

## THE CORRELATION BETWEEN ORPHANAGES' INTERIOR DESIGN AND CHILDREN'S PSYCHOSOCIAL ADAPTATION

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### ABSTRACT

The purpose of this study is to understand the correlation between orphanages' interior design and the psychosocial adaptation of children (orphans) and the extent of orphanages' ability to meet their needs. This study uses descriptive analysis and examines the orphanage and its orphans and their activities. This study examined 20 employees, called "surrogate mother" interviewing them and asking their opinion regarding interior design and how the lighting, colors, or walls or supplementary equipment and accessories used. The study also considered the employees and surrogate mother' levels of education and experience.

The data were fully treated through a psychosocial adaptation scale prepared by the researcher and were obtained from the participants through private meetings. The data analysis, however, was handled by the SPSS statistical program. The results show that employees with a university degree (bachelor's) and five to 10 years of experience were more effective in helping orphans adjust psychosocially, this being linked to the interior design of the orphanage, which facilitated their adaptation. The findings draw our attention to the developmental, psychological, and social needs of orphans with regard to the interior design of orphanages that allow their better adaptation.

**KEYWORDS:** Psychosocial Dimension of Interior Design, Psychosocial Adaptation, Orphanages, Al Rabwa Orphanages in Riyadh KSA, Orphans

### INTRODUCTION

Dwellings are considered among the most important necessities that provide dignity to people in general and to orphans specifically. Orphans sleep and live in their dwelling and eat most of their meals there; it is a refuge from the stress of the day and they can take care of their personal needs there.

A dwelling is therefore a building people go to for shelter that contains all the necessities, conveniences, equipment, appliances, and devices that they need or desire in order to be healthy in body and spirit, along with their families. The dwelling is also a shelter or protected space in which people can be sheltered from outside influences (Afifi, 1998).

As stated by Shibani (1992:72),

*"Care of orphans in the Kingdom of Saudi Arabia has increased, and children without familial care have received special attention. Plans and programs have been established, expanded and improved to provide more care and attention to these children as work takes place to provide services which are needed in such institutions".*

Development strategies and their plans and programs have focused on improving the state of Saudi individuals in all aspects, beginning with childhood, since children are considered the core of society. Considerable effort has therefore been made to provide individuals opportunities so that they may enjoy their foundational rights. A healthy beginning starts with a sound familial and social environment, allowing children to actively participate later on in the development and stability of their society and nation and in the promotion of Islam. However, if a child's natural family, for certain reasons, does not provide him or her with what is needed to satisfy most of the child's social and psychological needs, then the state must take the initiative and perform its role by taking the place of the natural family as much as possible. The state thus provides some of what the child has been denied by taking on the role of protector and provider of shelter to children in special circumstances, that is, those who have not been provided with sound familial care (Afifi, 1998; Radadi, 2003:25–28, 33).

In addition, the 16th article of the eighth development plan (1425–1430, or 2004–2009 AD) contains a program that deals with the care of orphans through four social protection roles; 12 orphanages for social education, for both boys and girls; and two model social education institutions. The plan discusses number of individuals who would benefit from the care of orphans (1912) in 1423 (2002 AD) and the Ministry of Employment and Social Affairs presented a group of non-institutional services for caring for orphans as part of a family care program. To improve the quality of services, the plan encourages the progress of social institutions (Afifi, 1998).

Children's sound social upbringing is tied to being in a family setting that meets their needs and allow them to develop. It is also tied a nurturing relationship with their mother or surrogate mother in their early years to meet their emotional needs; the lack of such a relationship in a child's early years typically leads to behavioral problems, since children act out when they lack security and a sense of belonging and are prone to withdrawal or aggressive responses. Bowlby (1952) and Mahdi (1991) pointed out that children deprived of parental care manifest a number of symptoms, including anxiety, indifference, and aggression.

It is also clear that housing institutions did not fulfill their duties in important areas related to the children's psychological needs (Afifi, 1998). Mahdi (1991) mentioned that institutions caring for orphans had succeeded in satisfying their physical needs but had failed in one degree or another to satisfy their various psychosocial needs. This leads to numerous issues, such as a lack of psychological compatibility with self and others.

Chawla (2003) concluded that adjusting children's behavior teaching them to protect their environment from an early age have a significant impact on their environment, since they then enjoy it to a greater degree. Mahdi (1991) indicated that most environmental problems are problems of behavior and values and that, when dealing with these issues with a child, one must begin with the goal of developing the child's path in life, thoughts, and values. These then have a positive impact on the child's direct environment, such as the child's house and yard, leading to successful psychosocial adaptation and a sense of security. Based on this, these housing institutions need more research to determine the problems in the social upbringing of orphans; the methods, forms, and treatment types used to overcome these problems; and the ways to develop the services offered.

Researchers must therefore focus on these children to address and overcome their problems, especially given a Muslim society. The Muslim religion calls for social solidarity and close family ties, which are the core cultural foundations of Muslim society. Care for this segment of Saudi society begins with the principles of Sharia law, since Islam is a religion of solidarity. Therefore, society must care for its individuals in certain ways (Afifi, 1998; Saadallah, 1990).

Motivated by the lack of sufficient scientific knowledge of the social adjustment, this study contributes to the literature by examining these changes. The importance of this study lies in uncovering these changes. The researcher hopes that the results of this study will benefit this deprived segment of society through recommendations regarding the development of programs for orphans and an increase in their effectiveness. The study aims to do so in such a way that it aids in forming therapeutic plans that help these children to adjust psychosocially in a sound manner and to face problems moving from one institution to another.

The social services profession serving children in general and special needs children in particular has worked with the belief that orphans is a part of society and that, by caring for and raising them, they become capable of participating in the development of society and the economy, just like every other member of society (Afifi, 1998). For that reason, this study is important because its subject has not been significantly raised by Saudi researchers, especially with regard to children with special needs who are in the middle or end of childhood or at the beginning of adolescence. This type of study is also considered very important by the Ministry of Social Affairs, especially with regard to orphans, who make up a high percentage of residents in social institutions, reaching 33% at the Riyadh Social Protection Home in 1427 (2006 AD). The rate reached 100% at the Social Guest House for Orphans in 1427 (2006 AD), according to data collected by the researcher from their files in 1427 (2006 AD). Hence the importance of this study to attempt to mitigate the negative impacts either on the orphans or on the community as much as possible, to find methods of discipline that focus on caring for orphans, and to choose the best and most appropriate to benefit the individual.

Rogers, Diana Es.(1994) and Tanner, et.al. (2003) studied the nature of the interior design of orphanages and identified some essential conditions for orphanage buildings and their equipment. The first of these conditions has to do with a healthy climate for the children that encourages them to be active (Saadallah, 1990). The second involves the children's safety and avoidance of danger. The third regards their living situation and the kind of social setting in which they are cared for, for example, an urban setting. There are also conditions related to the characteristics and components as well as the equipment of orphanage buildings, including essential criteria for the rooms inside the building. It must be noted that the children's rooms are of great importance, in terms of their size to accommodate various numbers of children, good lighting and ventilation, and security, protection, and health and safety provisions. The rooms must also have low windows that open outward through which the children can look out onto open spaces with courts and plazas. In addition, the wall paint must be safe and the rooms must be connected to bathrooms of appropriate size for the children (Mahdi, 1991; Zaghini, 1997).

In addition, the orphanage must have large playroom, other rooms for different activities, and a clinic and a rest center; the building must also contain a changing room and appropriate, connected bathrooms. There must be green spaces, as well as a large number of toys, large and small, for the children (UNESCO International Handbook, 1992).

The rooms must be large and appropriate for children, approximately 10–15 meters squared, and the furniture should be well organized, allowing children to move around freely, and set up so that children can participate in group and individual activities. The size and amount of furniture should also be appropriate to the children (Mahdi, 1991; Said, 1987).

In addition, the furniture must be comfortable, well made, and easy to clean and should encourage children to rely on themselves, given that the chairs are light and easy for children to carry and move. As such, the toys should be placed on low shelves so that the children can reach them easily without climbing on chairs or tables. Door handles must also be easy for the children to reach and use (Mostafa, 2000; Saadallah, 1990).

The floors must also be covered so that they stay warm and the rooms must be welllit, well ventilated, and easy to clean. The children's rooms should be decorated attractively and each child should have his or her own space to organize as desired (Mahdi, 1991; Zaghini, 1997). This is very important, since children being self-focused, should have a space for their personal belongings (Zaghini, 1997). This also teaches children about personal property and the importance of general property (Said, 1987). There must also be designated rooms for sick children. There should also be reception rooms, reception rooms for guardians, and waiting rooms for family meetings (Ahmer, 1424; Mahdi, 1991).

Health equipment must be at a low level and accessible and appropriate to the children, preferably close to their rooms. There must also be an appropriate place for the children to eat meals together and the orphanage's yard must be equipped with outdoor toys that allow for the children's muscular development, such as slides, equipment to climb on, and sandboxes and areas for animals and plants (Ahmer, 2003).

- Based on the researcher's study of the current situation with regard to orphans and her specialization in the interior design of orphanages, it is her opinion that the most important components of an orphanage's interior design are as follows: The types of the floor coverings and their effect on children's security and safety.
- Children spend a lot of their time on the ground as they participate in various activities, especially games. Therefore, one must be careful to choose the type of floor covering that allows for comfort and health and which also adds to the room's beauty and décor. This relates to the components of interior design and includes a number of choices:
  - **Wood Panel Flooring:** This is composed of wooden boards that fit together and are attached to the ground by nails or small tiles 23–30 cm long and 4–7.5 cm wide, designed to be attached with hidden nails. Despite the fact that wooden paneling is attractive, easy to wipe and clean, and can be easily painted, it also creates echoes (Saadallah, 1990; Zaghini, 1997).
  - **Plastic Flooring:** This is among the best type of flooring, does not crack, is soft, and does not echo.
  - **Vinyl with Cork Lining:** Such flooring is easy to clean, smooth, warm, has a catchy look, and comes in natural colors.
  - **Vinyl Tiles:** These are easy to wipe and wash, are long lasting, and come in many colors and designs.
  - **Linoleum:** This material resembles vinyl and comes in tiles or rolls (Saadallah, 1990).
  - **Carpets and Rugs:** These are comfortable and absorb sounds, and come in many colors that are different from but in harmony with wall colors. However, they are not stain or dirt resistant and can be a breeding ground for insects and bacteria, which are a health threat to children. This is especially the case for wall-to-wall carpets or cotton carpeting.
  - **Ceramic Tiles:** These are available in many colors, are safe, and come in many sizes; they are very economical and easy to clean. However, they are dangerous for children, especially during playtime, since children over six years old tend to jump over each other and are more active. Because of this, they need soft flooring that is safe and secure (Aid, 2004; Saadallah, 1990).
- Child psychologists believe that the best flooring option in children's rooms is thick, smooth rugs that are also available in different sizes throughout the house. This fits in with the active nature of children as they sit, play, study,

and sleep. The most appropriate choice for children six years old and over is a vinyl floor with a synthetic plastic interior, since it is easy to move around and clean (Ahmer, 2003; Said, 1987).

- Lighting is a simple concept. However, it is more complex when used as decoration. Lighting completely changes a setting and gives it broad aesthetic dimensions.
- Wall coverings. Attention to the proper care of walls and their appropriate design are no less important than the proper treatment of ceilings and floors. Internal walls may be covered in the following ways:
  - *Paint.*
  - *Wood.*
  - *Wallpaper (Said, 1987).*

Based on the above, the following conditions regarding safe dwellings must be mentioned:

- **Proper Ventilation, Lighting, and Heating:** Sufficient ventilation, lighting, and heating must be available in every part of the orphanage, according to established health criteria.
- **Noise Reduction:** The dwelling must be a calm environment. This is accomplished through various methods, such as choosing a site far from factories and high-traffic roads.
- **Sufficiently Large Surface Area:** Minimum standards must be set for spaces and surface areas, especially with regard to the number of bedrooms, sitting rooms, bathrooms, and kitchens.

The remainder of the paper comprises the research, that is, a study of the relationship between the interior design of orphanages and orphans' psychosocial adaptation.

### Research Topic

The research topic is motivated by the fact that the interior design of orphanages has not been up to the standards necessary to meet a child's developmental, psychological, social, entertainment, and disciplinary needs, due to the fact that the employees in charge of the interior design lack scientific knowledge and viable experience in the culture of childhood and its demands.

### Research Questions

This study seeks to answer the following questions. Is there a correlation between the internal system of orphanages (e.g., colors, decorations, and types of curtains, lighting, ceilings, wall coverings, flooring) and psychosocial adaptation? This question is asked in conversation with regard to certain factors, quantifying the correlation between different domains. Is there a correlation between changes in psychosocial adaptation (daily life skills, integration, and physical, psychological, social, and disciplinary dimensions) and differences in employee education, age, and experience?

### Research Goals

The goal of this research is to understand the correlation between the interior design of orphanages and the psychosocial adaptation of orphans who suffer from a lack of viable familial surroundings. This will be accomplished as follows:

- By understanding how appropriate the interior design is for these orphans, despite the lack of scientific knowledge and experience on the part of the orphanage's employees.
- By studying the relationship between the interior design of the orphanage and orphans' psychosocial adaptation and how well the structure meets their needs.

### Research Importance

The importance of this research can be stated through the following contributions:

- Bringing the orphans' developmental psychosocial adaptation needs to the attention of those in charge of the interior design of orphanages and making them aware of these children's needs.
- Participating in laying a foundation for the interior design of the orphanage buildings and rooms based on the development and disciplinary goals of childhood.
- Emphasizing the importance of the relationship between the educational and experience levels of the employees and between the interior design of the orphanage and its impact on the children's psychosocial adaptation.

### Study Limitations

The study is limited by the following criteria:

- **Location**, as part of the Social Protection Orphanage in Al Rabwa, Riyadh, with 12 houses, the sample study site being Villa 3 in the district of Riyadh.
- **Time**, that is, the period allowed by the Ministry of Social Affairs for visiting the orphanage to carry out the study.
- **Number of people**, orphans and employees at the Al Rabwa orphanage (the case study).

### Study Terminology

The following definitions were used in the study.

- Theoretical definition of orphanage: This is the house that was designed and prepared to serve the developmental, psychological, physical, mental, social, and recreational needs of the orphans. This relates to the extent to which the building is suitable for its original goals, the right choice of a site, attention to proper design criteria in the building's rooms, the suitability of the furniture for study and play, given the children's age, size, and demands (Atia, 1995; Mostafa, 2000).
- Working definition of *orphanage*: This is the Orphanage of Al Rabwa, where orphans live and are cared for. These orphans have been designated as having special needs (unknown parents) such that they have not been provided with sound care in a family or in normal society. This orphanage was founded to fully provide for an appropriate psychosocial climate for these children, in addition to complete shelter, fulfilling the role of their natural families as much as possible. As such, the orphanage provides the children appropriate health, social, psychological, educational, and recreational support. The Office of Housing Protection, part of the General Office for the Protection of Orphans, is in charge of this orphanage.
- Working definition of the *psychosocial adaptation of orphans*: This involves orphans' feelings of psychosocial

comfort as they undergo the highest possible level of physical, psychosocial, and integrative adaptation and participate in daily life with complete ease. If such is the case, then the institution's educational goals have been reached.

- Working definition of *interior design*: This term refers to the appropriateness of the following: the arrangement of the furniture and its ease of movement; how easy it is to participate in activities; the design of the walls, ceilings, flooring, hallways, open spaces, lighting, and furniture; and the use of different services to serve the orphans.
- Theoretical definition of *interior design*: This involves the environment of the orphanage with regard to its internal building structure and its different components, including the flooring, furniture, walls, ceilings, and the use of various services suited to its natural and structural characteristics in light of their expected need. All these elements are focused on meeting the various needs of the children in a sound manner (Atia, 1995).

### The Sample

Table 1 reports the number of those involved in the orphanage in the

**Table 1: The Number of Orphans and Employees Studied at the Orphanage** city of Riyadh (Social Protection Home of Al Rabwa, comprising 12 villas) and all the orphans there.

Orphanage	1	2	3	4	5	6	7	8	9	10	11	12
Number of Children	20	20	20	20	20	20	20	20	20	20	20	20
Number of Employees	30	30	30	30	30	30	30	30	30	30	30	30
Total	50	50	50	50	50	50	50	50	50	50	50	50

The sample consists of the orphanage in the region of Riyadh, with 20 employees (see Table 2). The researcher was granted access to all documents. This sample represents the orphans' native society.

**Table 2: The Study Sample**

Subject	Number	Percentage of the Whole Group
Employees	20	5.6% of all employees at the orphanage
Orphanage	1	8.3%
Orphans in the orphanage	35	14.6% of all orphans at the Riyadh orphanage

### Research Method

This study, to accomplish its goals, is based on the descriptive analysis method, studying and analyzing the most important comments and explanations given by employees to questions during visits to the orphanage. It also relies upon the researcher's analysis of the most important problems, based on diagrams and evaluations of suggestions for improving the conditions of the studied villas.

### Research Process

The researcher went through the following steps to arrive at the desired results:

#### *First Step: The Creation of Study Tools*



The following tools, designed by the researcher after her study of the theoretical literature and previous related research, were used to gather research data:

- Questionnaire on the interior design of the orphanage, prepared by the researcher.
- Questionnaire on the psychosocial adaptation of the orphans, prepared by the researcher.

The instruments may be summarized as follows:

Questionnaire on the interior design of the orphanage.

Data connected with this research were collected on site, using a questionnaire. The information was gathered via face-to-face interviews with the employees and the surrogate mothers.

Four main topics were covered:

- Orphans' housing and basic living needs;
- Interior design of the orphanage;
- Colors and decorations used in the interior design (open spaces);
- Needs that must be met by the interior design to facilitate the orphans' psychosocial adaptation.

The goal of the questionnaire, composed of 25 questions, on the interior design of the orphanage was to understand the relationship between the interior design of the orphanage and the children's psychosocial adaptation. The statements were answered by choosing from among positive or negative statements.

### Questionnaire Validation

The researcher validated the questionnaire in the following two ways.

*First, by critics:* The instrument was shown to experts specialized in psychology, special education, and behavioral adaptation for validation. Therefore, a complete picture of the instrument was prepared, with clear goals and related definitions.

*Second, through the instrument's internal coherence:* The researcher studied the correlation coefficients among the instrument's questions and the entire group of questions, producing statistical proof of the each [question](#) (0.01), indicating the internal coherence of the tool's questions (see Table 3).

**Table 3: Validation of the Questionnaire on the Interior Design of Orphanages Through the Internal Coherence of the Questions, using Kendall's Correlation Coefficient**

Questionnaire Topics	Correlation Coefficient
Orphans' housing needs	0.721
Orphanage's interior design	0.602
Quality of colors and decorations used in the orphanage (open spaces)	0.816
Interior design criteria	0.591
<i>Statistical significance: 0.01</i>	



### Instrument Reliability

The instrument was prepared in its final version after its reliability was tested on a research sample. The researcher analyzed Cronbach's alpha with acceptable results, indicating the reliability of the instrument, as shown in Table 4.

**Table 4: Reliability of the Questionnaire's Dimensions, Based on Cronbach's Alpha**

Instrument Questions	Number of Questions	Alpha Value
Orphans' housing needs	s	0.864
Orphanage's interior design		0.735
Quality of colors and decorations used in the orphanage (open spaces)		0.836
Interior design criteria		0.639
<i>Statistical significance: 0.001</i>		

### Second Step: Criteria regarding Children's Psychosocial Adaptation

This study seeks to understand orphans' psychosocial adaptation within orphanages and the questionnaire was therefore centered on the following five main topics:

- **Daily Life Skills:** 20 questions.
- **Integrative Dimension:** 10 questions.
- **Psychological Dimension:** 10 questions.
- **Social Dimension:** 10 questions.
- **Disciplinary Dimension:** 10 questions.
- **Pedagogical Dimension:** 10 questions.

The statements were answered by choosing from among positive or negative statements. The researcher validated the questionnaire in the following two ways.

*First, by critics:* The instrument was shown to experts specialized in psychology, special education, and behavioral adaptation for validation. Therefore, a complete picture of the instrument was prepared, with clear goals and related definitions.

*Second, through the instrument's internal coherence:* The researcher studied the correlation coefficients among the instrument's questions and the entire group of questions, producing statistical proof of the significance level, indicating the internal coherence of the instrument's questions (see Table 5).

**Table 5: Validation of the Internal Coherence of the Questions with Regard to the Criteria for the Interior design of Orphanages, Using Kendall's Correlation Coefficient**

Criteria	Correlation Coefficient
Daily life skills	0.721
Integrative	0.835
Physical	0.886

Psychological	0.733
Social	0.902
Disciplinary	0.583
<i>Statistical significance: 0.001</i>	

The instrument was prepared in its final version after having testing its reliability on a research sample. The researcher analyzed Cronbach's alpha with acceptable results, indicating the reliability of the instrument, as shown in Table 6.

**Table 6: Reliability of the Different Criteria for the Children's Psychosocial Adaptation, based on Cronbach's Alpha**

<b>Criteria</b>	<b>Correlation Coefficient</b>
Daily life skills	0.518
Integrative	0.746
Physical	0.816
Psychological	0.715
Social	0.723
Disciplinary	0.637
<i>Statistical significance: 0.001</i>	

### **Third Step: By Statistical Analysis of the Data**

After finishing preparatory work connected to the research data, including reviewing and editing all the research forms to ensure data coherence, the data were extracted, categorized, tabulated, and organized in preparation of the application of appropriate statistical methods.

## **DISCUSSIONS**

The family structure put into practice for the first time at the Social Protection Home in Al Rabwa completely changed the children's level of psychosocial stability and social adaptation. This was confirmed through the studies done on the orphanage. It is also worth noting that the Social Protection Home of Al Rabwa's villas were built in 1424 (2003 AD) and consist of 12 housing units, or villas, each villa housing six children with a surrogate mother who lives with them 24 hours a day. Note that the term villa, used commonly at the Ministry of Social Affairs, is very different from a traditional villa (house, shelter). During days off, a replacement "aunt" visit the villas, as within a familial housing complex, since there is no difference between the groups. There are no marks or informational signs above the gate of the complex, manned by a Saudi security guard. This type of residential building significantly resembles the neighboring villas of normal people.

Al Rabwa's villas are 12 separate housing units. Each one has a living room, a dining room, three bedrooms, and a kitchen. Five to six orphans live in a walled villa. The children are of different ages and school years and live with their surrogate mother and aunt, who provide for them emotionally, psychologically, and socially. Children participate in entertainment and cultural activities as in any school building and use computers, playing in the playrooms, recreational room, and an entertainment tent. Al Rabwa is a model for orphan villages throughout the world. The Ministry of Social Affairs thus seeks to provide orphans a home with a family where they can develop and become accustomed to a natural family social

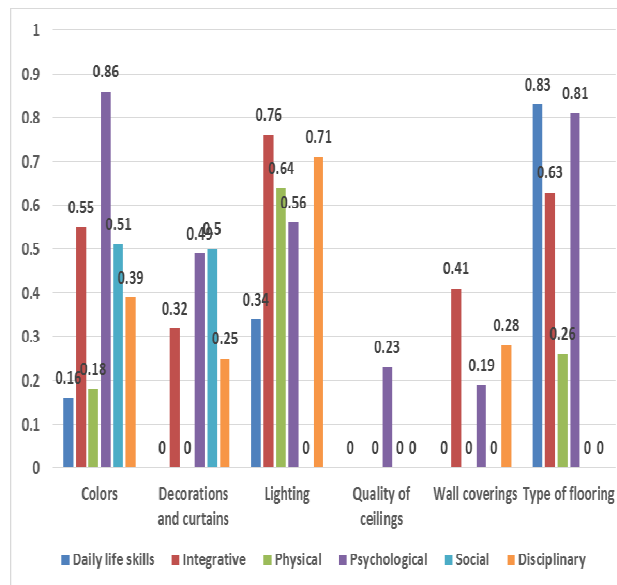
structure, of which they have been deprived for any number of reasons. The Ministry of Social Affairs also seeks to make orphans active members of society in the future. The indoor environment of orphanage is set up, in a detailed manner, in keeping with the case study done in this research.

This study was not exhaustive and its results can be summarized as follows, for discussion and description.

**Question 1:** Is there a correlation between the interior design of the orphanage (colors, decorations, type of curtains, lighting, quality of ceilings, wall coverings, and type of flooring) and psychosocial adaptation (daily life skills, integration, and physical, psychological, social, and disciplinary dimensions)? This is analyzed via studying the correlation coefficients among the different topics.

**Table 7: Correlation Coefficients between Changes in the Interior Design of the Orphanage and Topics Relating to Psychosocial Adaptation**

Change	Colors	Decorations and Curtains	Lighting	Quality of Ceilings	Wall Coverings	Type of Flooring
Daily life skills	0.16	-	0.34	-	-	0.83
Integrative	0.55	0.32	0.76	-	0.41	0.63
Physical	0.18	-	0.64	-	-	0.26
Psychological	0.86	0.49	0.56	0.23	0.19	0.81
Social	0.51	0.50	-	-	-	-
Disciplinary	0.39	0.25	0.71	-	0.28	-
<i>Statistical significance: 0.01</i>						



**Figure 1**

Table 7 clearly shows a positive correlation at the 0.01 significance level between the colors and the psychological, social, and disciplinary dimensions, with correlations of 0.86, 0.51, and 0.39, respectively. In addition, there is a positive correlation, though not at a significant level, between the colors and daily life activities and physical dimensions. This is in agreement with the study of Gad, Madiha (1990), who concluded that traditional methods of interior design,

common in most of Riyadh's orphanages, have a negative effect, as seen in teachers' inability to organize activities and obstacles to children's desired behavior.

It is also clear that there is a positive correlation at a significant level (0.01) between decorations and curtains and the social, psychological, integrative, and disciplinary dimensions, with correlations of 0.25, 0.49, 0.32, and 0.50, respectively. This affirms the importance of decoration and curtains in the interior design of orphanages in psychological and social factors.

It is also evident that there is a positive correspondence at a significant level (0.01) between lighting and the integrative, disciplinary, physical, and psychological dimensions and daily life activities, with correlations of 0.76, 0.71, 0.64, 0.54, and 0.34, respectively. This points to the importance of lighting in the interior design of orphanages, since the correlation between lighting and psychological adaptation is shown to be significant. For this reason, lighting must be considered in interior design, since it facilitates orphans' psychosocial adaptation.

Table 7 also indicates a positive correlation at a significant level (0.01) between the types of ceilings and the psychological dimension, with a correlation of 0.23.

A positive correspondence is also significant (at the 0.01 level) between wall coverings and the integrative, psychological, and disciplinary dimensions, with correlations of 0.41, 0.19, and 0.28, respectively. This indicates the importance of ceiling coverings in orphans' psychosocial adaptation. For this reason, ceiling coverings must be considered in interior design to facilitate orphans' psychosocial adaptation. This is consistent with the results of Tanner et al. (2003), who conclude that the interior design of schools has an impact on students' results and their level of understanding.

Finally, Table 7 shows a positive correspondence at a significant level (0.01) between the types of flooring and daily life activities and the psychological, integrative, and physical dimensions, with correlations of 0.87, 0.81, 0.63, and 0.26, respectively. This indicates the importance of the types of flooring in orphans' psychosocial adaptation. For this reason, flooring must be considered in interior design to facilitate orphans' psychosocial adaptation. The data in Figure 1 show how the correlations are related with the factors of the first hypothesis.

#### Data Figure 1

[no figure present in text]

**Question 2:** Is there a correlation between changes in psychosocial adaptation (daily life skills, integration, and physical, psychological, social, and disciplinary dimensions) and differences in employee education, age, and experience?

**Table 8: Correlation Coefficients between Changes in Psychosocial Adaptation and Differences in Orphanage Employee Age and Education Levels**

Change Psychosocial Adaptation	Level of Education			Experience		
	Secondary Education	University Education	Higher Education	Less than 5 years	Between 5 and 10 years	More than 10 Years
Daily life skills	0.427	0.435	0.470	0.634	0.763	0.653
Integrative	0.564	0.568	0.622	0.710	0.658	0.623
Physical	0.378	0.420	0.410	0.562	0.745	0.658
Psychological	0.648	0.762	0.741	0.672	0.754	0.823
Social	0.637	0.625	0.619	0.783	0.742	0.749
Disciplinary	0.421	0.726	0.683	0.734	0.745	0.675
<i>Statistical significance: 0.01</i>						

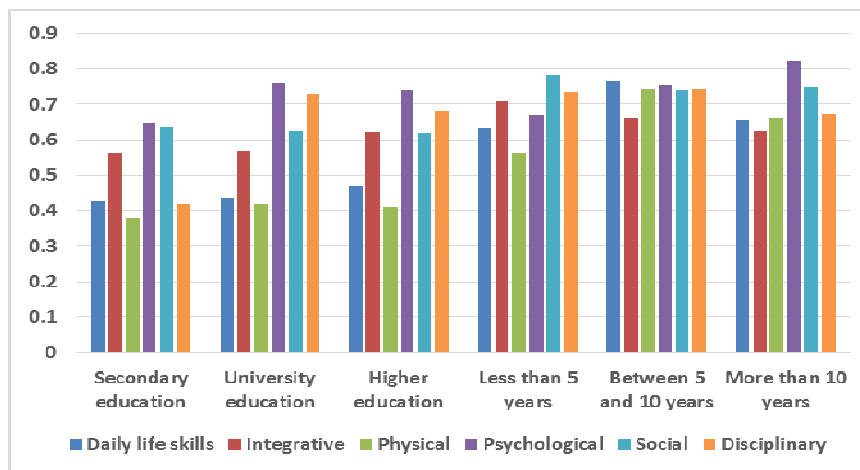


Figure 2

Table 8 shows a positive correlation at a significant level (0.01) between differences in university education (bachelor's degree) and all changes regarding psychosocial adaptation. There is a significant relationship with an impact that is clearly stronger than that of a high school or higher education. Thus, orphanage employees with bachelor's degrees are preferred so that they may significantly participate in facilitating orphans' psychological adaptation.

It is also clear that there is a positive correlation at a significant level (0.01) between differences in the level of practical experience (five to 10 years) and all changes related to psychosocial adaptation. The relationship is significant, with an impact that is clearly stronger than that of experience under five years and over 10 years. This means that the employees caring for orphans should have five to 10 years of experience so that they may participate significantly in facilitating orphans' psychological adaptation (see Figure 2). *Figure 2* [no figure present in text]

### Research Recommendations

Through her studies of the research topics and by obtaining numerous results that accomplish the stated goals, the researcher presents a number of recommendations, as follows:

- Further field studies to understand the requirements of orphans and their various needs and to achieve an appropriately designed living environment.
- The use of plastic curtains in bathrooms and aluminum blinds in the kitchens to make them easy to clean and resistant to humidity.
- The importance of diversity in the floor covering and the use of vinyl or wood.
- As much attention as possible to access to sunlight through windows of appropriate sizes in appropriate locations.

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## APPENDICES

### The Questionnaire

#### General Data

- Years of experience
- Educational Qualifications
  - Secondary education.
  - University.
  - Higher education.

**Years of Experience**

- Less than five years.
- Between five and 10 years.
- More than 11 years.

**First:** Criteria for the interior design to facilitate orphans' psychosocial adaptation.

Orphans face numerous needs, some of which they all share, such as their period of development, and some of which differ due to each individual's unique social situation.

The following table describes some of these needs. In your opinion, which are the important needs in the orphans' lives?

**Table 9**

Number	Housing Needs	Provided	Not Provided
1	Demands and essentials of basic living needs		
2	Increased awareness of life demands and cultural growth		
3	Personal, social, and physical assistance with problems		
4	Appropriate housing		
5	Availability and improvement of communication methods		

**Second:** Interior Design for Orphans.

**Table 10**

Number		Living Room	Bed Room	Kitchen	Bathroom	Hallway	Study Room
<b>Flooring Type</b>							
	Ceramic						
	Rug						
	Vinyl						
	Marble						
	Carpet						
	Wood						
	Tile						



Table 10: Contd.,							
	Wax-sealed flooring						
Wall Coverings							
	Oil-based paint						
	Water-based paint						
	Wallpaper						
	Wood paneling						
	Drawings of cartoon characters						
	Porcelain ceramic						
	Ceramic						
Ceiling Type							
	Normal						
	Crown molding						
	Raised ceiling						
	Speckled						
	Aluminum						
Lighting							
	Wall lighting						
	Ground lighting						
	Personal desk lighting						
	General ceiling lighting						
Types of Curtains							
	Single sheet of material						
	Metal sheets						
	Double-ply material						
	Plastic						

**Third:** Preferences regarding the colors and decorations used in the interior design (open spaces).

**Table 11**

Colors and Decorations									
		Flooring		Walls		Curtains		Ceiling	
		Yes	No	Yes	No	Yes	No	Yes	No
<b>Light Colors</b>	Living room								
	Bedroom								
	Kitchen								
	Bathroom								
	Hallway								
	Study room								
<b>Dark Colors</b>	Living room								
	Bedroom								
	Kitchen								
	Bathroom								
	Hallway								
	Study room								
<b>Drawings of Nature</b>	Living room								
	Bedroom								
	Kitchen								
Table 11: Contd.,									
	Bathroom								
	Hallway								
	Study room								

<b>Pictures of Cartoon Characters</b>	Living room											
	Bedroom											
	Kitchen											
	Bathroom											
	Hallway											
	Study room											
<b>No Decorations</b>	Living room											
	Bedroom											
	Kitchen											
	Bathroom											
	Hallway											
	Study room											

Fourth: Safety and Security.

Table 12

	Living room		Bedroom		Kitchen		Bathroom		Hallway		Study Room	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
<b>Rounded Edges on Furniture</b>												
<b>Window Protection to Prevent Falling</b>												
<b>Automatic Alarm Devices</b>												
<b>Fixed Flooring (Immovable)</b>												
<b>Protective Cover On Electric Sockets</b>												
<b>Good Ventilation Via Windows</b>												

In the name of God, the Compassionate, the Merciful

Psychosocial Adaptation Questionnaire, Final Version

Table 13

Number	Question	Yes	No
<b>1</b>	<b>Daily Life Activities</b>		
1	I knock on doors when I enter rooms.		
2	I make my bed when I wake up.		
3	I brush my teeth with a toothbrush and toothpaste after eating.		
4	I wash my hands with water and soap in the sink before eating.		
5	I put a napkin on my chest while eating meals.		
6	The dining room table is in a comfortable and easily accessible position.		
7	After having eaten, I put the plates in the kitchen.		
8	After having eaten, I can easily throw away the garbage.		
9	I clean the area after finishing a meal.		
10	I sit down to eat meals in the dining room or the kitchen.		
11	I can use the stove comfortably and easily.		
<b>Table 13: Contd.,</b>			
12	I can easily use the kitchen sink when I wash dishes.		
13	I can easily turn the faucet on and off.		
14	The chairs in the sitting room are comfortable.		

15	I don't find moving the chairs within rooms to be difficult.		
16	I can easily walk on the rug (carpet) without tripping.		
17	I can walk on the tiles without slipping.		
18	I can use the toilet easily without any problems.		
19	I can take a bath in the bathroom easily without any problems with the water.		
20	I can easily organize my clothes in the closet.		
<b>2</b>	<b>Integrative</b>		
21	I can easily watch television from my sitting area.		
22	I watch television at a low volume.		
23	I listen to the radio or portable devices at a low volume.		
24	I don't bother others with noise.		
25	I put toys back in their place once I'm finished.		
26	I play well with others without bothering them.		
27	I can sit quietly in the living room with others.		
28	I keep my clothes clean.		
29	I put on pajamas before going to bed.		
30	I organize my clothes in the closet.		
31	I walk in the orphanage in a normal way.		
<b>3</b>	<b>Physical</b>		
32	I am always sick.		
33	I feel pain in some parts of my body.		
34	I suffer from pain in my stomach and insides.		
35	I feel hot and tired in the summer.		
36	I suffer from chills.		
37	I feel fit with the orphanage.		
38	My emotional state is stable.		
<b>4</b>	<b>Psychological</b>		
39	I feel comfortable and happy.		
40	I have a hard time breathing.		
41	I feel at peace because others understand my feelings.		
42	I have lost faith in myself.		
43	It's easy for me to get to know people.		
44	I lose confidence faith in myself easily.		
45	I feel comfortable.		
46	I get angry easily.		
47	I have goals and desires.		
48	I feel my friends like me.		
49	I generally feel sad.		
50	I feel happy when I am in my room.		
51	I feel alone when I am at the orphanage.		
52	I feel proud that I live at the orphanage.		
<b>5</b>	<b>Social</b>		
53	I feel that people at the orphanage understand each other.		
54	My relationship with my guardians is good.		
55	My relationship with the other children is good.		
56	I can make my friends happy.		
57	The society I live in encourages me with regard to my needs and desires.		
58	I take part in group activities.		
59	I like the orphanage where I live.		
60	I interact with the social setting in which I live.		
<b>Table 13: Contd.,</b>			
61	I feel free when getting to know people.		
62	I feel dizzy when I'm in my room.		
63	It's easy for me to go from one place to another in the orphanage.		

64	I don't fight much with others.		
65	I enjoy participating in many of the entertainment and leisure activities at the orphanage.		
<b>6</b>	<b>Disciplinary</b>		
66	I help others with their schoolwork.		
67	I ask others to help me with some of my homework.		
68	I put my bookbag in its place after school.		
69	I write on the orphanage's walls with markers.		
70	I take care of the furniture at the orphanage.		
71	I like the colors of the walls.		
72	I do my work at my desk in my room.		
73	I am comfortable with the lighting at the orphanage.		
74	My closet is in a good location and is easy to reach.		

