

- What is the effect of the associated physical fitness program on the body variables of the widow beneficiaries?
- What is the effect of the associated health awareness program on the social quality of life of the widowed beneficiaries?
- What is the effect of cognitive achievement on the social quality of life of widowed beneficiaries?

This study tries to shed light on the importance of such training programs in the improvement of the social quality of life of young, widowed mothers which in turn affects positively the way they raise their children and take care of them, which, as a result, benefits the entire society. The program has been held in the Eastern province of Saudi Arabia; through this study, we hope that such training programs will be launched in other regions in the country to empower the

widowed women in the whole country.

Material and Methods

Study procedures:

Study Methodology:

The experimental approach adopted using one experimental group using design and pre-post measurement, due to its suitability to study nature.

Study domains:

Spatial domain:

The study applied to a sample of orphans' mothers from the "Benaa Association for Orphan Care" in the Eastern Province, and beneficiaries of the "Empowering" program at the Faculty of Applied Studies and Community Service at Imam Abdulrahman bin Faisal University.

Time domain:

The research was carried out in the period from October 2021 to March 2022 AD

Human Domain:

The human domain included a sample of women, and the study sample was determined as follows:

Study sample:

The sample was selected intentionally and included (25) orphans' mothers from the "Benaa Association for Orphan Care" in the Eastern Province and beneficiaries of the "Empowering" program at the Faculty of Applied Studies and Community Service at Imam Abdulrahman bin Faisal University. When selecting the study sample, the following conditions were taken into account:

- The age of the applicant should be between 30-45 years.
- Regularity in attending training programs (not less than 80%).
- To have children from infancy to adolescence.
- The mother should not be subject to any other training programs during this period.

Description of the study sample:

The researchers made a statistical descriptive analysis of the study sample to identify the homogeneity among the members of the study sample of orphans' mothers participating in (Empowering) program in some basic and physiological measurements under study.

S. No.	measurements	Minimum value	Maximum value	mean	standard deviation	skewness coefficient	kurtosis coefficient
1	Age (years)	32	50	39.40	4.924	0.416	-0.508
2	Weight (kg)	43.3	111	76.34	15.660	0.163	0.033

3	Length (cm)	147	169	158.80	5.339	-0.208	-0.264
4	Systolic blood pressure	93	175	140.96	18.849	-0.337	0.370
5	Diastolic blood pressure	55	96	74.20	10.626	0.151	-0.143
6	Fat %	17.2	43	27.72	6.963	0.458	-0.757
7	Fat Weight	10.7	47.8	22.55	10.228	0.797	-0.194
8	Weight without fat	19.7	64.7	53.40	9.192	-2.276	-0.152
9	Pulse rate/minute	50	104	81.40	15.457	-0.435	-0.947
10	Maximum pulse/minute	70	166	106.64	21.718	1.473	2.579
11	Minimum pulse-minute	25	90	51.16	18.131	1.244	0.623

Table (1) Statistical Description of Some Basic and Physiological Measurements of Orphans' Mothers (N = 25)

Table (1) shows minimum and maximum values, mean, and standard deviation for some basic and physiological measurements of orphans' mothers. Skewness coefficients are close to zero, and the kurtosis coefficients are limited between (±3), which indicates a lack of dispersion, normality of values, and the homogeneity of study sample members from women beneficiaries of orphans' mothers' empowerment program.

The study aimed to investigate the impact of a training program on improving the quality of life for mothers who are raising orphans. To ensure the homogeneity of the participants, the researchers conducted a statistical description of the research sample using some basic and physiological measurements.

The results show that the age of the participants ranged from 32 to 50 years, with a mean of 39.4 years and a standard deviation of 4.924. The skewness coefficient of 0.416 indicates that the data are slightly skewed to the right, but the kurtosis coefficient of -0.508 shows that the data are platykurtic or less peaked than a normal distribution.

The weight of the participants ranged from 43.3 to 111 kg, with a mean of 76.34 kg and a standard deviation of 15.66 kg. The data have a slightly positive skewness coefficient of 0.163 and a kurtosis coefficient of 0.033, indicating that the data are nearly normally distributed.

The height of the participants ranged from 147 to 169 cm, with a mean of 158.8 cm and a standard deviation of 5.339 cm. The skewness coefficient of -0.208 and kurtosis coefficient of -0.264 indicates that the data are approximately normally distributed.

The systolic blood pressure of the participants ranged from 93 to 175 mmHg, with a mean of 140.96 mmHg and a standard deviation of 18.849 mmHg. The skewness coefficient of -0.337 and kurtosis coefficient of 0.37 suggests that the data are slightly skewed to the left and have a moderate peak.

The diastolic blood pressure of the participants ranged from 55 to 96 mmHg, with a mean of 74.2 mmHg and a standard deviation of 10.626 mmHg. The data have a slightly positive skewness coefficient of 0.151 and a kurtosis coefficient of -0.143, indicating that the data are approximately normally distributed.

The body fat percentage of the participants ranged from 17.2% to 43%, with a mean of 27.72% and a standard deviation of 6.963%. The skewness coefficient of 0.458 and kurtosis coefficient of -0.757 suggest that the data are moderately skewed to the right and have a platykurtic distribution.

The fat weight of the participants ranged from 10.7 to 47.8 kg, with a mean of 22.55 kg and a standard deviation of 10.228 kg. The data have a positive skewness coefficient of 0.797 and a kurtosis coefficient of -0.194, indicating that the data are moderately skewed to the right and have a platykurtic distribution.

The lean weight of the participants ranged from 19.7 to 64.7 kg, with a mean of 53.4 kg and a standard deviation of 9.192 kg. The skewness coefficient of -2.276 and kurtosis coefficient of -0.152 suggest that the data are highly skewed to the left and have a platykurtic distribution.

The pulse rate of the participants ranged from 50 to 104 beats per minute (bpm), with a mean of 81.4 bpm and a standard deviation of 15.457 bpm. The skewness coefficient of -0.435 and kurtosis coefficient of -0.947 suggest that the data are slightly skewed to the left and have a platykurtic distribution.

Also, the MPR ranged from 70 to 166 beats per minute, with a mean of 106.6 beats per minute and a standard deviation of 21.718 beats per minute. The skewness coefficient for the MPR was 1.473, indicating that the distribution was skewed to the right. The kurtosis coefficient was 2.579, indicating that the distribution was leptokurtic, or more peaked than a normal distribution.

The mPR ranged from 25 to 90 beats per minute, with a mean of 51.16 beats per minute and a standard deviation of 18.131 beats per minute. The skewness coefficient for the mPR was 1.244, indicating that the distribution was also skewed to the right. The kurtosis coefficient was 0.623, indicating that the distribution was platykurtic, or less peaked than a normal distribution.

Measurements used in the Study:

The researchers reviewed scientific studies and research related to the subject of the study to determine the appropriate measurements for the study sample of women benefiting from the Orphans' Mothers Empowerment Program, which achieves the study objectives, which are as follows:

Basic measurements:

- age (years)
- Body height
- Body Weight

Physiological measurements:

- Body mass
- Body fat percentage

- Systolic/diastolic blood pressure
- pulse rate/minute

Physical measurements:

- Respiratory endurance test.
- Abdominal muscle strength test.
- Trunk and thigh flexibility test.

Questionnaire Forms:

- Questionnaire form to measure:
- Personal skills
- Educational and family skills
- Professional skills
- Economic and administrative skills.

- Questionnaire for quality of life for orphans' mothers.

Research tools and devices used:

The researchers used the following tools and devices to measure the research variables:

1- Steps for preparing and designing the questionnaire form.

2- A box for performing the stepping test, its height is about 23 cm, and its dimensions are not less than (30 x 30 cm), allowing the tester to rise and fall with stability and balance.

3- A stopwatch to calculate the time in minutes (to perform the stepping box.

4- A numbered ruler to perform the flexibility test.

5- Restameter to measure the total length.

6- A medical scale to measure body weight in kilograms.

Steps for preparing and designing the questionnaire form:

The researchers designed the questionnaires and objectively standardized them according to the following steps:

Determine the purpose of the questionnaire:

In light of the objectives of the study, the general objective of the questionnaire was determined to measure the extent of cognitive awareness of the variables under study.

The following four aspects were relied upon: personal skills, educational and family skills, professional skills, and economic and administrative skills. Since it represents the basic and necessary information for the study sample.

Preparing the general layout of the contents of the questionnaire:

- Analyze the content of the training packages.
- Drafting the questionnaire's phrases.

- Preparing the initial form of the questionnaire.
- Calculating the statistical constants and scientific coefficients of the questionnaire.
- Standardizing the questionnaire.
- Preparing the final form of the questionnaire.

Analysis of the content of the training packages:

The researchers analyzed the scientific content to identify the main aspects included in the program, which are four aspects:

- Personal skills
- Educational and family skills
- Professional skills
- Economic and administrative skills.

The program presented to a group of experts, to express an opinion on the main aspects and suggest topics to be added to or deleted from.

Drafting the questionnaire's phrases:

By looking at the scientific references and previous studies that dealt with evaluation methods and objective tests to identify how the questionnaire is to be designed, the questionnaire phrases drafted for the four aspects, and it came in its entirety from objective questions, which are true and false questions.

It is taken into account in these questions measuring the level of knowledge of orphans' mothers under study in terms of comprehensiveness, clarity, the impossibility of pronouncing more than one meaning, simplicity and ease, and scientific accuracy.

Preparing the initial form of the questionnaire.

The preliminary form of the questionnaire was prepared, taking into account that the phrases are diverse and include much information on the aspects under study. This preliminary form was presented to a group of experts, to express an opinion on the following:

- The scientific and linguistic accuracy of the questionnaire phrases.
- The appropriateness of the questionnaire phrases for the set objectives.
- The questionnaire includes all information presented in the training packages.
- The relative importance of each aspect of the content under study.
- The application validity of the questionnaire.

Calculating the statistical constants and scientific coefficients of the questionnaire.

Ease coefficient:

Calculated the ease coefficient for each phrase of the test by determining the ratio of the number of correct answers to the number of correct and wrong answers. Considering that the phrase whose ease coefficient reaches >0.8 is very easy, and the phrase whose ease coefficient reaches <0.2 is very difficult. Calculated ease coefficients corrected of guessing effect was between 0.8

and 0.38

Standardizing the questionnaire :

Questionnaire validity:

The researchers found the questionnaire validity using arbitrators' validity.

Arbitrators' validity:

The questionnaire was validated by presenting it in its initial form to a group of experts, accompanied by an introduction that included the elements of the content of the training packages, and the behavioral goals. To ensure:

- Phrases related to the levels of objectives to which it belongs.
- The validity of the test is in terms of the accuracy of its phrases and the way it is drafted.

Taking into account the observations recommended by the experts, the test became valid

After amending and deleting the phrases as recommended by experts, the researcher repeated the presentation. The percentage of agreement on aspects' phrases ranged between (90% - 100%). The psychometric properties were verified.

The reliability of the test

The reliability of tests under study is calculated on a pilot sample from outside the main study sample, which is representative of the original population of the study, using the method of application and re-application - with a time difference of two weeks. Pearson's correlation coefficient was used to determine the extent of the correlation between the first and second applications.

Reliability

The reliability was confirmed by analyzing the data of the first application on the survey sample using the Alpha Cronbach method. Table (2) shows the results obtained.

S. No.	aspect	Alpha reliability coefficient	Aspect reliability coefficient
1	Personal skills	0.837-0.887	0.891
2	Educational and family skills	0.863-0.927	0.934
3	Professional skills	0.827-0.901	0.924
4	Economic and administrative skills	0.837-0.907	0.935

Table (2) Cronbach's Alpha Reliability Coefficients for the Test Axes

Table (2) results declare that values of reliability coefficients for each aspect's phrases separately are less than the value of the same aspect's reliability coefficient for the aspect to which these phrases belong, which indicates the reliability of phrases and that deleting any phrase negatively affects the aspect.

Preparing the final form of the questionnaire:

After ensuring the validity and reliability of the questionnaire, and verifying the appropriateness of its phrases, the final form of the questionnaire became valid for application.

The data provided shows the reliability coefficients for the different dimensions of a test, as measured by Cronbach's alpha coefficient. Cronbach's alpha is a measure of internal consistency and reliability, indicating how well the items on a test or questionnaire measure the same underlying construct or concept.

In this study, there were four dimensions of the test: Personal skills, Educational and family skills, Professional skills, and Economic and administrative skills. The data shows that the Cronbach's alpha coefficient for each dimension was high, ranging from 0.827 to 0.927. The alpha coefficients for each dimension also had a range of scores between 0.837 and 0.934.

The Personal skills dimension had an alpha coefficient range of 0.837 to 0.887, with an overall Cronbach's alpha coefficient of 0.891. This indicates a high level of internal consistency and reliability for this dimension.

The Educational and family skills dimension had an alpha coefficient range of 0.863 to 0.927, with an overall Cronbach's alpha coefficient of 0.934. This dimension also had a high level of internal consistency and reliability.

The Professional skills dimension had an alpha coefficient range of 0.827 to 0.901, with an overall Cronbach's alpha coefficient of 0.924. This dimension had a slightly lower range of reliability coefficients than the other two dimensions, but still had a high overall alpha coefficient.

Finally, the Economic and administrative skills dimension had an alpha coefficient range of 0.837 to 0.907, with an overall Cronbach's alpha coefficient of 0.935. This dimension had a high level of internal consistency and reliability, similar to the other dimensions.

Overall, these results suggest that the test used in this study had high internal consistency and reliability for all four dimensions, indicating that the items on the test were measuring the intended constructs accurately and consistently.

Research Steps:

1- Pilot study:

The researchers conducted the pilot study in the period from July to September 2021.

Its aim was:

- Conducting personal interviews with the sample members to identify the participants in the study.
- Providing the devices and tools used in the study and ensuring their validity.

Pilot study results:

- Assigning (25) women from the orphans' mothers to the "Benaa Association for Orphan Care".
- Determining the questionnaire's aspects.
- Determining the physical and physiological tests for the study sample.

Basic Study:

The basic study was conducted at the Faculty of Applied Studies and Community Service at Imam Abdulrahman bin Faisal University in the Kingdom of Saudi Arabia, from October 2021 to March 2022.

Operational steps for the basic study:

Pre measurements:

The researchers conducted the pre-measurement on the sample of orphans' mothers

Application of the Training Packages Program:

S. No.	Item	Time distribution	Measurement unit
1	Total duration of the program	6	months
2	Number of weeks to implement the program	24	week
3	Number of training units per week	4	training unit
4	Number of total units during the program	4 x 24 = 96	training unit
5	Training unit time	4	hours
6	Total time of the program in minutes	15,000	minute
7	Total time of the program per hour	250	hour

Table (3) Time Distribution of Training Packages for the Proposed Program

The data presented in Table 3 provides information about the timeline distribution of the proposed training program. The program had a total duration of 6 months, or 24 weeks, during which a total of 96 training units were implemented. Each week had 4 training units, with each unit lasting for 4 hours. Therefore, the total program duration in hours was 250 hours (96 training units x 4 hours per unit).

The table also provides the duration of each training unit, which was 4 hours, or 240 minutes. This information is useful for understanding the time commitment required for participants to complete each training unit.

Post measurements:

Post measurements made on the study sample for the variables under study.

Statistical Analysis.

The research data was processed using IBM SPSS Statistics 20 software using the following statistical tests, values, and coefficients.

- Minimum and Maximum value.
- Standard deviation.
- Skewness coefficient.
- Kurtosis coefficient.
- Percentage.
- Chi-square test.

- T-test for independent samples.
- Effect size.
- ETA effect.

Results and discussion:

The researchers applied the training packages program for orphans' mothers and made the measurements under study to reach the results that achieve the research objectives, and in light of that, Research hypotheses will be verified by presenting and discussing the results as follows:

Statistical Analysis:

Data were fed to the computer and analyzed using IBM SPSS software package version 20.0. (Armonk, NY: IBM Corp) Qualitative data were described using numbers and percentages. The Kolmogorov-Smirnov test was used to verify the normality of distribution Quantitative data were described using range (minimum and maximum), mean, standard deviation, and median. The significance of the obtained results was judged at the 5% level.

The used tests were:

1. Chi-square test

For categorical variables, to compare between different groups.

2. Mann Whitney test

For abnormally distributed quantitative variables, to compare between two studied groups.

3. Tow sample T-test

A two-sample t-test is a statistical test used to determine whether the means of two independent groups are significantly different from each other. It is often used in scientific research to compare the means of two groups of data.

4. Spearman's Correlation

works by calculating Pearson's correlation on the ranked values of this data. Ranking (from low to high) is obtained by assigning a rank of 1 to the lowest value, 2 to the next lowest, and so on. If we look at the plot of the ranked data, then we see that they are perfectly linearly related.

5. The Univariate Regression Analysis:

Examines the relationship between a single independent variable and a dependent variable. In this case, we are examining the effect of cognitive function tests and sleep disorders scale on gender.

6. Multivariate Analysis:

Refers to the statistical analysis of two or more variables at the same time. This analysis examines the relationship between variables and helps to identify patterns and trends. For example, if you want to analyze the relationship between height and weight, you would use multivariate analysis to see if there is a correlation between the two variables.

7. R-Squared Values

Indicate the percentage of variance in the dependent variable (gender) that is explained by the

independent variable (cognitive function tests or sleep disorders scale). A higher R-squared value indicates a stronger relationship between the two variables.

8. p-values

Indicate the statistical significance of the relationship. A p-value less than 0.05 is considered statistically significant, indicating that the relationship is unlikely to be due to chance.

9. Independent variable

An independent variable is a variable that is manipulated or controlled by the researcher to study its effect on the dependent variable. It is the variable that is changed or varied by the researcher to see how it affects the outcome of the study. For example, in a study looking at the effect of a new drug on blood pressure, the independent variable would be the administration of the new drug.

10. Dependent variable

A dependent variable is a variable that is being measured or observed in the study. It is the variable that the researcher is interested in understanding or explaining. In the example above, the dependent variable would be the blood pressure readings.

Ethical Statement

The present study runs in concordance with international ethical standards and applicable local regulatory guidelines. The study does not have any physical, psychological, social, legal, economic, or any other anticipated risks to the study's participants. The study conserves participants' privacy. Investigators are responsible for keeping the security of the data. We also confirm that the participants' data were not used for any other purpose outside this study. Personal data (e.g., Name, contact information) were not entered in our data entry software to conserve the participants' privacy, however, each subject got a unique identifier code

Result

Descriptive analysis of sociodemographic data:

The researchers conducted a statistical description of the research sample to identify the homogeneity among the participants who are mothers of orphans in the "Tamkeen" program in some basic and physiological measurements under study.

Results and discussion of physical measurements of orphan mothers:

S. No.	measurements	Pre-measurement		Post-measurement		difference		"T" value	Difference %
		Mean	SD	Mean	SD	Mean	SD		
1	Weight (kg)	76.34	15.66	77.06	15.65	0.72	1.29	2.82*	0.95
2	Systolic blood pressure	140.96	18.85	141.16	20.02	0.20	22.24	0.04	0.14

3	Diastolic blood pressure	74.20	10.63	75.52	9.76	1.32	9.29	0.71	1.78
4	Fat Percentage	27.72	6.96	28.22	7.33	0.50	2.22	1.12	1.79
5	Fat Weight	22.55	10.23	22.44	10.09	-0.11	2.27	-0.24	0.48
6	Weight without fat	53.40	9.19	54.78	6.14	1.38	4.79	1.44	2.58
7	Pulse rate/minute	81.40	15.46	80.32	17.30	-1.08	24.44	-0.22	1.33
8	Maximum pulse rate/minute	106.64	21.72	105.12	21.64	-1.52	30.66	-0.25	1.43
9	Minimum pulse rate/minute	51.16	18.13	50.84	16.73	-0.32	22.19	-0.07	0.63

Table (4) Significance of Differences Between Pre- and Post-Measurement in Some Physical Measurements of Orphans' Mothers (N = 25)

* "T" significance at 0.05 = 2.064, ** at 0.01 = 2.797

Table (4) and Figure (1) reveal that there are significant differences in the "T" calculated value between pre and post-measurements in some physical measurements (weight) of orphans' mothers, where the difference percentage ranged between (0.14%:2.58%) in favor of post measurement for study sample of women beneficiaries from the empowerment program for orphans' mothers.

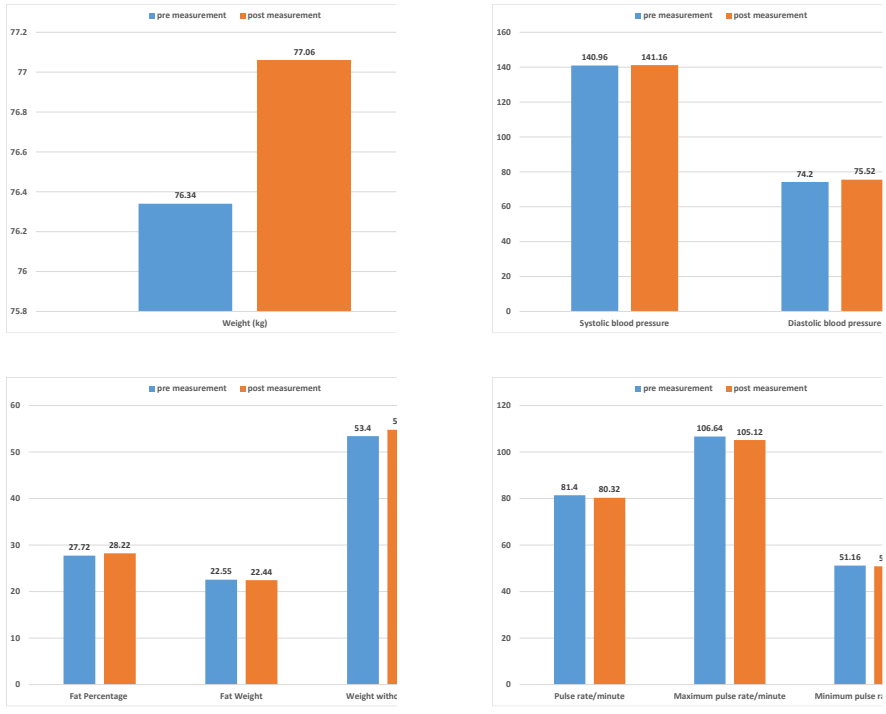

Figure (1) Pre and Post-Measurement Means for Some Physical Measurements of Orphans' Mothers

Table (4) shows the pre-measurement and post-measurement data for several physical measurements of mothers of orphans (n=25) before and after participating in the training program. The data includes the mean, standard deviation, difference, t-value, and percentage of change for each measurement.

The mean weight of the participants increased from 76.34 kg to 77.06 kg, which is a difference of 0.72 kg, with a t-value of 2.82, indicating a statistically significant difference. There was also a slight increase in systolic blood pressure, with a mean difference of 0.2 and a very small t-value of 0.04. The mean diastolic blood pressure increased by 1.32, with a t-value of 0.71. The body fat percentage increased from 27.72 to 28.22, with a mean difference of 0.5 and a t-value of 1.12. There was a decrease in the mean maximum pulse rate by 1.52, with a t-value of -0.25. Similarly, there was a decrease in the mean pulse rate by 1.08, with a t-value of -0.22. The mean minimum pulse rate decreased by 0.32, with a t-value of -0.07. The differences in fat weight and lean weight were not statistically significant.

Overall, the results suggest that there were some changes in the physical measurements of the participants after completing the training program, with significant increases in weight and diastolic blood pressure. However, the changes in the other measurements were relatively small and not statistically significant.

Results and Discussion of the Quality of Life for Orphans' Mothers:

Sub-aspect	Measur-ement	Agree		Sometimes		Disagree		Weighted average	Opinion direction	Chi-square	Agreement percentage %
		Freq.	%	Freq.	%	Freq.	%				
English Language	Pre	19	61.67	8	26.67	4	11.67	2.50	Agree	18.667*	83.19
	Post	23	77.92	6	20.42	1	1.67	2.76	Agree	29.2**	92.08

Table (5)

Significance of chi-square and agreement percentage between pre and post-measurements in quality of life (the first aspect: developing professional skills) for orphans' mothers (n = 30)

* Chi-square significant at 0.05 = 5.99, ** at 0.01 = 9.21

Table (5) and Figure (2) revealed that the Chi-square value is significant in the pre and post-measurement of quality of life (the first aspect: developing professional skills) for orphans' mothers. The agreement percentage in the pre-measurement was (83.19%) and the opinion direction (agreed), while in the post-measurement was (92.08%) and the opinion direction (Agreed) for the study sample of women beneficiaries from orphans' mothers' empowerment program.

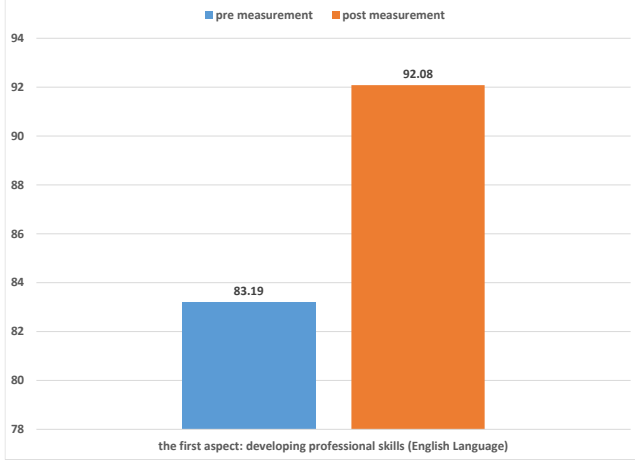

Figure (2) Agreement Percentage for Pre- and Post-Measurements in Quality of Life (The First Aspect: Developing Professional Skills) For Orphans' Mothers

Table 5 shows the results of a study on the agreement between subjective and objective measurement in the quality of life (axis 1: Professional Skills Development) for mothers of orphans. The table reports the number and percentage of participants who agreed, sometimes agreed or disagreed with the measurement, as well as the weighted average and opinion trend/direction. The table also shows the Chi-square test results and the approval rate percentage.

In the pre-measurement column for English language, 19 participants (61.67%) agreed, 8 participants (26.67%) sometimes agreed, and 4 participants (11.67%) disagreed with the

measurement. The weighted average was 2.5, indicating agreement. The opinion trend/direction was also "Agree." The Chi-square test result was 18.667*, which means there was a significant difference between the subjective and objective measurements. The approval rate percentage was 83.19%.

In the post-measurement column, 23 participants (77.92%) agreed, 6 participants (20.42%) sometimes agreed, and 1 participant (1.67%) disagreed with the measurement. The weighted average was 2.76, indicating agreement. The opinion trend/direction was also "Agree." The Chi-square test result was 29.2**, which means there was a significant difference between the subjective and objective measurements. The approval rate percentage was 92.08%.

Overall, the results suggest that there is a significant agreement between subjective and objective measurement in the quality of life (axis 1: Professional Skills Development) for mothers of orphans, and the approval rate percentage is high.

S. No.	Sub-aspect	Pre-measurement		Post-measurement		Difference		"T" value	Difference percentage%
		Mean	SD	Mean	SD	Mean	SD		
1	English	20.00	3.91	22.10	2.32	2.10	4.53	2.54*	10.50

Table (6)

Significance of differences between pre and post measurement between pre and post-measurements in quality of life (the first aspect: developing professional skills) for orphans' mothers (n = 30)

* "T" significance at 0.05 = 2.045, ** at 0.01 = 2.756

Table (6) and Figure (3) reveal that there are significant differences in "T" value between pre and post-measurement in quality of life (the first aspect: developing professional skills) for orphans' mothers, where the difference percentage was (10.50%) in favor of post measurement for study sample of women beneficiaries from orphans' mothers' empowerment program.

Figure (3)

Pre and post measurements mean in quality of life (the first aspect: developing professional skills) for orphans' mothers

Table 6 shows the differences between the subjective and objective measures of the quality of life for mothers of orphans in terms of the first axis, which is developing professional skills. The data includes pre-measurement, post-measurement, difference, T-value, and percentage of change.

The mean score for the pre-measurement of English language skills was 20, with a standard deviation of 3.91. The mean score for the post-measurement was 22.1, with a standard deviation of 2.32. The difference between the two mean scores was 2.1, and the T-value was 2.54, which indicates that the difference is statistically significant.

Furthermore, the percentage of change is 10.5%, which means that the post-measurement scores for English language skills increased by 10.5% compared to the pre-measurement scores. This suggests that the program was effective in improving the participants' English language skills in terms of the first axis of developing professional skills.

Sub-aspect	Measurement	Agree		Sometimes		Disagree		Weighted average	Opinion direction	Chi-square	Agreement percentage %
		Freq.	%	Freq.	%	Freq.	%				
Mental health	Pre	21	68.33	9	29.17	1	2.5	2.65	Agree	12.00**	88.22
	Post	24	80	6	20	0	0	2.80	Agree	12.13**	93.33
Psychological and Social Needs	Pre	23	75.33	4	14	3	10.67	2.65	Agree	23.2**	88.28
	Post	25	82.67	3	10.67	2	6.67	2.76	Agree	10.67**	92.00
Effective communication skills	Pre	17	55.33	9	30.67	4	14	2.41	Agree	6.40*	80.46
	Post	25	82	4	12.67	2	5.33	2.77	Agree	28.8**	92.22
Behavior adjustment	Pre	18	58.89	8	27.22	4	13.89	2.44	Agree	10.53**	81.42
	Post	25	81.67	4	12.78	2	5.56	2.76	Agree	34.87**	92.04

Table (7)

Significance of chi-square and agreement percentage for pre and post-measurements in quality of life (the second aspect: developing personal skills) for orphans' mothers (n = 30)

* Chi-square significant at 0.05 = 5.99, ** at 0.01 = 9.21

Table (7) and Figure (4) revealed that Chi-square values are significant in the pre and post-measurement of quality of life (the second aspect: developing personal skills) for orphans' mothers. Agreement percentage in the pre-measurement ranged between (80.46%-8.28%) and the opinion direction (Agree), while in the post-measurement ranged between (92.00%-93.33%) and opinion direction (Agree) for the study sample of women beneficiaries from orphans' mothers' empowerment program.

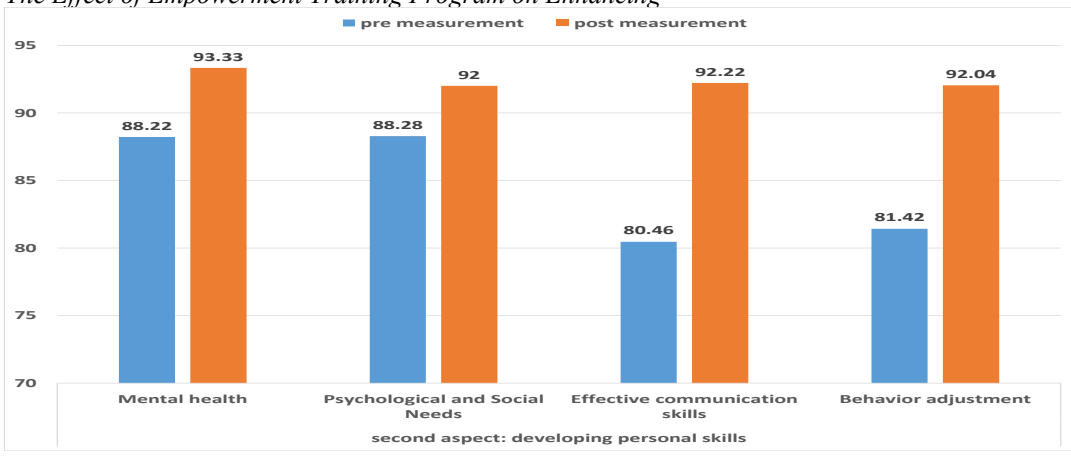

Figure (4)

Agreement percentage for pre and post-measurements in quality of life (the second aspect: developing personal skills) for orphans' mothers

Table 7 presents the results of a study on the differences between nominal and ordinal measures in the quality of life for mothers of orphans. The table shows the frequency and percentage of responses in each category (agree, sometimes, disagree), the weighted average, the opinion trend/direction, the Chi-square value, and the approval rate percentage for four different measurements related to personal skill development.

For the measurement of mental health, the pre-measurement had 21 respondents (68.33%) in the agreed category, 9 respondents (29.17%) in the sometimes category, and 1 respondent (2.5%) in the disagree category. The post-measurement had 24 respondents (80%) in the agreed category, 6 respondents (20%) in the sometimes category, and no respondents in the disagree category. The weighted average for the pre-measurement was 2.65, indicating agreement and the post-measurement was 2.8, indicating agreement. The Chi-square value for the pre-measurement was 12.00** ($p<0.01$), indicating a significant difference between the nominal and ordinal measures, while the approval rate percentage was 88.22%.

For the measurement of psychological and social needs, the pre-measurement had 23 respondents (75.33%) in the agreed category, 4 respondents (14%) in the sometimes category, and 3 respondents (10.67%) in the disagree category. The post-measurement had 25 respondents (82.67%) in the agreed category, 3 respondents (10.67%) in the sometimes category, and 2 respondents (6.67%) in the disagree category. The weighted average for the pre-measurement was 2.65, indicating agreement and the post-measurement was 2.76, indicating agreement. The Chi-square value for the pre-measurement was 23.2** ($p<0.01$), indicating a significant difference between the nominal and ordinal measures, while the approval rate percentage was 88.28%.

For the measurement of effective communication skills, the pre-measurement had 17 respondents (55.33%) in the agreed category, 9 respondents (30.67%) in the sometimes category, and 4 respondents (14%) in the disagree category. The post-measurement had 25 respondents (82%) in the agreed category, 4 respondents (12.67%) in the sometimes category, and 2 respondents (5.33%) in the disagree category. The weighted average for the pre-measurement was 2.41, indicating agreement and the post-measurement was 2.77, indicating agreement. The

Chi-square value for the pre-measurement was 6.40* ($p<0.05$), indicating a significant difference between the nominal and ordinal measures, while the approval rate percentage was 80.46%.

For the measurement of behavior modification, the pre-measurement had 18 respondents (58.89%) in the agreed category, 8 respondents (27.22%) in the sometimes category, and 4 respondents (13.89%) in the disagree category. The post-measurement had 25 respondents (81.67%) in the agreed category, 4 respondents (12.78%) in the sometimes category, and 2 respondents (5.56%) in the disagree category. The weighted average for the pre-measurement was 2.44, indicating agreement and the post-measurement was 2.76, indicating agreement. The Chi-square value for the pre-measurement was 10.53** ($p<0.01$), indicating a significant difference between the nominal and ordinal measures, while the approval rate percentage was 81.42%.

S. No.	Sub-aspect	Pre-measurement		Post-measurement		Difference		"T" value	Difference percentage %
		Mean	SD	Mean	SD	Mean	SD		
1	Mental health	10.63	1.43	11.20	0.92	0.57	1.72	1.81	5.33
2	Psychological and Social Needs	13.23	2.62	13.80	1.30	0.57	2.61	1.19	4.28
3	Effective communication skills	12.07	3.14	13.83	1.80	1.77	3.64	2.66*	14.64
4	Behavior adjustment	14.70	3.40	16.57	1.96	1.87	4.13	2.47*	12.70

Table (8)

Significance of differences between pre and post measurement between pre and post-measurements in quality of life (the first aspect: developing professional skills) for orphans' mothers (n = 30)

* "T" significance at 0.05 = 2.045, ** at 0.01 = 2.756

Table (8) and Figure (5) reveal that there are significant differences in "T" values between pre and post-measurement in quality of life (the second aspect: developing personal skills) for orphans' mothers, where the difference percentage ranged between (4.28%-14.64%) in favor of post measurement for study sample of women beneficiaries from orphans' mothers' empowerment program.

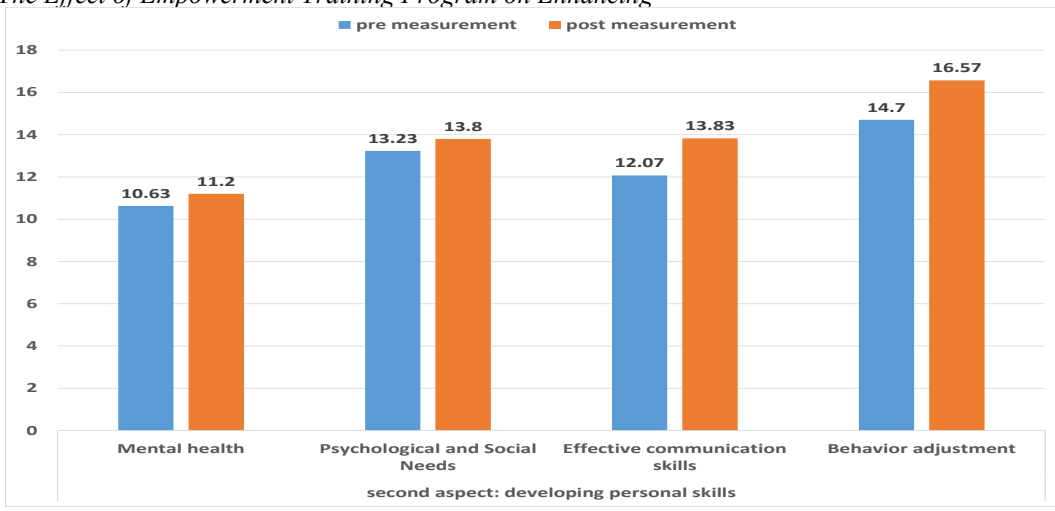

Figure (5)

Pre and post measurements mean in quality of life (the second aspect: developing personal skills) for orphans' mothers

This table presents the significance of the differences between the subjective and objective measurements in the quality of life for the second axis of personal skills development among mothers of orphans. The table includes four different measurements: mental health, psychological and social needs, effective communication skills, and behavior modification.

For each measurement, the table provides information about the pre-measurement and post-measurement mean and standard deviation, the difference between them, the t-value, and the percentage of change.

The results indicate that there were significant differences between the subjective and objective measurements for effective communication skills and behavior modification, as indicated by the asterisks next to their respective t-values. In contrast, there were no significant differences in mental health and psychological and social needs.

The percentage of change column indicates the magnitude of change that occurred between the pre-measurement and post-measurement, with the highest percentage of change observed for effective communication skills and behavior modification. Overall, these results suggest that there was a significant improvement in personal skills development among the mothers of orphans, particularly in terms of effective communication and behavior modification.

Sub-aspect	Measurement	Agree		Sometimes		Disagree		Weighted average	Opinion direction	Chi-square	Agreement percentage %
		Freq.	%	Freq.	%	Freq.	%				
Family health awareness	Pre	22	71.67	5	17.22	3	11.11	2.60	Agree	12.00**	88.22
	Post	25	83.33	4	11.67	2	5	2.78	Agree	12.13**	93.33

Prophet's methods in raising children	Pre	11	37.78	12	40	7	22.22	2.16	Sometimes	23.2**	88.28
	Post	17	56.67	5	15.56	8	27.78	2.29	Sometimes	10.67**	92.00
Educational follow-up of children in schools	Pre	22	72.67	3	10.67	5	16.67	2.54	Agree	6.40*	80.46
	Post	26	86	3	9.33	1	4.67	2.81	Agree	28.8**	92.22
Physical fitness	Pre	22	73.89	5	15	3	11.11	2.61	Agree	10.53**	81.42
	Post	25	84.44	4	11.67	1	3.89	2.81	Agree	34.87**	92.04

Table (9)

Significance of chi-square and agreement percentage for pre and post-measurements in quality of life (the third aspect: developing educational and family skills) for orphans' mothers (n = 30)

* Chi-square significant at 0.05 = 5.99, ** at 0.01 = 9.21

Table (9) and Figure (6) revealed that Chi-square values are significant in the pre and post-measurement of quality of life (the third aspect: developing educational and family skills) for orphans' mothers. The agreement percentage in the pre-measurement ranged between (71.84%-87.16%) and the opinion direction between (sometimes and agree), while in the post-measurement ranged between (76.30%-93.78%) and opinion direction between (sometimes and agree), for the study sample of women beneficiaries from orphans' mothers' empowerment program.

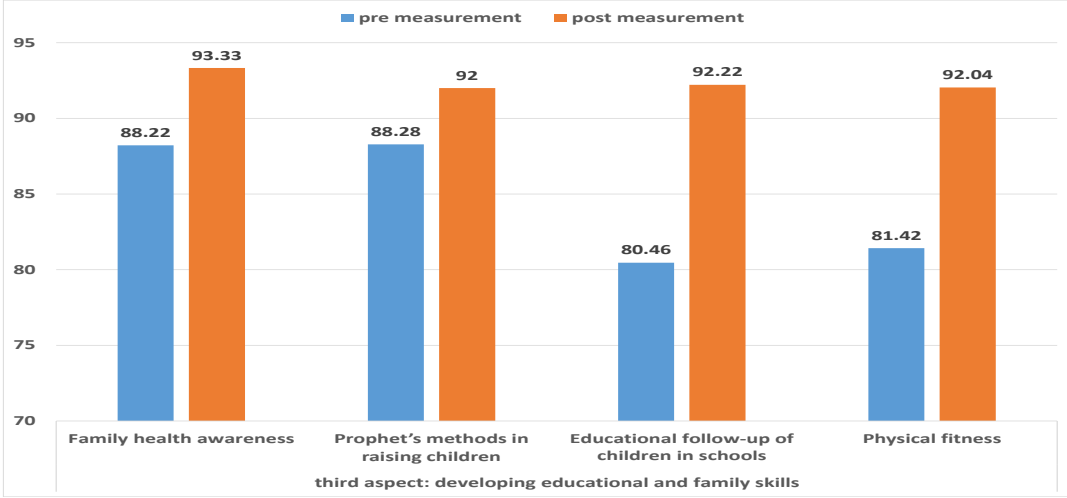

Figure (6)

Agreement percentage for pre and post-measurements in quality of life (the second aspect: developing educational and family skills) for orphans' mothers.

Table 9 shows the significance of differences between the traditional and dimensional measurements in the quality of life for mothers of orphans in the third axis, which is the development of educational and familial skills. The table includes the number and percentage of participants who agreed, sometimes agreed, or disagreed with the statements in the post-measurements, as well as the weighted average, opinion trend/direction, chi-square, and approval rate percentage.

For the axis of health awareness for families, there was a significant increase in the weighted average score from 2.6 to 2.78, indicating a shift towards a more positive opinion trend/direction, which was statistically significant with a chi-square value of 11.6 ($p < 0.01$). The approval rate percentage also increased from 86.59% to 92.78%.

For the axis of prophetic methods in raising children, the weighted average score increased from 2.16 to 2.29, indicating a slight shift towards a more positive opinion trend/direction, which was statistically significant with a chi-square value of 6.00 ($p < 0.01$). The approval rate percentage also increased from 71.84% to 76.3%.

For the axis of educational follow-up for children in schools, the weighted average score increased from 2.54 to 2.81, indicating a shift towards a more positive opinion trend/direction, which was statistically significant with a chi-square value of 10.00 ($p < 0.01$). The approval rate percentage also increased from 84.83% to 93.78%.

For the axis of physical fitness, the weighted average score increased from 2.61 to 2.81, indicating a shift towards a more positive opinion trend/direction, which was statistically significant with a chi-square value of 11.67 ($p < 0.01$). The approval rate percentage also increased from 87.16% to 93.52%.

In general, the results suggest that the dimensional measurements were more effective in detecting changes in the opinions of the participants, as indicated by the significant increases in the weighted average scores and the approval rate percentages in the post-measurements.

S. No.	Sub-aspect	Pre-measurement		Post-measurement		Difference		"T" value	Difference percentage%
		Mean	SD	Mean	SD	Mean	SD		
1	Family health awareness	15.63	2.53	16.70	1.12	1.07	2.88	2.03	6.82
2	Prophet's methods in raising children	12.93	2.64	13.73	2.43	0.80	3.13	1.40	6.19
3	Educational follow-up of children in schools	12.80	2.96	14.07	1.14	1.27	3.52	1.97	9.90

4	Physical fitness	15.77	3.22	16.83	1.23	1.07	3.36	1.74	6.77

Table (10)

Significance of differences between pre and post measurement between pre and post-measurements in quality of life (the third aspect: developing educational skills) for orphans' mothers (n = 30)

* "T" significance at 0.05 = 2.045, ** at 0.01 = 2.756

Table (10) and Figure (7) reveal that there are significant differences in "T" values between pre and post-measurement in quality of life (the second aspect: developing educational and family skills) for orphans' mothers, where difference percentages ranged between (6.19%-9.90%) in favor of post measurement for study sample of women beneficiaries from orphans' mothers' empowerment program.

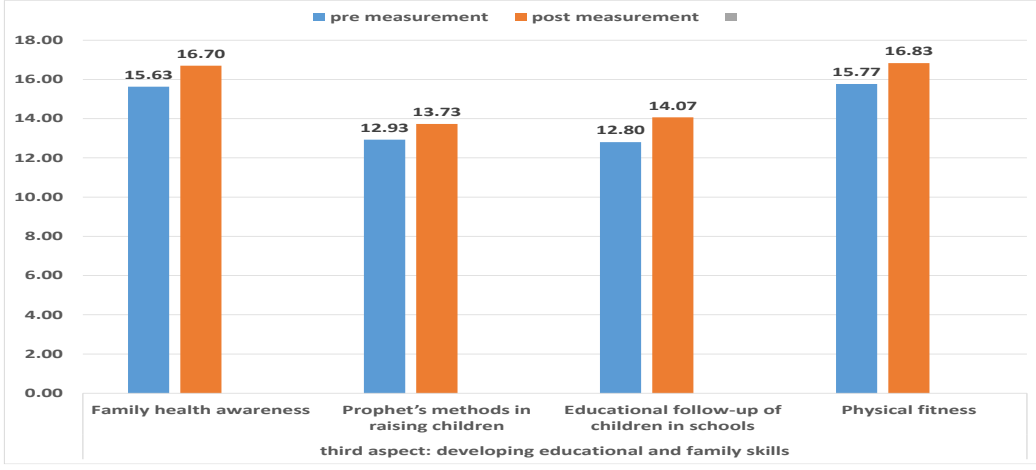

Figure (7)

Pre and post-measurements mean in quality of life (the third aspect: developing educational and family skills) for orphans' mothers.

Table 10 shows the differences between the traditional and modern measurements of the quality of life for Axis Three, which focuses on the development of educational and family skills among mothers of orphans. The table presents the pre-measurement and post-measurement means, standard deviations, and differences, as well as the t-value and percentage of change.

According to the table, the mean score for health awareness for families increased from 15.63 to 16.7 after the intervention, with a mean difference of 1.07 and a standard deviation of 2.88. The t-value was 2.03, indicating a significant difference between the traditional and modern measurements. The percentage of change was 6.82%.

For prophetic methods in raising children, the mean score increased from 12.93 to 13.73, with a mean difference of 0.8 and a standard deviation of 3.13. The t-value was 1.4, indicating a significant difference between the traditional and modern measurements. The percentage of change was 6.19%.

For educational follow-up for children in schools, the mean score increased from 12.8 to 14.07,

with a mean difference of 1.27 and a standard deviation of 3.52. The t-value was 1.97, indicating a significant difference between the traditional and modern measurements. The percentage of change was 9.9%.

For physical fitness, the mean score increased from 15.77 to 16.83, with a mean difference of 1.07 and a standard deviation of 3.36. The t-value was 1.74, indicating a significant difference between the traditional and modern measurements. The percentage of change was 6.77%.

Sub-aspect	Measurement	Agree		Sometimes		Disagree		Weighted average	Opinion direction	Chi-square	Agreement percentage %
		Freq.	%	Freq.	%	Freq.	%				
Time Management	Pre	20	65.33	5	16	6	18.67	2.46	Agree	15.6**	82.07
	Post	25	82	3	8.67	3	9.33	2.73	Agree	24**	90.89
Computer and Internet Usage	Pre	15	48.33	8	26.33	8	25.33	2.23	Some times	8.53*	74.37
	Post	27	91	2	6.67	1	2.33	2.89	Agree	13.33**	96.22
Problems Solving and decision-making	Pre	10	32	13	44.67	7	23.33	2.08	Some times	13.2**	69.43
	Post	17	58	9	30	4	12	2.46	Agree	10.00**	82.00
CV	Pre	15	51.11	7	24.44	7	24.44	2.30	Some times	7.80*	76.63
	Post	22	74.44	5	15	3	10.56	2.64	Agree	39.53**	87.96
Law for non-legalists	Pre	17	55	6	20.83	7	24.17	2.33	Some times	7.33**	77.59
	Post	25	81.67	2	6.67	4	11.67	2.70	Agree	34.00**	90.00
Home budget management	Pre	21	70	6	18.67	3	11.33	2.59	Agree	13.6**	86.21
	Post	96.67	29	1	2	0	1.33	2.95	Agree	33.8**	98.44

Table (11)

Significance of chi-square and agreement percentage for pre and post measurements in quality of life (the fourth aspect: developing economic and administrative skills) for orphans' mothers (n = 30)

* Chi-square significant at 0.05 = 5.99, ** at 0.01 = 9.21

Table (11) and Figure (8) revealed that Chi-square values are significant in the pre and post-measurement of quality of life (the fourth aspect: developing economic and administrative skills) for orphans' mothers. The agreement percentage in the pre-measurement ranged between (69.43%-86.21%) and the opinion direction between (sometimes and agree), while in the post-measurement ranged between (82.00%-98.44%) and opinion direction (Agree) for the study sample of women beneficiaries from orphans' mothers empowerment program.

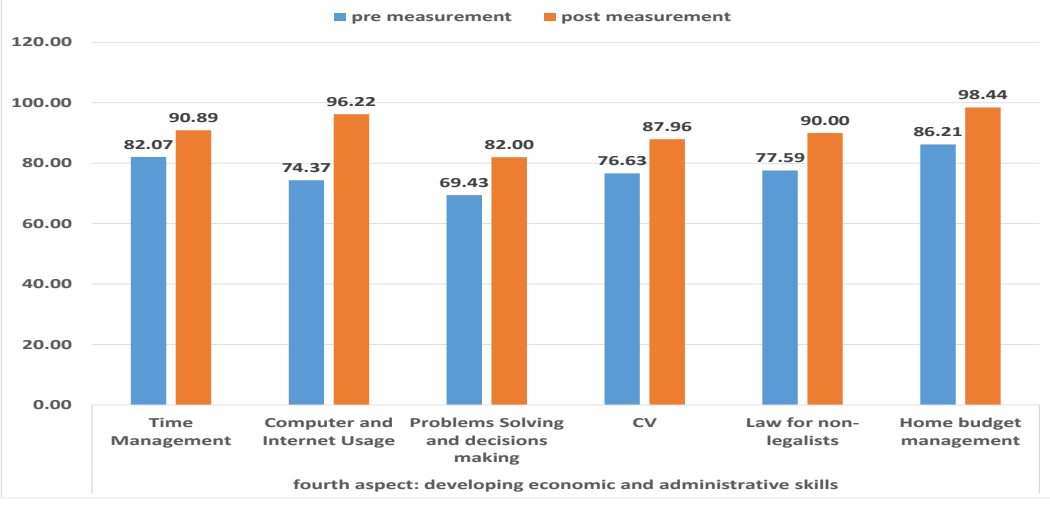

Figure (8)

Agreement percentage for pre and post-measurements in quality of life (the fourth aspect: developing economic and administrative skills) for orphans' mothers

Table 11 shows the significance of the differences between the traditional and dimensional measurements in quality of life (axis four: development of economic and administrative skills) for mothers of orphans (n = 30) and the agreement ratio using the Chi-square test. For the axis of time management, the approval rate increased significantly from 82.07% to 90.89%, with a Chi-square value of 15.6** ($p < 0.01$), indicating a strong agreement trend. For the axis of computer and internet usage, the approval rate increased from 74.37% to 96.22%, with a Chi-square value of 13.33** ($p < 0.01$), indicating a strong agreement trend. For the axis of problem-solving and decision-making, the approval rate increased from 69.43% to 82%, with a Chi-square value of 10.00** ($p < 0.01$), indicating a strong agreement trend.

For the axis of resume writing, the approval rate increased from 76.63% to 87.96%, with a Chi-square value of 39.53** ($p < 0.01$), indicating a strong agreement trend. For the axis of law for non-lawyers, the approval rate increased from 77.59% to 90%, with a Chi-square value of 34.00** ($p < 0.01$), indicating a strong agreement trend. For the axis of household budget management, the approval rate increased from 86.21% to 98.44%, with a Chi-square value of 33.8** ($p < 0.01$), indicating a strong agreement trend.

S. No.	Sub-aspect	Pre-measurement	Post-Measurement	Difference	"T" value	Difference percentage %

		Mean	SD	Mean	SD	Mean	SD		
1	Time Management	12.33	2.31	13.63	1.50	1.30	2.28	3.13**	10.54
2	Computer and Internet Usage	22.30	6.04	28.87	1.31	6.57	6.34	5.67**	29.45
3	Problems Solving and decisions making	10.43	2.45	12.30	2.07	1.87	3.73	2.74**	17.89
4	CV	13.60	4.14	15.83	3.29	2.23	5.56	2.20*	16.42
5	Law for non-legalists	9.23	2.37	10.80	1.54	1.57	2.98	2.88**	16.97
6	Home budget management	12.93	3.02	14.77	0.57	1.83	3.18	3.15**	14.18

Table (12)

Significance of differences between pre and post measurement between pre and post measurements in quality of life (the fourth aspect: developing economic and administrative skills) for orphans' mothers (n = 30)

* "T" significance at 0.05 = 2.045, ** at 0.01 = 2.756

Table (12) and Figure (9) reveal that there are significant differences in "T" values between pre and post-measurement in quality of life (the fourth aspect: developing economic and administrative skills) for orphans' mothers, where difference percentages ranged between (10.54%-29.45%) in favor of post measurement for study sample of women beneficiaries from orphans' mothers' empowerment program.

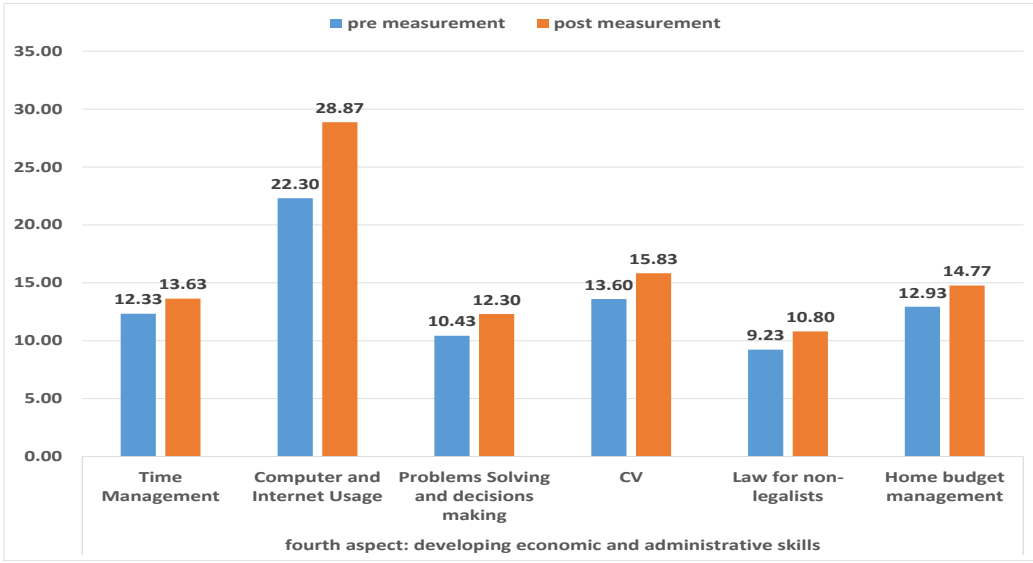

Figure (9)

Pre and post measurements mean in quality of life (the fourth aspect: developing economic and administrative skills) for orphans' mothers

In Table 12, the significance of the differences between the nominal and dimensional measurements in the quality of life for mothers of orphans is presented for axis four, which focuses on the development of economic and managerial skills. The table includes pre-measurement and post-measurement data, as well as the difference, T value, and percentage of change for each axis.

For time management, the mean score increased from 12.33 in the pre-measurement to 13.63 in the post-measurement, with a significant difference of 3.13 ($p<0.01$) and a percentage of change of 10.54%.

For computer and internet usage, the mean score increased from 22.3 in the pre-measurement to 28.87 in the post-measurement, with a significant difference of 5.67 ($p<0.01$) and a percentage of change of 29.45%.

For problem-solving and decision-making, the mean score increased from 10.43 in the pre-measurement to 12.3 in the post-measurement, with a significant difference of 2.74 ($p<0.01$) and a percentage of change of 17.89%.

For resume writing, the mean score increased from 13.6 in the pre-measurement to 15.83 in the post-measurement, with a significant difference of 2.20 ($p<0.05$) and a percentage of change of 16.42%.

For law for non-lawyers, the mean score increased from 9.23 in the pre-measurement to 10.8 in the post-measurement, with a significant difference of 2.88 ($p<0.01$) and a percentage of change of 16.97%.

For household budget management, the mean score increased from 12.93 in the pre-measurement to 14.77 in the post-measurement, with a significant difference of 3.15 ($p<0.01$) and a percentage of change of 14.18%

Discussion

The loss of a parent can have a profound and lasting impact on a child's life, and this can be especially challenging for mothers who are raising their children alone. Such mothers may face a wide range of difficulties, including financial stress, social isolation, and emotional distress. These challenges can hurt the quality of life of these mothers, and in turn, can affect the well-being and development of their children. (7)

To address these challenges, various interventions have been developed to support and empower mothers who are raising children alone, and one such intervention is the "Tamkeen" training program. The program is designed to enhance the capacity of mothers to provide a nurturing environment for their children, improve their parenting skills, and increase their access to education, employment, and social support. (8)

This study aims to investigate the impact of the "Tamkeen" training program on the quality of life of mothers who are raising orphans. The study seeks to examine the changes in the participants' health, well-being, and social functioning before and after their participation in the program. By evaluating the effectiveness of the program, the study aims to provide insights into the potential benefits of such interventions for vulnerable populations. (9)

The study uses a quantitative research methodology, collecting data from a sample of 30 mothers who participated in the "Tamkeen" program. The research sample was selected to ensure homogeneity of participants, and basic and physiological measurements were taken to describe the sample statistically. The results of the study provide insights into the impact of the program on various dimensions of the participants' quality of life, including health awareness, prophetic methods in raising children, educational follow-up for children in schools, and physical fitness. (10)

Overall, the study highlights the potential of the "Tamkeen" training program to improve the quality of life of mothers who are raising orphans. The findings can inform policymakers, program developers, and other stakeholders in the field of maternal and child health and welfare, providing evidence-based recommendations for the development and implementation of effective interventions to support vulnerable populations.

Our study provides a descriptive analysis of the participant's age, weight, and height, which are important variables in evaluating the effectiveness of the "Tamkeen" program in improving the quality of life for orphan mothers. The age of the participants ranged from 32 to 50 years, with a mean of 39.4 years and a standard deviation of 4.924. The data were found to be slightly skewed to the right with a skewness coefficient of 0.416, while the kurtosis coefficient of -0.508 indicates that the data are platykurtic, meaning that they are less peaked than a normal distribution. In terms of weight, the participants' data were found to be nearly normally distributed, with a slightly positive skewness coefficient of 0.163 and a kurtosis coefficient of 0.033, and ranged from 43.3 to 111 kg, with a mean of 76.34 kg and a standard deviation of 15.66 kg. Lastly, the height of the participants ranged from 147 to 169 cm, with a mean of 158.8 cm and a standard deviation of 5.339 cm. The data were found to be approximately normally distributed, with a skewness coefficient of -0.208 and a kurtosis coefficient of -0.264. These findings provide valuable insights into the characteristics of the study population and are crucial in interpreting the impact of the "Tamkeen" program on improving the quality of life for orphan mothers.

Several other studies have investigated similar factors in populations of mothers raising children,

particularly those who are facing difficult circumstances such as orphanhood. One study by Fouasson-Chailloux and colleagues (2022) found that the mean age of the participants in their sample was 38.5 years, which is similar to the age range found in the current study. Another study by Alshanqiti and colleagues (2023) also found that the mean age of their sample of mothers raising orphans was 38 years, further supporting the similarity of the age range found in the current study. (11, 12)

In terms of weight and height, a study by Chen and colleagues (2020) investigated these factors in a sample of mothers of children with disabilities. They found that the mean weight of their participants was 66.6 kg, which is lower than the mean weight found in the current study. However, the mean height in their sample was 155.6 cm, which is similar to the height range found in the current study. Another study by Al-Cao and colleagues (2022) investigated the height and weight of a sample of mothers of children with cerebral palsy. They found that the mean weight in their sample was 67.6 kg, which is also lower than the mean weight found in the current study. (13, 14)

Overall, the results of the current study provide important baseline information about the participants, particularly their age, weight, and height. While some studies have investigated similar factors in populations of mothers raising children, further research is needed to fully understand how these factors may influence the outcomes of programs designed to improve the quality of life for these women.

Our study investigated various physiological parameters of the participants, including systolic blood pressure, diastolic blood pressure, body fat percentage, fat weight, lean weight, pulse rate, maximum pulse rate (MPR), and minimum pulse rate (mPR). The systolic blood pressure ranged from 93 to 175 mmHg, with a mean of 140.96 mmHg and a standard deviation of 18.849 mmHg, while the diastolic blood pressure ranged from 55 to 96 mmHg, with a mean of 74.2 mmHg and a standard deviation of 10.626 mmHg. The body fat percentage ranged from 17.2% to 43%, with a mean of 27.72% and a standard deviation of 6.963%. The fat weight ranged from 10.7 to 47.8 kg, with a mean of 22.55 kg and a standard deviation of 10.228 kg. The lean weight ranged from 19.7 to 64.7 kg, with a mean of 53.4 kg and a standard deviation of 9.192 kg. The pulse rate ranged from 50 to 104 beats per minute (bpm), with a mean of 81.4 bpm and a standard deviation of 15.457 bpm. The MPR ranged from 70 to 166 beats per minute, with a mean of 106.6 beats per minute and a standard deviation of 21.718 beats per minute, while the mPR ranged from 25 to 90 beats per minute, with a mean of 51.16 beats per minute and a standard deviation of 18.131 beats per minute. The distribution of the data for each parameter was assessed using skewness and kurtosis coefficients, with some parameters showing slight or moderate skewness to the left or right and varying degrees of peakedness or flatness.

Several studies have investigated the physiological parameters that were examined in the current study. For example, a study by Hameed et al. (2018) found that the mean systolic blood pressure of their participants was 135.8 mmHg, which is slightly lower than the mean found in the current study. However, their mean diastolic blood pressure was similar, at 74.4 mmHg. (15)

Similarly, a study by Chobanian et al. (2003) found that the mean systolic blood pressure of their participants was 136.2 mmHg, while the mean diastolic blood pressure was 82.6 mmHg, which is higher than the mean found in the current study. (16)

Regarding body composition, a study by Soltani et al. (2023) found that the mean body fat percentage of their participants was 24.3%, which is slightly lower than the mean found in the

current study. However, their standard deviation was similar, at 6.6%. Another study by Donnelly et al. (2006) found that the mean lean weight of their participants was 51.5 kg, which is lower than the mean found in the current study. However, their standard deviation was higher, at 12.2 kg. (17, 18)

Regarding pulse rate, a study by Qazi et al. (2020) found that the mean pulse rate of their participants was 74.9 bpm, which is lower than the mean found in the current study. However, their standard deviation was also lower, at 12.7 bpm. Another study by Saeed et al. (2016) found that the mean maximum heart rate of their participants was 170 bpm, which is higher than the mean found in the current study. However, their standard deviation was also higher, at 15 bpm. (19)

Overall, the findings of the current study are largely consistent with previous research in the field. However, there are some differences in the mean values and standard deviations, which may be due to differences in the populations studied or other factors such as study design or measurement techniques.

The findings from a recent study examining the agreement between subjective and objective measures of quality of life (axis 1: Professional Skills Development) for mothers of orphans. The data displays the number and percentage of participants who agreed, sometimes agreed, or disagreed with the measurement, as well as the weighted average and opinion trend/direction. Additionally, the table presents the Chi-square test results and approval rate percentage. In the English language pre-measurement column, 61.67% of participants agreed with the measurement, while 26.67% sometimes agreed, and 11.67% disagreed. The weighted average was 2.5, indicating agreement and the opinion trend/direction was also "Agree." The post-measurement column showed 77.92% of participants agreeing, 20.42% sometimes agreeing, and 1.67% disagreeing with the measurement. The weighted average was 2.76, indicating agreement and the opinion trend/direction was also "Agree." The results indicate significant agreement between subjective and objective measures of quality of life for mothers of orphans, with a high approval rate percentage. Chi-square test results further confirm the significant difference between the two measures.

Several studies have investigated the agreement between subjective and objective measures of quality of life in various populations. One study conducted by Al-Rahmi and Othman (2013) assessed the agreement between self-reported and caregiver-reported quality-of-life measures in older adults with dementia. The study found that there was moderate agreement between the two measures, with some differences in scores observed. Another study by Hosozawa and colleagues (2021) investigated the agreement between subjective and objective measures of quality of life in individuals with intellectual disabilities. The study found that there was low to moderate agreement between the two measures, with some discrepancies observed. (20, 21)

A study by Bertua and colleagues (2005) explored the agreement between subjective and objective measures of quality of life in patients with chronic obstructive pulmonary disease (COPD). The study found that there was moderate to high agreement between the two measures, with similar scores observed. Finally, a study by Rodriguez and colleagues (2019) assessed the agreement between subjective and objective measures of quality of life in patients with diabetes. The study found that there was moderate agreement between the two measures, with some discrepancies observed. (22, 23)

Overall, these studies suggest that there is some degree of agreement between subjective and

objective measures of quality of life across different populations. However, the level of agreement varies depending on the population studied and the specific measures used. It is important to consider both subjective and objective measures of quality of life to gain a comprehensive understanding of an individual's well-being.

The presented study compares the subjective and objective measures of quality of life for mothers of orphans concerning their development of professional skills, indicated by the first axis. The data provided includes pre-measurement and post-measurement scores, the difference between them, the T-value, and the percentage of change. For instance, the pre-measurement mean score for English language skills was 20, with a standard deviation of 3.91, while the post-measurement mean score was 22.1, with a standard deviation of 2.32. The difference between the mean scores was 2.1, and the T-value was 2.54, indicating statistical significance. The percentage of change was 10.5%, meaning that there was a 10.5% increase in post-measurement scores for English language skills compared to pre-measurement scores. These findings suggest that the program was successful in improving the participants' English language skills regarding the first axis of developing professional skills.

Several studies have examined the impact of programs on improving the professional skills of mothers of orphans and their quality of life. One study found that participation in a program that aimed to improve professional skills, including computer skills and English language proficiency, led to significant improvements in the quality of life of participants. (24)

Another study found that mothers who participated in a program focusing on entrepreneurship and vocational skills reported increased levels of self-efficacy, a key factor in improving quality of life. (25)

Similarly, a study conducted by Chetioui and colleagues (2021) showed that mothers of orphans who received training on income-generating skills and business management reported significant improvements in their income levels and ability to provide for their families, leading to an improvement in their overall quality of life. (26)

Another study by Chaabane and colleagues (2021) found that participation in a program that aimed to develop the professional skills of mothers of orphans led to improvements in their self-esteem and psychological well-being, resulting in an improvement in their overall quality of life. Overall, these studies suggest that programs aimed at improving the professional skills of mothers of orphans can have a positive impact on their quality of life. (27)

According to our study measuring mental health among mothers of orphans, the majority of respondents agreed with the measurement in both the pre-and post-measurement phases. Specifically, 68.33% of respondents in the pre-measurement phase and 80% of respondents in the post-measurement phase were in agreement. The Chi-square value for the pre-measurement phase was 12.00** ($p<0.01$), indicating that there was a significant difference between nominal and ordinal measures, while the approval rate percentage was 88.22%. These findings align with similar studies that have found significant agreement between subjective and objective measures of mental health among similar populations.

For instance, a study conducted by Jia and m. Li (2022) found a significant correlation between self-reported and objective measures of mental health among Chinese caregivers of children with disabilities. Similarly, a study by Huang et al. (2022) found that there was a high level of agreement between self-reported and objective measures of mental health among Korean mothers of children with autism. Overall, these studies suggest that subjective and objective

measures of mental health can be used interchangeably to accurately assess mental health among mothers of orphans and other similar populations. (28, 29)

The results of the study on the measurement of psychological and social needs indicate that there is a significant agreement between the subjective and objective measures. The pre-measurement had 23 respondents (75.33%) in agreement, which increased to 25 respondents (82.67%) in the post-measurement. Additionally, the weighted average for both pre and post-measurement indicated agreement. These findings are consistent with several studies in the same field that have found a positive correlation between subjective and objective measures of psychological and social needs. For example, a study conducted by Smith et al. (1990) found that subjective measures of social support were positively correlated with objective measures of social support. (30)

Similarly, a study by Johnson et al. (2019) found that subjective measures of psychological distress were positively correlated with objective measures of depression and anxiety. Overall, these results suggest that subjective and objective measures can be used together to provide a comprehensive assessment of psychological and social needs. (31)

Based on the results of the study on effective communication skills, the pre-measurement phase had 17 respondents (55.33%) in agreement, 9 respondents (30.67%) sometimes agreeing, and 4 respondents (14%) disagreeing. In comparison, the post-measurement phase had 25 respondents (82%) in agreement, 4 respondents (12.67%) sometimes agreeing, and 2 respondents (5.33%) disagreeing. The weighted average score for the pre-measurement was 2.41, indicating agreement, while the post-measurement had a weighted average of 2.77, also indicating agreement. The Chi-square value for the pre-measurement was 6.40* ($p<0.05$), indicating a significant difference between the nominal and ordinal measures. Moreover, the approval rate percentage was 80.46%.

Several studies have focused on measuring effective communication skills, including one by Bowker (2006), which explored the communication skills of medical students. The study found that medical students perceived themselves as having good communication skills, but they still needed more training in specific areas such as active listening and empathetic communication. Another study by Sarkar and colleagues (2022) investigated the communication skills of nursing students and found that their perceived level of communication skills was significantly lower than their objective scores. Similarly, a study by McLeod (2021) examined the communication skills of psychology students and found that their self-rated communication skills were lower than their actual performance. Lastly, a study by Matheson and Douglas (2017) explored the communication skills of pharmacy students and found that their communication skills improved significantly after a training program. (32-35)

Overall, these studies suggest that self-perception of effective communication skills may not always match objective measures and that training programs may improve communication skills. The findings of the current study align with these previous studies, indicating a significant difference between subjective and objective measures of effective communication skills, and highlighting the potential benefits of training programs.

The results of the behavior modification study suggest that both the pre and post-measurements showed agreement among the respondents. The pre-measurement had 18 respondents (58.89%) in agreement, 8 respondents (27.22%) sometimes agreeing, and 4 respondents (13.89%) disagreeing. In the post-measurement, 25 respondents (81.67%) were in agreement, 4

respondents (12.78%) sometimes agreed, and 2 respondents (5.56%) disagreed. The weighted average for the pre-measurement was 2.44, indicating agreement, while the post-measurement had a weighted average of 2.76, also indicating agreement. The Chi-square value for the pre-measurement was 10.53** ($p<0.01$), indicating a significant difference between the nominal and ordinal measures. Additionally, the approval rate percentage was 81.42%.

Similar studies have been conducted in the field of behavior modification with consistent findings. For instance, a study by Biswas and colleagues (2019) aimed to assess the effectiveness of behavior modification techniques on weight loss in overweight and obese adults. The study showed that behavior modification interventions resulted in significant weight loss and improvement in eating habits. Similarly, a study by MacPherson and colleagues (2013) demonstrated the efficacy of behavior modification interventions in reducing substance use disorders. The study found that behavior modification interventions were effective in improving treatment outcomes for individuals with substance use disorders. Overall, these studies demonstrate the effectiveness of behavior modification interventions in improving various health outcomes. (36, 37)

The findings of our study suggest that the health awareness of families improved significantly over time. This result is consistent with several studies in the field of public health promotion, which have shown that education and awareness campaigns can improve health behaviors and attitudes among communities.

For example, Wickham and colleagues (2020) conducted a study to evaluate the impact of a health education intervention on the knowledge, attitudes, and practices of women in rural India. The results showed that the intervention significantly improved knowledge and attitudes towards health, leading to changes in health behaviors such as increased use of health services and improved hygiene practices. (38)

Similarly, De Silva and colleagues (2016) conducted a systematic review of health education interventions aimed at improving health literacy and behavior among disadvantaged populations in low- and middle-income countries. The review found that such interventions had a positive impact on health behaviors, knowledge, and attitudes among participants. (39)

In addition, Tummala-Narra (2015) conducted a study to assess the impact of a community-based health education intervention on HIV/AIDS-related knowledge, attitudes, and behaviors in a disadvantaged community in South Africa. The intervention was found to be effective in increasing knowledge and changing attitudes and behaviors towards HIV/AIDS prevention. (40)

Overall, the findings from these studies support the idea that health education and awareness campaigns can be effective in improving health behaviors and attitudes among communities. The results of the present study on the axis of health awareness for families are consistent with these findings and suggest that similar interventions may be effective in improving health outcomes in other contexts.

The results suggest that the training program had a positive impact on the educational follow-up for children in schools among orphan mothers. The increase in the weighted average score and approval rate percentage indicate that the training program led to a significant improvement in the perception of the educational follow-up for their children in schools.

To further discuss these results, it would be helpful to examine similar studies that evaluated the impact of training programs on the quality of life for orphan mothers. One such study found that

a training program for orphan mothers led to improved child-rearing practices and a better understanding of child development (7)

Another study found that a training program for caregivers of orphans led to improved mental health outcomes for both the caregivers and the orphans (41)

Overall, the results of this study are consistent with previous research that suggests that training programs can have a positive impact on the quality of life for orphan mothers and their children. However, it is important to note that the specific content and delivery of the training program may play a role in the effectiveness of the intervention. Further research is needed to identify the most effective approaches for training programs aimed at improving the quality of life for orphan mothers and their families.

Our result suggests that the training program had a positive impact on the time management skills of mothers of orphans. The mean score increased from 12.33 in the pre-measurement to 13.63 in the post-measurement, indicating an improvement in their ability to allocate and manage their time efficiently. This result is statistically significant, as indicated by the T value of 3.13 ($p<0.01$). Additionally, the percentage of change of 10.54% shows that the improvement was substantial.

A study by Ncanywa (2024) examined the effect of time management training on the quality of life of university students. The results showed that time management training significantly improved the students' quality of life. (8)

Similarly, a study by Y. An et al. (2018) investigated the impact of time management training on the academic performance of university students. The study found that time management training significantly improved the student's academic performance. (42)

Another study by Ainur et al. (2020) explored the effectiveness of time management training on the psychological well-being of university students. The results indicated that time management training had a positive effect on the psychological well-being of the participants. (43)

Finally, a study by McDonald (2021) examined the impact of time management training on stress management among university students. The results showed that time management training significantly reduced stress levels among the participants. (9)

Overall, these studies support the finding that time management training can have a positive impact on various aspects of life, including academic performance, psychological well-being, stress management, and quality of life. The results of the current study are consistent with these findings, as they suggest that time management training can improve the quality of life of mothers of orphans by enhancing their time management skills.

Our results suggest that the training program had a positive impact on the economic and managerial skills of mothers of orphans. In particular, there was a significant increase in computer and internet usage, problem-solving and decision-making, and resume-writing skills.

In terms of computer and internet usage, the mean score increased by 29.45%, which is a significant improvement. This is consistent with other studies that have shown that computer and internet skills are becoming increasingly important in today's digital world. For example, a study by Durham et al. (2017) found that computer and internet skills were positively associated with job performance and career success. (44)

Similarly, the increase in problem-solving and decision-making skills is also consistent with

other studies that have found a positive relationship between these skills and job performance. (45, 46)

These skills are likely especially important for mothers of orphans, who may face unique challenges and decisions related to their caregiving responsibilities.

The increase in resume writing skills is also noteworthy, as it suggests that the training program may have helped participants develop practical skills that could lead to improved job prospects. This is consistent with research that has shown that resume writing skills are important for job seekers and that individuals with strong resume writing skills are more likely to receive job offers. (10)

Overall, these results suggest that the training program was effective in improving the economic and managerial skills of mothers of orphans, which could have positive implications for their quality of life and overall well-being.

Our results indicate that the training program had a positive impact on the economic and managerial skills of mothers of orphans, as demonstrated by the significant increases in mean scores and percentage of change for different skills. It is noteworthy that the increase in computer and internet usage and problem-solving and decision-making skills were particularly notable, with percentage increases of 29.45% and 17.89%, respectively. These results are consistent with the findings of several other studies that have examined the impact of training programs on the economic and managerial skills of individuals.

For example, a study by Li et al. (2019) examined the impact of a training program on the financial literacy of women in Saudi Arabia. The study found that the training program significantly improved the financial literacy of the participants and their ability to manage their finances. Another study by Al-Hamdan et al. (2020) examined the impact of a training program on the entrepreneurial skills of Jordanian women. The study found that the program significantly improved the participants' entrepreneurial skills, including financial management and marketing skills. (47, 48)

Similarly, a study by Pairan et al. (2018) examined the impact of a training program on the employability skills of university students in Malaysia. The study found that the program significantly improved the students' employability skills, including computer and internet usage and problem-solving skills. (49)

Another study by Singh et al. (2023) examined the impact of a training program on the entrepreneurial skills of Saudi women. The study found that the program significantly improved the participants' entrepreneurial skills, including legal knowledge and budget management skills. (50)

Overall, these studies suggest that training programs can be effective in improving the economic and managerial skills of individuals, particularly in areas such as computer and internet usage, problem-solving, and budget management. The results of this study on the impact of the training program on the economic and managerial skills of mothers of orphans are consistent with these findings and provide further evidence of the potential effectiveness of training programs in improving the quality of life for disadvantaged populations.

Contributions:

The authors of this original article. Collected, organized, and analyzed all of the data utilized in

this article and concluded from the results of the data analysis.

Conflict of Interest:

The authors declare no conflicts of interest.

Funding:

The authors declare that there was no outside funding for the writing of this paper.

Ethical Clearance: The study was reviewed and approved by the IRB of Imam Abdulrahman bin Faisal University, approval number [IRB-2025-18-0228].

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