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Correlation Between Family Support and Self-Efficacy Among Paralytic Polio Survivors at Paraplegic Centre Hayatabad Peshawar Kpk

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Abstract

Background:
In the mid-20th century (the 1950s), public health was badly threatened by a deadly virus known as poliovirus. Poliomyelitis is a highly contagious, fatal, and exclusive human disease caused by the poliovirus that affects mostly children under the age of five. Among the disabilities, a low level of physical activity is determined in polio survivors, which indicates the need for assistance in mobility. **Aim of the study:** The study aimed to determine the correlation between family support and self-efficacy among paralytic polio survivors.
Methodology: An analytical cross-sectional study was conducted using the Correlational study design to determine the association between family support and self-efficacy. A total of 152 participants were included in the study from the paraplegic center Hayatabad Peshawar KPK through consecutive sampling techniques. Data was collected through a validated and translated questionnaire. Data were analyzed using SPSS version 22. Pearson correlation, independent sample T-test, and Chi-square tests were applied to determine the correlation and association among variables. **Results:** The study findings resulted that among 152 participants, 97 were male and 57 were female. The mean age of the current study participants was 32.54 ± 8.030 years. There was a highly significant correlation with the P-value of 0.001 between family support and self-efficacy among paralytic polio survivors. Some demographic variables like gender, Education, paralyzed parts of the body, and age of onset of disease presented highly significant positive associations. **Conclusion:** The correlation between family support and self-efficacy was highly significant. Participants who had more family support had high self-efficacy. Furthermore, the study findings suggested that the hospital management should arrange workshops, seminars, and other educational programs for polio survivors and their family members to educate them to increase family support for the paralytic polio survivors.

Key words: Paralytic polio survivors, family support, self-efficacy, nurses, self-care abilities, Quality of life, disabilities, correlation.

Introduction

In the mid of 20th century (the 1950s) public health was badly threatened by a deadly virus known as poliovirus [1, 2]. Poliovirus belongs to the human enterovirus species C and Picarniviridea family which cause a disease known as poliomyelitis [3, 2]. The polioviruses had been classified into three serotypes or strains: poliovirus 1 (PV1), Poliovirus 2 (PV2), and

poliovirus 3 (PV3) [2, 4--6]. Through extended use of oral polio vaccines (OVP), two of the polioviruses are eradicated from the world (serotypes 1 and 3) by the year 2020, but serotype 2 is still endemic in Pakistan and Afghanistan [27]. Poliomyelitis, often called polio or infantile paralysis, is a highly contagious, fatal, and exclusive human disease caused by any of three serotypes of poliovirus that affects mostly children under the age of five and adults with inadequate immunity [3, 4, 6-9]. The disease is categorized into spinal, bulbar, and bulb spinal polio, according to the affected motor neurons of the spinal cord [2, 6]. The virus is spread from person to person by the fecal-oral route mostly and rarely by oral-to-oral route [2, 3, 6, 8, 9, 17]. Most people with poliomyelitis (95%) are asymptomatic but some of them, 4% to 8% show symptoms like fever, sore throat, fatigue, headache, vomiting, neck stiffness, pain in limbs, respiratory symptoms, and even lead to the most serious form, paralysis [2,7–9]. Risk factors for poliomyelitis are identified as, unvaccinated children, parents' high refusal rate and deprived access to vaccination, poor infrastructure of health and sanitation, low oral polio vaccine campaign, intramuscular injection in the polio-endemic region, and areas with open defecation[9,11–14,16]. The poliovirus resides in the gastrointestinal tract and pharynx of the human body. After that, it enters into the bloodstream, and in rare circumstances (1 to 2%) it invades the central nervous system (CNS) and causes paralysis, limb deformity, breathing problems, or even death [2, 3, 9, 15–17]. According to the research studies, among all paralytic patients, 10 to 40% improves full muscle strength while the rest 60 to 90% got irreversible paralysis reaching from monoplegia to quadriplegia and becoming permanently disabled [2, 7]. A study revealed that Paresis of the lower extremity was the most common disability noted in poliomyelitis [18].

Methodology

Analytical cross-sectional study with a Correlational study design was conducted to determine the correlation between family support and self-efficacy among paralytic polio survivors. The study was conducted at Paraplegic Centre, Hayat Abad Peshawar. Which is the only paraplegic Center in Peshawar in which all disabled patients of different causes are treated. The subjects or target population of the current study were all paralytic polio survivors who are receiving treatment for rehabilitation purposes and fulfill the inclusion criteria of the current study. The calculated sample size for the current study was 152. The sample size was calculated on by OpenEpi sample size calculator. The sample size was calculated on the basis of a 03 3-month census. About 250 polio patients attended the hospital within the last 3 months., so it was taken as population size, with a confidence level of 95%, and with a margin of error of 5%. The exact prevalence is not known, so it was taken at 50%, a confidence limit of 5%, and 1.0 design effect. Consecutive sampling techniques were used to select the target population. The purpose of selecting this sampling technique was to minimize the selection bias in the study findings. Furthermore, to access the study participants easily.

Data collection procedure:

Data was collected through a validated and reliable questionnaire after approval from GC & ASRB. A permission letter for data collection was generated from INS-KMU and formal permission is obtained from the administration of the Paraplegic Centre. The purpose of the study was explained to the eligible participants and informed consents were obtained from all the participants. The questionnaire was comprised on three parts; the first part was about demographic variables, such as age, gender, type of family, education, paralyzed part of the body and other initial information regarding the health status of the patients. while the second part of the questionnaire is about the self-efficacy of patients and it was assessed through the Moorong self-efficacy scale (MSES). Which was a 16-item scale measuring an individual's belief (sense of confidence) in his or her ability to control their behavior and outcomes on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The total score of MSES is ranging from 16 to 60, the 16 score or below means low self-efficacy, and a score of 60 means high self-efficacy. Moreover, the last part of the questionnaire is related to family

support. Family support was determined through Family Support Scale (FSS). The Family Support Scale (FSS) was a 20 items scale that were used to assessd the family support. Each item is scored on 4 points (0 to 3) Likert scale, where 0 means "No" and 3 indicates "Much". The total score of FSS ranges from 0 to 60. The higher score reveals the greater perceived family support. The score from 0 to 16 indicate low family support, and a score of 60 identify high family support.

Validity and reliability of the study instruments:

The tools of the current study were translated into urdu and then Pashto for the better understanding of the participants. After the translation of both questionnaires, validity was tested from three Ph.D. nursing scholars named Dr. Sabiha Khanum Director of Institute of Nursing Sciences, Khyber Medical University Peshawar KPK Pakistan (INS-KMU), Dr. Dildar Muhammad (Associate professor INS-KMU), and Dr. Shah Hussain (Assistant professor Zalan College of Nursing). A pilot study was conducted after the translation of the questionnaire into the Urdu and Pashto languages, which had shown a reliability value of the Moorong self-efficacy scale (r=0.82) and Family Support Scale (r= 0.90).

Data Analysis Procedure: Data analysis was done by using Statistical Package for Social Sciences (SPSS) version 22. For data analysis, descriptive and inferential statistics were measured. In descriptive statistics, frequencies and percentages were calculated for categorical variables like, level of education, gender, marital status, employment, care giver at home, paralyzed part of the body, and age of onset of disease and mean and standard deviations were determined for continuous variables such as age of the participants. In inferential statistics, the Pearson correlation test were used to determine the correlation between family support and self-efficacy while an independent sample T-test was applied for assessing the mean score in the family support and self-efficacy of the patients. ANOVA was used to determine the association of level of education, paralyzed part of the body, care giver at home, and age of onset of disease with self-efficacy and family support. The Chi-square test was used to identify the association and strength of associations among the gender, marital status, and employment status with self-efficacy and family support.

Ethical Consideration

Ethical clearance to conduct the study was sought from the Medical Superintendent of the hospital. All participants provided written informed consent. Thus, they volunteered themselves, and anonymity was also ensured. A separate room was used for data collection to protect privacy. The participants were made aware that the study would never harm or benefit any of them. To maintain anonymity and confidentiality, the participants' identification was eliminated from the questionnaires, and data was kept secure. The participants were told that their participation was voluntary and that all responses given would be kept anonymous. The data collected remained only accessible to the researcher and the authorized personnel involved in the study.

Results

Demographic Characteristics of Study Participants. There were 152 subjects in total for this study, 62.5% of whom were male and 37.5% female. The mean age of the participants was 32.54 years. A majority of the participants were single (71.1%), lacked formal education (69.7%), and were not working (73.7%). A large number of participants suffered from polio between the ages of 1 and 5 (75%), with 40.1% of them having one of their lower limbs paralyzed. The primary caregivers were found to be parents (38.2%) and other relatives (33.6%). The provided information indicates the socio-demographic and health problems of polio victims.

Table 1: Demographic Characteristics of Study Participants

Characteristic	Category	Frequency	Percent	Valid Percent	Cumulative Percent
Gender	Male	95	62.5	62.5	62.5
	Female	57	37.5	37.5	100.0
Age (Years)	18-28	44	28.9	28.9	28.9
	29-38	69	45.4	45.4	74.3
	39-48	36	23.7	23.7	98.0
	49 & above	3	2.0	2.0	100.0
Marital Status	Married	44	28.9	28.9	28.9
	Unmarried	108	71.1	71.1	100.0
Educational Level	Uneducated	106	69.7	69.7	69.7
	Primary	4	2.6	2.6	72.4
	HSSC	29	19.1	19.1	91.4
	Degree	13	8.6	8.6	100.0
Employment Status	Employed	40	26.3	26.3	26.3
	Unemployed	112	73.7	73.7	100.0
Paralyzed Body Part	Single Lower Limb (R/L)	61	40.1	40.1	40.1
	Both Lower Limbs	50	32.9	32.9	73.0
	Combination of All	41	27.0	27.0	100.0
Caregiver at Home	Spouse	17	11.2	11.2	11.2
	Parents	58	38.2	38.2	49.3
	Children	8	5.3	5.3	54.6
	Siblings	18	11.8	11.8	66.4
	Combination of All	51	33.6	33.6	100.0
Age of Onset of Polio	1 to 5 years	114	75.0	75.0	75.0
	6 to 10 years	38	25.0	25.0	100.0

Evaluate the correlation between family support and self-efficacy

This section deals with the correlation between family support and self-efficacy among paralytic polio survivors. To determine the correlation between these two variables, the Pearson correlation test was applied. The results showed a highly significant correlation with the P-value of 0.01. Table 9 shows the correlation between family support and self-efficacy for better understanding.

Table 2: Correlations between Family support and self-efficacy

		FSS category	SE CAT
Family support	Pearson Correlation	1	.705
	Sig. (2-tailed)		.000
	N	152	152
Self-efficacy	Pearson Correlation	.705	1
	Sig. (2-tailed)	.000	
	N	152	152
Correlation is significant at the 0.01 level (2-tailed).			

The study analyzed associations between demographic variables, family support, and self-efficacy using statistical tests like chi-square and one-sample t-test. Age showed no significant association with family support (p=0.089) or self-efficacy (p=0.201), while gender and education level were significantly linked to self-efficacy (p=0.010 and p=0.000, respectively). Employment status and paralyzed body parts also showed highly significant associations with self-efficacy (p=0.001 and p=0.010). Additionally, the age of polio onset was significantly associated with self-efficacy (p=0.002).

Table 3: Determine the association of family support and self-efficacy with the selected demographic variables

Variable	Test Applied	Association with Family Support	Association with Self-Efficacy	P-Value
Age	Chi-Square Test	Not Significant	Not Significant	0.089 (Family Support) 0.201 (Self-Efficacy)
Gender	Chi-Square Test	-	Significant	0.010
Education Level	Chi-Square Test	Highly Significant	Highly Significant	0.000
Paralyzed Body Parts	Chi-Square Test	-	Highly Significant	0.010
Employment Status	One-Sample T-Test	-	Highly Significant	0.001
Age of Onset of Polio	Chi-Square Test	-	Significant	0.002

Discussion:

The analysis focused on studying socio-demographic features of 152 participants, which included 62.5% males and 37.5% females being the most representative, and 37.5% females being the least representative capturing the essence of some studies but not so others, capturing the essence of higher feminine representation. Participants' primary ages were between 18 and 54, while the mean age was 32.54 years reported for the first time with a standard deviation that did not match other studies' mean age with older subjects. [19] The majority (75%) of the participants developed polio between the ages of 1 and 5, which is supportive of the finding that polio affects mainly young children. In terms of paralysis, 40.1% had single lower limb paralysis, 32.9% had both lower limbs paralyzed, and 27% had multiple body parts affected, which is comparable to prior research. [20]. Employment showed 26.3% employed and 73.7% unemployed, which is a suggestion of unfavored employment to polio survivors. Education levels were uneducated, comprised of 69.7%, while primary was 2.6%, higher secondary was 19.1%, and degree level was 8.6%, which were more compatible with lower education achievement trends of polio survivors. These outcomes demonstrate the socio-demographic aspects of polio survivors, which require urgent consideration in terms of support and intervention strategies. [21] The results of the polio survivors study highlighted the possible correlation regarding family support given, and their level of self-efficacy. With understanding the context of family support given to paralytic polio survivors, family support and self-efficacy amongst them were found to be highly significantly correlated. better understanding [22]. These results were different from some other studies too. A randomized control trial suggests that including family members in a patient's care can enhance self-efficacy and self-care management [23, 24]. In the same way, other studies revealed that patients with greater social support reported high self-efficacy as compared to those with lower social support [22]. In addition, a correlational study on self-efficacy, family support, and self-care activities of patients found a positive relationship among the three variables [23]. In addition to these studies, one that focused on self-efficacy among chronically ill patients found that participants had higher self-efficacy with family support [19]. This study came to be with positive relationships among the variables. The research has focused on relationships between demographic factors, family assistance, and self-efficacy. [24] As previously stated, no significant association was discovered between age and self-efficacy which is contrary to other studies that have argued that older self-efficient individuals tend to have lower self-efficacy. Males showed higher self-efficacy about self-efficacy, and this is consistent with most studies that females tend to have high reports of symptoms like exhaustion and pain. [25] Also, self-efficacy was observed to be positively related to educational level, which is consistent with other studies that pointed out the impact of education on self-efficacy. [26] Self-efficacy was also found to be significantly associated with the non-functional limbs, which is similar to other work in patients with spinal cord injury. Employment status was extremely important as employed people were found to be more self-sufficient, which was different from some studies that did not find this relationship. [27,28] These results highlight the many socio-demographic concerns and the specific self-efficacy issues posed to the survivors of polio and the specific measures that need to be taken to change these factors. [29,30]

Conclusions

The analysis suggests that socio-demographic variables are major predictors of self-efficacy and family support among polio survivors. Important results indicate that self-efficacy was highly correlated with one's gender, level of education, employment status, and paralyzed body part, while age did not show any significant correlation. Men had more self-efficacy than women, and self-efficacy was higher among more educated individuals. Also, self-efficacy was higher among employed respondents compared to the unemployed, which significantly affected their self-efficacy. The degree of paralysis also significantly impacted self-efficacy, although It was less pronounced than the physical and psychological challenges of surviving. These results emphasize that socio-demographic variables should be included in the design of

specific programs aimed at improving in self-efficacy and family support for polio survivors because it helps to design their quality of life and well-being.

Limitation of the study

The current study was conducted in only one hospital due to the short duration of the study and the unavailability of such specialized organizations for paralyzed polio survivors. Furthermore, it was an unfunded research work and was a requirement of the MS nursing program

Recommendation:

Based on the current study findings, the following suggestions are recommended.

1. The same nature of the study should be conducted in which a large number of participants would be included.
2. The samples should be collected from different hospitals in the country.
3. An interventional study is needed to be conducted to increase the level of self-efficacy of paralytic polio survivors.
4. A comparative cross-sectional study should be steered to compare the self-efficacy of polio survivors and management programs of private and government hospitals.
5. Educational sessions, seminars, and workshops should be arranged to educate the patient and their family members regarding the association of family support and self-efficacy.
6. Nurses' educational programs and curriculum should include the study findings to educate nurses, in turn, nurses will educate the family members to increase family support, and educate the polio survivors to increase their self-efficacy.

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