Quality of Life Index for Patients in Clinical Research – Principal Investigator's Perspective

Ms. Prachi Raut[*1], Dr. Kaushal Kapadia[2]

1. Texila American University.

2 Clinical Research Professional.

[*]**Correspondence to:** Ms. Prachi Raut, Texila American University

Abstract

Standardized QOL assessments play an important role in the economic evaluations of the healthcare system. QOL data assists in evaluating the cost-effectiveness of interventions that impact the patient's well-being and functional status. This information is valuable for healthcare decision-making, resource allocation, and reimbursement decisions in India. Standardisation ensures that QoL assessment instruments and measurements are used consistently throughout research, allowing for valid comparisons of QoL outcomes across various therapies, patient demographics, and clinical contexts. The relative efficiency of various therapies and interventions in enhancing patients' quality of life can be assessed by researchers and physicians thanks to consistent assessment. Without standardization, differences in measurement techniques and tools could provide erratic and incomparable results, making it difficult to evaluate and extrapolate findings. In the fields of health and medicine, the concept of quality-of-life QoL is crucial. QOL is a complicated topic that varies in how it is understood and defined across disciplines, including the fields of health and medicine. The World Health Organisation (WHO) definition has served as the foundation for the majority of QOL research. In the fields of health and medicine, quality of life QoL has grown to be recognized as a significant concept and goal for research and practice. By promotion of consistent and rigorous measurement of patients' QoL studies can drive research and healthcare practices that can truly prioritize the needs and preferences of patients thus fostering a more compassionate and effective healthcare system for all.

Keywords: Quality of life Index, Principal Investigator's perspective, standardization,

Introduction:

QoL is extremely important in health and medicine [1]. One definition of QoL is provided by the World Health Organisation (WHO), which states that it is "an individual's perception of their position in life in the context of the culture in which they live and in relation to their goals, expectations, standards, and concerns" [2].

QoL is a predictor of treatment effectiveness and is consequently of value in prognostication, it is also significant for the process of making medical decisions. For example, QoL has been found to be an important factor in determining one's likelihood of survival [3]. This ability to predict the future shows that there is a requirement for routine measurement of QoL in clinical trials [4].

There is a lack of conceptual clarity on what QoL means and how it is measured, which may provide a risk to the validity of QoL research [5]. The concept of "an absence of pain or the ability to function in day-to-day life" is used to describe the quality of life.[6] According to some research, a person's QoL is correlated with a "fighting spirit" and longer survival times.[7], "QoL is related to both the sufficiency of one's material circumstances and their perception by the individual. "Overall subjective feelings of well-being" that are "closely related to morale, happiness, and satisfaction" are included.[8]

The perceived quality of a person's everyday existence, or QoL, is an evaluation of their well-being or lack thereof. This includes all of the individual's emotional, social, and physical facets. Health-related QoL (HRQoL) measures how a person's well-being may change over time due to a disease, disability, or disorder.[9]

Healthcare professionals can assess a patient's health-related QoL using a variety of validated surveys. The results are then used to quantify intra-individual gains in QoL before and after therapy and to help decide treatment options for the patient based on prior results from other patients. It can assist healthcare professionals in deciding which treatment plan is the best choice when used as a longitudinal study tool that surveys patients before, during, and after treatment. This helps to improve healthcare through an evolutionary process.

Understanding the Quality of lifestyles is recounted as a topic in healthcare that is becoming more and more enormous because the connection between cost and value gives complicated issues, many of which can be very emotional in nature because of the capability influence on human existence. For example, healthcare companies need to use cost-benefit analyses to determine whether patients are granted expensive medications that could briefly expand their lives or marginally improve their QoL. The price of alternate treatment plans or preventative remedies should also be considered while evaluating those therapeutic medicines' value. An emphasis is made on enhancing health-related QoL by means of interventions like symptom management, adaptive generation, and palliative care in the case of persistent and/or terminal illness if no effective therapy is available [10].

Standardised QoL measures go through extensive psychometric testing to guarantee their reliability and validity. Researchers can collect trustworthy and accurate QoL data by following standardized procedures and utilizing validated instruments. Making decisions on the effectiveness of interventions and their effects on patients' well-being requires having access to reliable data. Standardization reduces measurement errors and boosts the reliability of the QoL findings from clinical trials. [11]. Researchers can capture the intricacies of QoL experiences across many cultures and languages by using standardised measures that have been culturally adjusted and validated, enabling more precise and comparable assessments of QoL outcomes. [12].

By offering accurate and comparable data on patients' wellbeing, standardisation in QoL indices promotes clinical decision-making [13]. Healthcare professionals can monitor treatment outcomes, follow patients' quality of life over time, and make educated judgements about therapy modifications and supportive care interventions with consistent measurement. By including patients' interests and views in the evaluation of treatment results, standardisation also supports patient-centred care by enabling more specialized and adapted healthcare actions. The Quality-of-Life Index considers a number of elements that affect a person's quality of life. Physical and emotional health, social relationships, functional capacities, and general happiness with the treatment or intervention under study are a few examples of these. Researchers can acquire a thorough grasp of how medical interventions affect patients beyond the conventional clinical outcomes, such as disease progression or survival rates, by analysing these factors.

The quality-of-life index results that are obtained offer valuable information that help in various ways such as clinical decision-making, the creation of healthcare policies, and the development of new drugs. These important data can also guide clinical judgement and the development of healthcare regulations. They also aid in comprehending the patient's preferences, needs and priorities when assessing treatment options. This approach makes it possible to assess the value and effectiveness of treatment interventions in greater detail.

Methodology:

The research project was a survey-based model where we gathered information on the challenges and acceptability of the QoL index for patients within India using questionnaires. The survey was distributed to investigators as they would be conducting clinical research trials at the site and they are the ones who interact with the subject's day in and day out, hence they will be able to share their thoughts about the issues and challenges from actual execution per se. The Questionnaires were developed with the help of available literature and by understanding the difference between existing questionnaires on QoL. Considering all the

parameters including the challenges and barriers, these questionnaires were built. The questionnaires were distributed on a digital platform which helped us reach the target faster and proved to be of low cost. A web portal was built which was an easy-to-use website, which provided a variety of functions as per our requirement.

Results:

In order to assess the significance of QoL in clinical research, 429 investigators were interviewed during the survey. Their responses are presented in the following section.
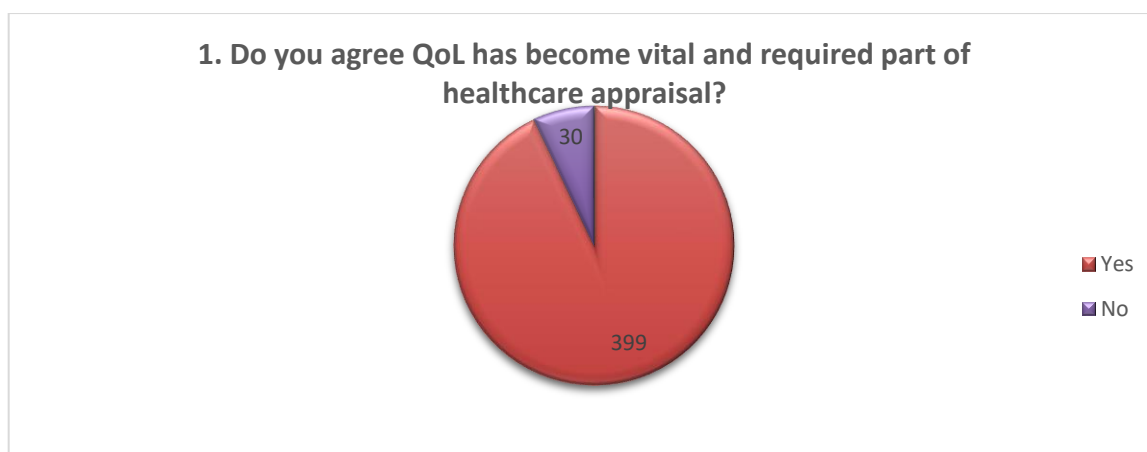

Fig. 1: Response of investigators to Q1 of the survey

The first question of the survey asked, 'Do you agree QoL has become vital and required part of healthcare appraisal?'. 93% of respondents said yes to this question, while only 7% said no (Fig. 1).

In the second question, the participants were asked, if they agreed that there is a need to assess QoL for all trials. To this, 267 (62%) of the participants agreed, while 162 (38%) stated that it was not always needed. The Chi square value was much below the cut-off of 0.05.
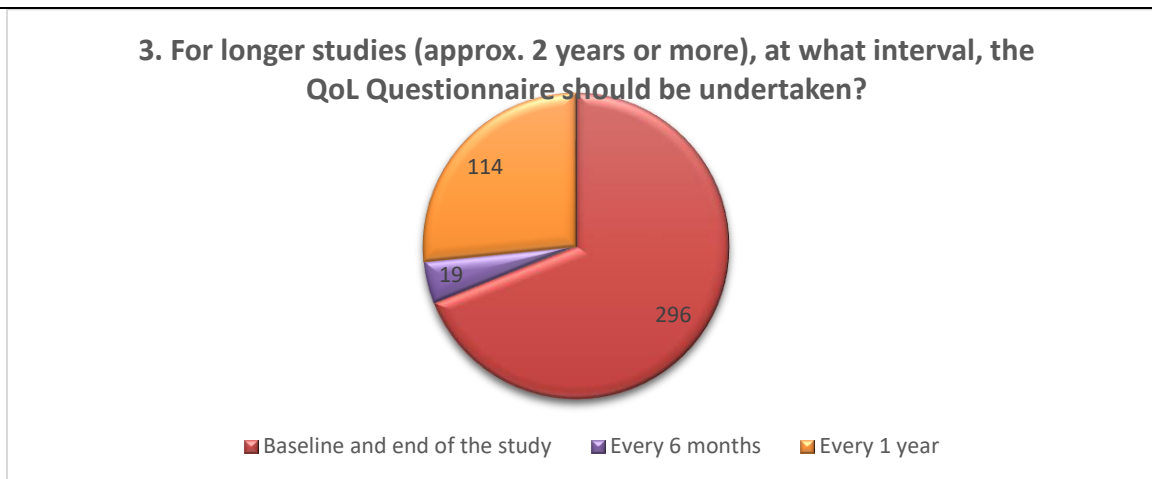
Fig. 2: Response of investigators to Q3 of the survey

Next, the participants were asked, 'For longer studies (approx. 2 years or more), at what interval, the QoL Questionnaire should be assessed'. To this majority of the participants (69%) were found to choose the option of 'Baseline and end of the study'. 4% chose 'every 6 months', while 27% chose 'every 1 year' (Fig. 2).
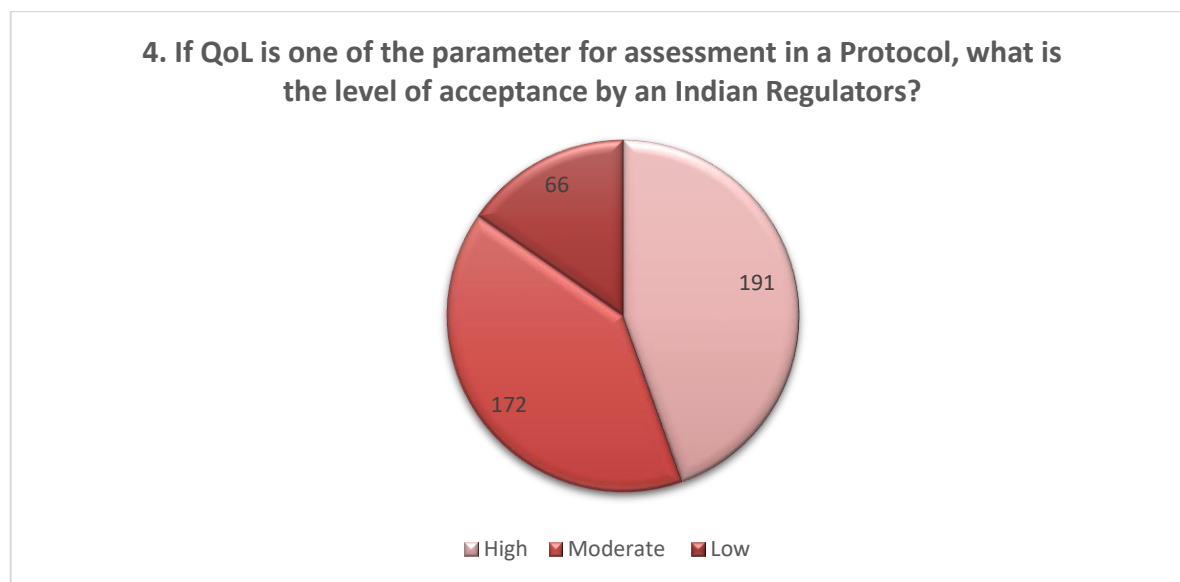

Fig. 3: Response of investigators to Q4 of the survey

Next, the participants were asked 'If QoL is one of the parameter for assessment in a Protocol, what is the level of acceptance by an Indian Regulators?'. To this, 191 (45%) of the participants responded by choosing 'High'. 40% chose 'Moderate', while 15% chose 'Low'.

When the participants were asked, whether sponsors should define the importance of QoL endpoint in that

specific clinical trial, 79% of the participants stated yes to it, while 21% said no.

Next, when the participants were asked if they were aware of any standardized questionnaire for QoL, 54% said yes and 46% said no. The response was found to be statistically not significantly different from random chance (P = 0.11).
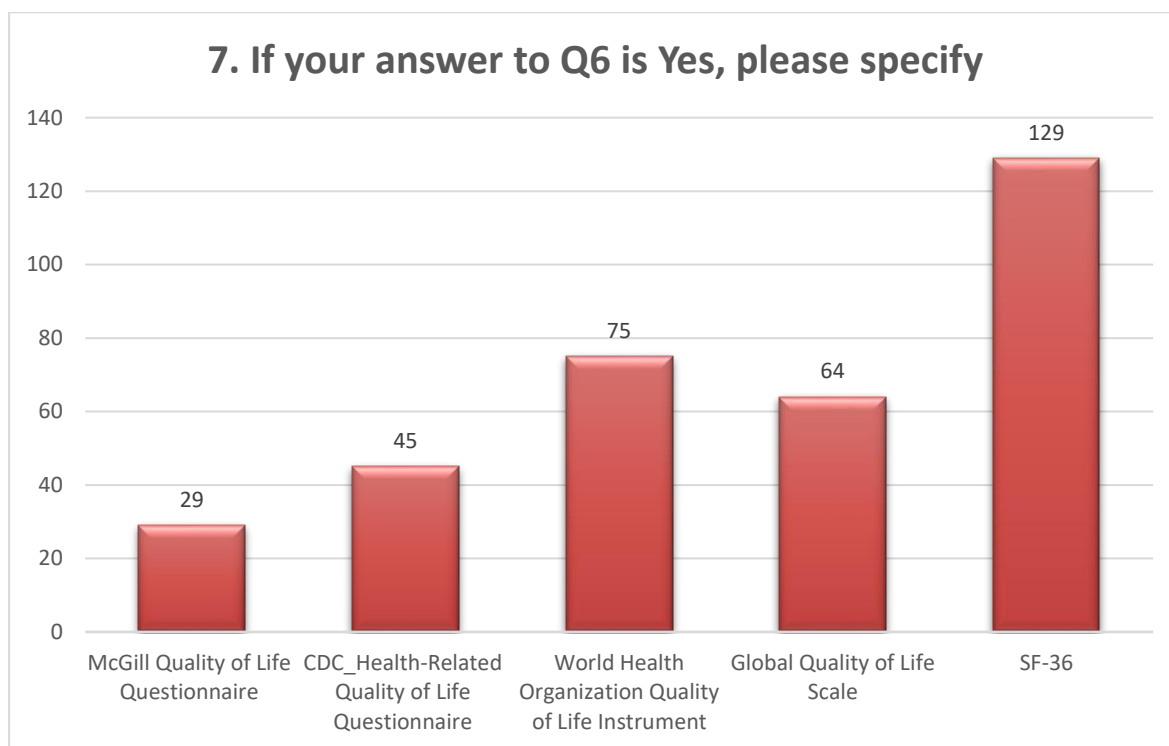

Fig. 4: Response of investigators to Q7 of the survey

Those answered with yes to question 6 were then asked specify the names of questionnaire they were aware of. To this 129 mentioned the SF36, 75 mentioned the World Health Organization Quality of Life Instrument and 64 mentioned the Global Quality of Life Scale. Their responses are presented in Fig.4.
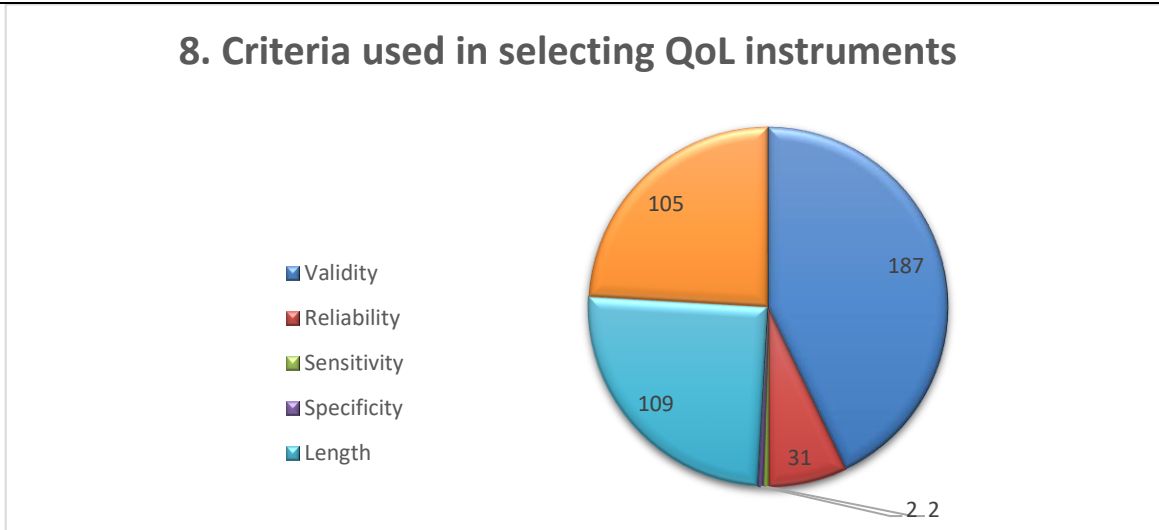
Fig. 5: Response of investigators to Q8 of the survey

When the participants were asked, what were the criteria for selecting QoL instruments, 187 of the participants chose 'Validity' (Fig. 5), while 105 chose 'Comprehensiveness'. Their detailed responses are presented in Fig.5.

Next, the participants were asked if they had ever used QoL in their clinical studies. To which the responses were equally divisive and were not statistically significant. When those responding with yes to this question were asked how many studies were found using this particular parameter of QoL. To which the average answer was at 51%. When the participants were asked to quote the percentage of studies which evaluated QoL as primary endpoint, the average response was at 70%.
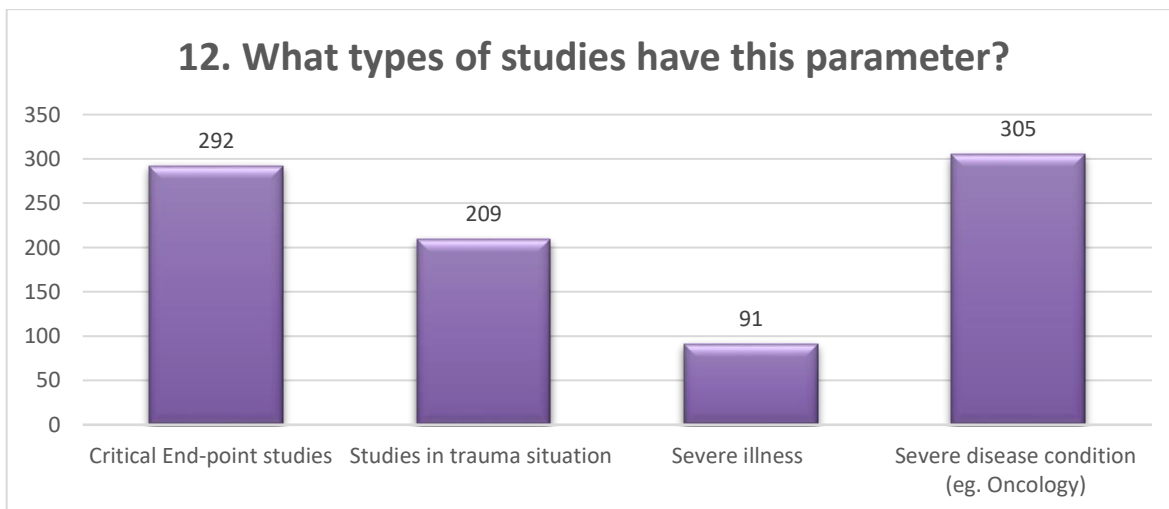

Fig. 6: Response of investigators to Q12 of the survey

Next the participants were asked about which type of studies have had this parameter. The distribution of

responses have been presented in Fig. 6.

When the participants were asked if QoL should be mandatory, 44% of the participants said 'yes'. The response to this question was found to be statistically significant (P = 0.01).

15. Challenges faced in implementing QoL as a parameter in clinical trials

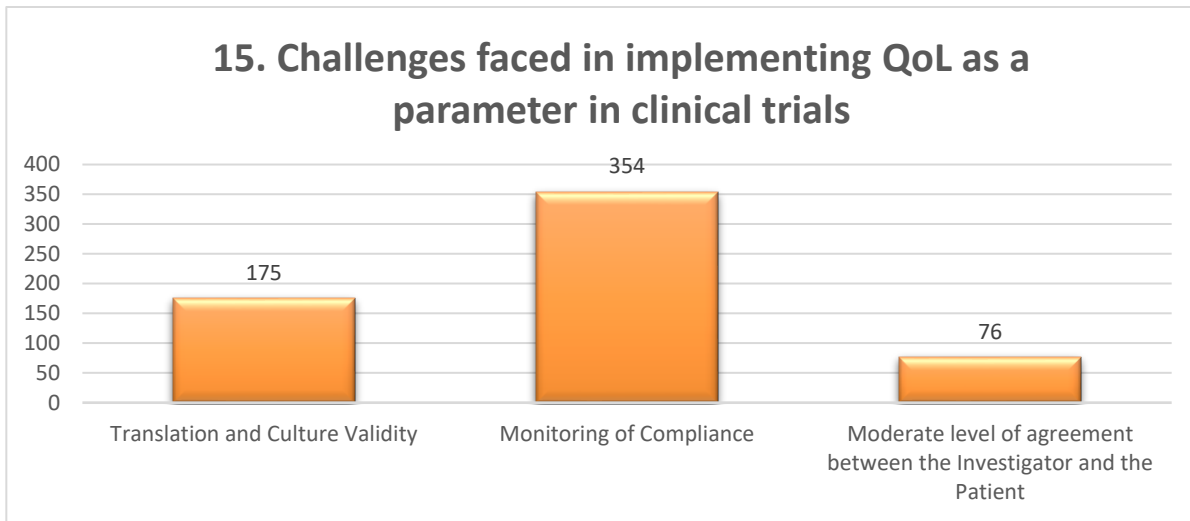| Translation and Culture Validity	Monitoring of Compliance	Moderate level of agreement between the Investigator and the Patient
175	354	76

Fig. 7: Response of investigators to Q15 of the survey

When the participants were asked to identify the major challenges faced in implementing QoL, 354 stated that it was Monitoring of Compliance, while Translation and Culture Validity was chosen by 175 individuals (Fig. 7). 76% of the participants stated that they do not think that QoL is a neglected domain in India.
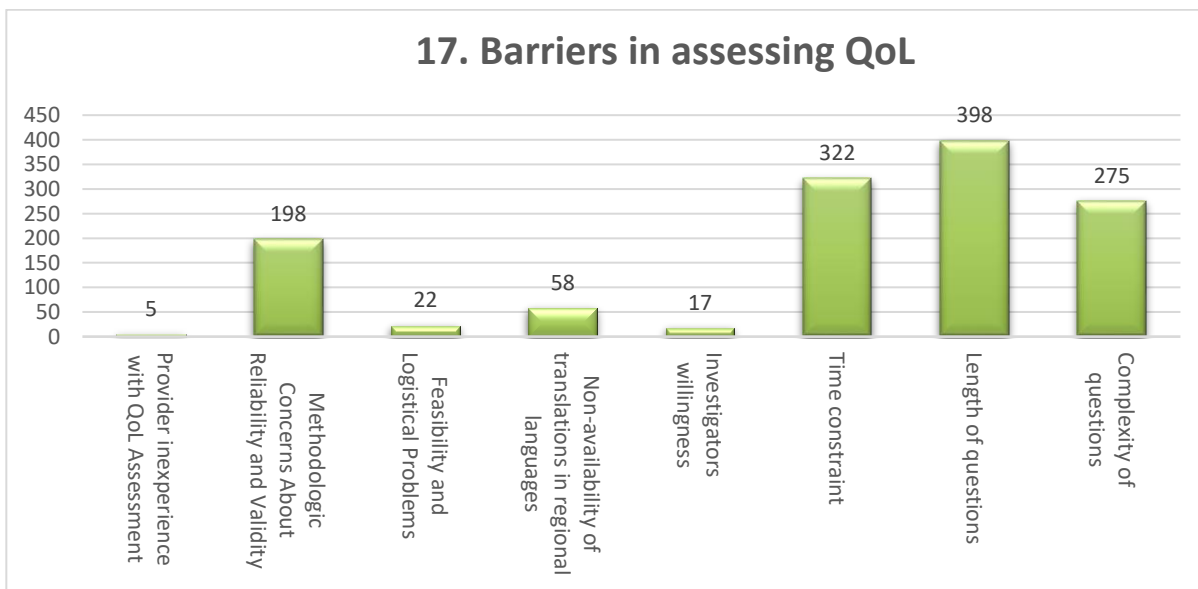

17. Barriers in assessing QoL

Provider inexperience with QoL Assessment	Methodologic Concerns About Reliability and Validity	Feasibility and Logistical Problems	Non-availability of translations in regional languages	Investigators willingness	Time constraint	Length of questions	Complexity of questions
5	198	22	58	17	322	398	275

Fig. 8: Response of investigators to Q17 of the survey

When the participants were asked what they thought be the major barriers in assessing QoL were, 398 stated that it was the length of questions. 322 responses identified time constraint as major barrier, while 275
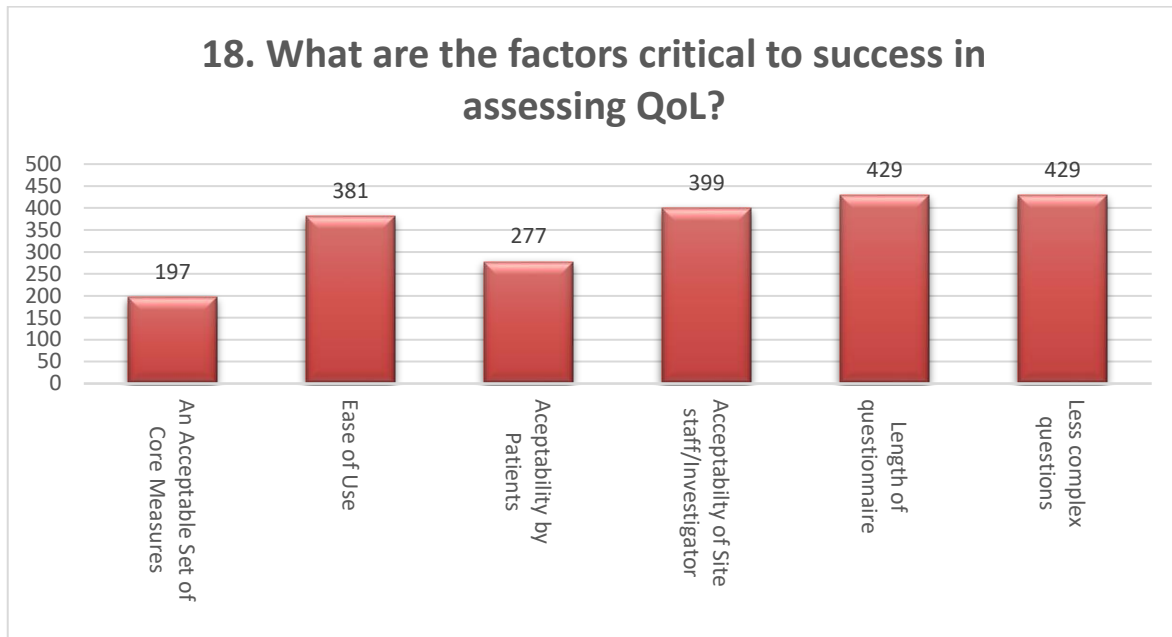
identified the complexity of questions.

Fig. 9: Response of investigators to Q18 of the survey

429 (100%) of the participants stated that Length of questionnaire and Less complex questions were factors critical to success in assessing QoL. 399 and 381 participants stated Acceptabilty of Site staff/Investigator and Ease of Use respectively (Fig. 9). When asked 'What are the success rates of QoL completed and returned in the Clinical Trials where QoL was not mandatory?' the mean percentage was at 89%.

When the investigators were asked if they were provided with sufficient instructions and trainings at the start of the trial, all of the respondents said yes. When the participants were asked, 'Are there any regulatory requirements for record keeping, maintenance and access of QoL?', 91% of them said yes. In response to the question 'Do you think, QoL should be part of Phase IV studies as they are focused on long term efficacy and safety?', 69.46% said no.
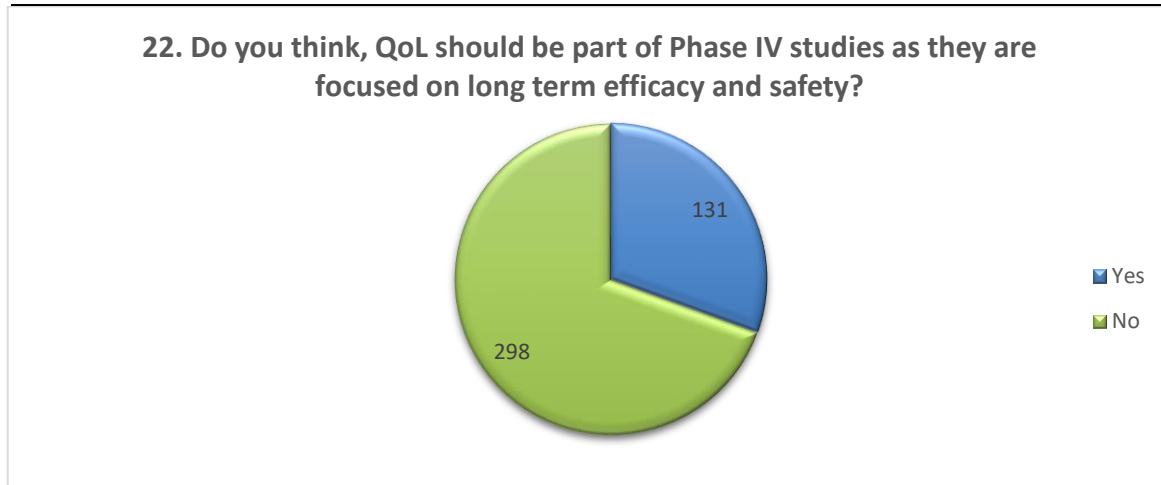
22. Do you think, QoL should be part of Phase IV studies as they are focused on long term efficacy and safety?

131

298

Yes
No

Fig. 10: Response of investigators to Q22 of the survey

Discussion:

93% of respondents said yes to the question if they agree that QoL has become vital and required part of healthcare appraisal. Understanding QOL is crucial for enhancing patient care, symptom alleviation, and rehabilitation. Standardization of the QoL index for patients in clinical trials is of utmost importance to ensure consistency, reliability, comparability, regulatory compliance, efficient resource allocation, and patient-centered care which leads to the advancement of scientific knowledge.

Over 60% of the participants agreed that there is a need to assess QoL for all trials. There are potential and limitations associated with the different QoL assessment methods used across trials and illness areas. On the one hand, it makes it challenging to compare and combine findings across studies, restricting the applicability of findings, and impeding the synthesis of available data. On the other hand, it enables researchers to specifically design QoL assessments for various groups and diseases, capturing the distinctive features of their experiences and results.

For longer studies (approx. 2 years or more), the majority of the participants (69%) said that the QoL Questionnaire should be assessed Baseline and end of the study. To assess the benefits and drawbacks of a proposed treatment, it is crucial to use standardized QoL indices, ensuring consistent reporting of results. Researchers can produce reliable data to support decisions concerning treatment approval, labelling, and post-marketing surveillance by employing these measures. [12] With the transition to patient-centered research, the use of QoL outcomes in clinical trial design has gained traction. While clinical objectives like survival or disease progression still matter the most, the addition of QoL endpoints emphasizes that the main

aim of medical therapy should be to enhance patients' overall QoL

A complicated and intricate problem is the variation in QoL evaluation methods used in various clinical studies and illness areas. Assessment of quality of life is essential for determining how interventions and therapies affect patients' health and functioning. However, there is a large disparity in the way QoL is evaluated in clinical trials because to the diversity of diseases, patient demographics, and research objectives.

When asked if the participants were aware of any standardized questionnaire for QoL, 54% said yes and 46% said no. The validity and reliability of QoL measurements are further impacted by the absence of standardization. While validity relates to the degree to which a measure precisely captures the concept it is intended to test, reliability refers to the consistency and repeatability of measurement. Without standardized methods, the reliability of QoL assessments could differ, making it challenging to reliably quantify changes in QoL. Furthermore, if the measures utilised do not sufficiently capture the pertinent features of wellbeing particular to the illness or community under study, the validity of QoL assessments may be jeopardized.

Regarding the value of QoL assessments in clinical research, researchers are still at odds. Measures of QoL, in the opinion of their proponents, offer more thorough information on therapy effects than conventional clinical evaluations and offer significant insights into patients' attitudes and outcomes. By documenting the impact of therapies on patients' emotional and physical well-being, QoL measures can disclose different therapeutic effects that may not be evident by biomarkers alone.

The absence of standardisation makes it difficult to integrate QoL measurements into common clinical practise. It is challenging to build a consistent and integrated approach to assessing and monitoring QoL in clinical settings if different studies and disease areas use different QoL measures and methodologies. Consistencies in assessment procedures limit the inclusion of QoL data into clinical decision-making, make it difficult to monitor patient outcomes over time, and obstruct communication between healthcare professionals. There have been a number of conceptual and methodological studies on QOL that have been published [14, 15,16, 17, 18]. For instance, Bratt and Moons [14] did a comprehensive literature analysis of all empirical studies of QoL in patients with congenital heart disease that have been published since 1974 in order to determine the range of conceptual and methodological rigor of studies and to detect temporal trends. Their goals were to determine the range of conceptual and methodological rigor of studies and to identify historical trends. They utilized the ten review criteria that had been established in the past by Gill and Feinstein in 1994 [19] and further developed by Moons et al. in 2004 [20]. The review found that there is a widespread prevalence of serious shortcomings in methodological rigor, despite the fact that research on QoL in persons with congenital heart disease has been going on for forty years.

The significance of QoL assessment in clinical trials has also been acknowledged by regulatory bodies, who have established recommendations for its inclusion. Among others, the FDA and EMA emphasize the necessity of validated tools, suitable study design, and standardized reporting of QoL outcomes. This guidance makes ensuring that QoL assessment is carried out rigorously and consistently, enabling regulatory assessments of treatment benefits and risks and promoting comparability between studies.

Conclusion:

The importance of QOL issues in health care practice and research has been gradually increasing. The Quality-of-Life Index is a useful instrument for assessing the effects of medical interventions in the real world. Clinical trials frequently concentrate on measurable clinical outcomes; however, they cannot accurately reflect the patient's viewpoint and subjective feelings. Using the quality-of-life index, researchers can better understand the patient's ability to carry out everyday duties, maintain relationships and take part in social and recreational activities and how these are affected by the therapies. In conclusion, there is a considerable lack of standardisation in QoL evaluation across trials and illness areas. It affects integration into clinical practise, reliability, validity, data pooling, comparability, and reliability. In order to improve the reliability and calibre of QoL evaluation, relevant comparisons, rigorous evidence synthesis, and enhanced patient-centered care are required.

References

1.Barcaccia B, Esposito G, Matarese M, Bertolaso M, Elvira M, De Marinis MG. Defining quality of life: a wild-goose chase?. Europe's Journal of Psychology. 2013 Feb 28;9(1). https://doi.org/10.23668/psycharchives.1365

2.Karimi M, Brazier J. Health, health-related quality of life, and quality of life: what is the difference?. Pharmacoeconomics. 2016 Jul;34:645-9. doi: 10.4081/hpr.2013.e27

3.Megari K. Quality of life in chronic disease patients. Health psychology research. 2013 Sep 9;1(3). doi: 10.4081/hpr.2013.e27

4.Fayers PM, Machin D. Quality of life: the assessment, analysis and interpretation of patient-reported outcomes. John Wiley & Sons; 2013 May 23.

5.Anthony SJ, Selkirk E, Sung L, Klaassen RJ, Dix D, Scheinemann K, Klassen AF. Considering quality of life for children with cancer: A systematic review of patient-reported outcome measures and the development of a conceptual model. Quality of life research. 2014 Apr;23:771-89. https://doi.org/10.1007/s11136-013-0482-x

6.White Jr RP, Shugars DA, Shafer DM, Laskin DM, Buckley MJ, Phillips C. Recovery after third molar surgery: clinical and health-related quality of life outcomes. Journal of oral and maxillofacial surgery. 2003 May 1;61(5):535-44. https://doi.org/10.1053/joms.2003.50106

7.Cotton SP, Levine EG, Fitzpatrick CM, Dold KH, Targ E. Exploring the relationships among spiritual well-being, quality of life, and psychological adjustment in women with breast cancer. Psycho-Oncology: Journal of the Psychological, Social and Behavioral Dimensions of Cancer. 1999 Sep;8(5):429-38. https://doi.org/10.1002/(SICI)1099-1611(199909/10)8:5<429::AID-PON420>3.0.CO;2-P

8.McDowell I. Measures of self-perceived well-being. Journal of psychosomatic research. 2010 Jul 1;69(1):69-79. https://doi.org/10.1016/j.jpsychores.2009.07.002

9.Powell PA, Carlton J. A comprehensive qualitative framework for health-related quality of life in Duchenne muscular dystrophy. Quality of Life Research. 2023 Jan;32(1):225-36. https://doi.org/10.1007/s11136-022-03240-w

10.Radbruch L, De Lima L, Knaul F, Wenk R, Ali Z, Bhatnaghar S, Blanchard C, Bruera E, Buitrago R, Burla C, Callaway M. Redefining palliative care—a new consensus-based definition. Journal of pain and symptom management. 2020 Oct 1;60(4):754-64. https://doi.org/10.1016/j.jpainsymman.2020.04.027

11.Dowdy DW, Eid MP, Sedrakyan A, Mendez-Tellez PA, Pronovost PJ, Herridge MS, Needham DM. Quality of life in adult survivors of critical illness: a systematic review of the literature. Intensive care medicine. 2005 May;31:611-20. https://doi.org/10.1007/s00134-005-2592-6

12.Koller M, Aaronson NK, Blazeby J, Bottomley A, Dewolf L, Fayers P, Johnson C, Ramage J, Scott N, West K, EORTC Quality of Life Group. Translation procedures for standardised quality of life questionnaires: The European Organisation for Research and Treatment of Cancer (EORTC) approach. European Journal of Cancer. 2007 Aug 1;43(12):1810-20. https://doi.org/10.1016/j.ejca.2007.05.029

13.Moattari M, Ebrahimi M, Sharifi N, Rouzbeh J. The effect of empowerment on the self-efficacy, quality of life and clinical and laboratory indicators of patients treated with hemodialysis: a randomized controlled trial. Health and quality of life outcomes. 2012 Dec;10:1-0. https://doi.org/10.1186/1477-7525-10-115

14. Bratt EL, Moons P. Forty years of quality-of-life research in congenital heart disease: Temporal trends in conceptual and methodological rigor. International journal of cardiology. 2015 Sep 15;195:1-6. https://doi.org/10.1016/j.ijcard.2015.05.070

15. Vankova D. Conceptual and Methodological Approaches to Quality of Life-a public health perspective. Scripta Scientifica Salutis Publicae. 2016 Jan 6;1(2):7-13. DOI: http://dx.doi.org/10.14748/sssp.v1i2.1380

16. Fernández-Ballesteros R. Quality of life in old age: Problematic issues. Applied Research in Quality of life. 2011 Mar;6:21-40. https://doi.org/10.1007/s11482-010-9110-x

17. Moons P, Luyckx K. Quality-of-life research in adult patients with congenital heart disease: current status and the way forward. Acta Paediatrica. 2019 Oct;108(10):1765-72. https://doi.org/10.1111/apa.14876

18. Edwards-Schachter ME, Matti CE, Alcántara E. Fostering quality of life through social innovation: A living lab methodology study case. Review of policy research. 2012 Nov;29(6):672-92. https://doi.org/10.1111/j.1541-1338.2012.00588.x

19. Gill TM, Feinstein AR. A critical appraisal of the quality of quality-of-life measurements. Jama. 1994 Aug 24;272(8):619-26. doi:10.1001/jama.1994.03520080072047

20. Moons P, Van Deyk K, Budts W, De Geest S. Caliber of quality-of-life assessments in congenital heart disease: a plea for more conceptual and methodological rigor. Archives of pediatrics & adolescent medicine. 2004 Nov 1;158(11):1062-9. doi:10.1001/archpedi.158.11.1062.