INTRODUCTION

Kidneys are regarded as vital body organs necessary for a healthy life. Failure of kidney function in the human body is called end-stage renal disease (ESRD) which is a chronic medical condition for individual. Patients suffering from kidney failure face severe problems and survival risks due to the prolonged treatment of hemodialysis, however, survival chances increase if a kidney transplant is being carried out. In many cases, dialysis is an important kidney treatment and is required when patients own kidneys cannot perform their intended function. Generally, the process of dialyses does not involve much pain, however, patients may suffer fear, stress, and other similar psychological states. Numerous studies on patients suffering from End-stage renal disease suggest psychological illnesses and symptoms by these patients. These psychological conditions may involve depression, death-related anxiety, insomnia, fatigue, dementia, and various other psychological disorders.

A commonly observed negative psychological outcome of individuals with renal failure reported in the literature is psychological distress. It is an important psychological outcome of the individual undergoing the treatment of dialysis. Different mental health professionals describe psychological distress as a non-specific mental...
problem which comprises of combinations of symptoms including anxiety and depression\textsuperscript{3}. The psychological distress in hemodialysis patients is a result of depression and anxiety that lead to lower social interaction with others and disrupted quality of life. For example, patients suffering from chronic diseases find their quality of life seriously impacted. In addition, from a medical perspective, chronic kidney disease is considered as a serious medical condition which has negative impact on the quality of life of individual patients\textsuperscript{4}. In such conditions, patients require greater social support to cope with the pressure of physical and psychological challenges to overcome stress\textsuperscript{5}. In this regard, Quality of life of patients is considered as an important concept and an indicator of a patient’s overall wellbeing.

Moreover, patients undergoing dialysis mostly experience depressive affect\textsuperscript{6} which may also influence the prognosis of the medical treatment. It is also observed that patients having a higher level of depressive affect mostly stop complying with the nutritional restrictions advised by the physicians. Secondly, depressive affect is also associated with higher level of inflammatory process in the human body. As a result, patient is more vulnerable to vascular diseases and other medical complications. Depressive affect also negatively influences the therapeutic outcomes including higher mortality and bad prognosis\textsuperscript{7}. Therefore, it is recommended that the patient’s level of distress be evaluated continuously for making better treatment plan. The outcome of psychological distress is that it may cause patients to feel worthlessness. The distress among patients can be measured using indicators and based on the severity of such symptoms and their impact.

Studies have constantly stressed that patients suffering from serious illnesses are faced with multiple stressors regarding health and survival. Besides, they also added that these patients experienced some positive changes, as well in their lives in the form of Post traumatic growth. They further stressed that the reason for positive changes may be due to some indicators like achieving coping skills in patients who receive effective social support. Post-traumatic growth (PTG) refers to the positive psychological change which may emerge in the individual after passing through a traumatic event. Post Traumatic Growth (PTG) experience can facilitate an individual struggling with highly challenging life circumstances, especially in chronic disease conditions. Review of the literature suggests that event is likely to be traumatic if there is the death of a close relative, some significant loss, or becoming a victim of some life-threatening disease. This positive psychological change is a result that may emerge as he/she attempts to find new meaning and resolve due to the traumatic event. According to a recent study the considerable levels of post traumatic growth were observed in dialysis-dependent patients\textsuperscript{8}. The proponents of post traumatic growth stressed that it is different from optimism, emotional toughness or resilience since it not only involves the ability to cope and avoid damages from highly traumatic situation but includes the ability to develop growth which is beyond the pre-trauma level\textsuperscript{9}. A comparison of people who experienced post traumatic growth will thus show greater adaptive responses as compared to what they had experience earlier before the traumatic situation arose.

One explanation of such growth is the human understanding that time cannot be reversed to undo undesirable things in life; however, life can be made more meaningful despite negative experiences\textsuperscript{10}. The medical perspective on post-traumatic growth is based on the recognition that trauma can function as a spring board to an improved level of psychological functioning among individual.

**METHODOLOGY**

This study is designed to explore the relationship and effect of post traumatic growth and psychological distress on quality of life in renal failure patients. Similarly, we also aimed to find differences in the study variables within varying age groups based on social theories of aging in the present sample. Ethical approval was obtained from the Psychology Department Ethical
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committee, IIUI. The data was collected from Lady Reading Hospital Peshawar and Government hospital Mardan, Pakistan, from January to June 2019. Data was collected after getting the approval from the institutional authorities. Non-probability convenience sampling technique was used to gather data from the sample. The inclusion criteria were adult patients who were about 18 years or older and had diagnosis of end stage renal disease and were currently receiving treatment or medical care from the nephrology departments within different dialysis units. They included all in patients, outpatients who were receiving dialysis who were ready to participate in the study. The participants were carefully approached and the purpose of the research was explained to them followed by getting their written informed consent for participation. Moreover, they were assured that the results of the study will be only utilized for the sake of research and their responses/identity will be kept confidential. The participants were provided with the study questionnaires along with the instructions and their queries were entertained. Each participant was attended individually and was thanked for his/her participation in the study. Exclusion criteria were participants with any type of documented mental illness or any type of physical disability.

To measure the study variables Psychological Distress Scale11 (K-10) having 10 items (a=0.89) Quality of life Scale12 having 18 items (a=0.78) and a 21 item Post Traumatic Growth Inventory (PTGI)13 having alpha reliability of 0.71 were used. Keeping in view the education level of the sample Urdu versions of all the three scales were used14. Higher scores on the scales represent high levels of Psychological Distress, Quality of Life and Post Traumatic Growth whereas lower scores represent lower levels of the respective attribute. The data was manually entered into the SPSS Statistics version 21. Frequencies and percentages for age, gender, educational qualification was calculated through descriptive statistics. The correlation method was used to see the correlation among study variables whereas ANOVA was run to see the differences between and among groups.

RESULTS

A total of 300 renal failure (male=185, female =115) patients age ranging from 18-81 years seeking dialysis from the aforementioned hospitals were approached to participate in the study. Only those patients who were willing to participate in the study were included.

Table-I shows that post traumatic growth negatively correlates with psychological distress (r=-.77**, p<0.01) however, it has positive correlation with Quality of life (r=.68*, p<0.001). Similarly, Quality of Life is negatively correlated to psychological distress (r=-.73**).

Table-I: Correlation matrix of study variables (n=300).

| Variables                  | 1    | 2    | 3    | 4    |
|----------------------------|------|------|------|------|
| Age                        | -     | .09  | 0.05 | 0.10 |
| Quality of life            | -     | -    | -0.73** | 0.68** |
| Psychological distress     | -     | -    | -    | -0.77** |
| Post traumatic growth      | -     | -    | -    | -    |

Table-II: Prediction of quality of Life by psychological distress and post-traumatic growth (n=300).

| Predictor Variable       | Unstandardized Coefficient (B) | 95% Confidence Interval | p-value | R2 | F      |
|-------------------------|--------------------------------|-------------------------|---------|----|--------|
| Psychological Distress (K-10) | -0.89                          | -1.10 – -0.68           | 0.000   | 0.57 | 198.4*** |
| Post-Traumatic Growth (PTGI) | 0.25                           | 0.15 – 0.35             | 0.000   |     |        |

DISCUSSION

Kidney failure is considered as one of the medical emergencies and may be considered as a
traumatic condition for the patient, therefore may likely impose psychological burden like psychological distress on the patient. On the other side, a bulk of previous researches also reported the development and existence of positive psychological development in the form of Post traumatic growth among individuals who have faced traumatic situations. The present study therefore, aimed to explore the relationship and impact of Post traumatic growth (PTG) and psychological distress on quality of life among renal failure patients who were undergoing dialysis. Moreover, the difference in the levels of Post traumatic growth, Quality of life and Psychological distress among patients of different age groups, were also examined.

The present findings revealed a significant negative correlation of psychological distress with post traumatic growth and quality of life in the present sample. It’s a natural phenomenon that distressed individual thinks negatively which may adversely influence the individual’s quality of life therefore few chances to develop psychological growth exists. However, the important finding is that both growth and personal distress can co-exist in the individual after experiencing trauma. Calhoun et al suggests that while determining whether such growth occurred in an individual or not, one must compare the positive as well as negative changes in an individual due to the traumatic situation. The review of literature also highlights the presence of moderate to high levels of post traumatic growth levels in individuals who are living with chronic illness such as stomach cancer survivors and individuals suffering from acquired brain injury and kidney multiple sclerosis, cardiac diseases, and HIV/AIDS. The findings of their study suggested that post traumatic growth is also associated with several factors including mental and physical health, coping strategy employed by an individual, availability of social support, quality of relationships and so on.

The present study also revealed a significant positive association of PTG with quality of life among the sample. The relationship between post-traumatic growth and quality of life is logical for an individual who experience post-traumatic growth will appreciate life and can experience a better quality of life. Literature review suggest that quality of life of such patients is generally impacted due to the negative outcomes of the disease. Furthermore, factors which contribute to the quality of life among patients having a critical illness or related treatments leads to disability or pain, and thus can reduce the quality of life. Past literature establishes that treatment and disease-related factors contribute into the reduced quality of life among patients having end-stage renal disease. According to the National Service Framework, patients having such disease necessarily require psychological assistance to cope with newer life style and associated challenges (Department of Health, 2005. The relationship is also supported by a bulk of previous studies. For example; Kimmel observed a positive

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**Table-III: Mean Standard deviation and F-value on Post traumatic growth, Quality of life and Psychological distress among dialysis dependent patients of different age groups (n=300).**

| Variables | 16-32 (n=99) | 33-48 (n=114) | 49-81 (n=87) | F | P |
|-----------|-------------|-------------|-------------|---|---|
| PTGI      | M (53.1) SD (20.23) | M (62.89) SD (18.89) | M (58.2) SD (21.38) | 6.28 | .002** |
| QOLS      | M (59.85) SD (17.93) | M (68.20) SD (17.93) | M (63.40) SD (16.45) | 6.33 | .002** |
| K-10      | M (24.42) SD (10.04) | M (20.45) SD (8.78) | M (22.64) SD (10.50) | 4.47 | .012* |

*p<0.0.
relationship between post-traumatic growth and quality of life through an empirical study\textsuperscript{17}. Similarly, Gerogianni \textit{et al} also found a positive association between post-traumatic growth and quality of life\textsuperscript{18}. Several other studies also found positive association between post traumatic growth and quality of life of patients or individuals suffered from some major illness or trauma\textsuperscript{19,20}.

The present study further aimed to investigate differences in post-traumatic growth, psychological distress and quality of life in young, middle age and older patients. The findings revealed that middle-age patients scored high on Post traumatic growth compared to young and older patients. Moreover, young age group patients were comparatively higher on psychological distress as compared to the middle age and older patients. The possible reason for the significant difference among the three groups on PTG and psychological distress might be attributed to the high levels of the burden that this disease imposes on the young and old patients. All groups were experiencing the same physical and psychological complaints and were equally suffered by the illness. However, the middle age groups (33 to 48 years) may be considered the most mature age group in terms of their age and coping abilities as compared to younger and older age group. They are probably better able to find new meaning to their physical state and develop positive change in coping with the disease condition as compared to young and old age counterparts.

While on the other hand, young age individuals may become easily distressed by this kind of trauma. They are not mature enough to think positively or cope with such disease condition. This group of patients might also have a poor concept of adjustment because of their age, and are not much strong and mature like their middle age counterparts. They are generally careless about their health condition which affects psychological health as well as their quality of life. Such findings suggest that this group because of their deteriorated physical condition may have trouble in maintaining a better quality of in the aftermath of a chronic illness condition. On the contrary, however, past research findings suggest that while dealing with chronic illnesses the post traumatic growth did not reveal many differences in terms of age groups e.g., a study conducted did not find a statistical difference in post-traumatic growth levels among different age groups having chronic medical conditions\textsuperscript{21}. Similarly, Post traumatic growth between youth and adults observed is quite similar among cancer patients and its existence among youth is a conceptual psychological idea however it is quite complex and is still considered as primarily hypothetical\textsuperscript{22,23}.

CONCLUSION

PTG experience can facilitate individuals struggling with highly challenging life circumstances especially if they are suffering from any health condition. Little is known about its relationship with psychological distress and several other demographic variables among patients undergoing dialysis. This study reveals a significant negative relationship of post traumatic growth with psychological distress and positive relationship with quality of life among the said group. This study further concludes that the age of patients having renal failure may be considered as the primary factor influencing PTG. We found that middle age group patients were significantly higher on PTG, however younger and older age patients were higher on psychological distress. As literature suggests that PTG can be useful in patients who are struggling with disease conditions. Therefore, health care providers and caregivers should pay special attention to young and old patients to reduce psychological distress and promoting PTG to help them in the recovery process.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

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