



Quality of Life Index for Patients in Clinical Research – Research Professional’s Perspective

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Abstract

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. The quality-of-life index makes a significant contribution to clinical research by evaluating how different medical treatments affect patients' general well-being and contentment. It offers a thorough grasp of how treatments affect patients' lives beyond clinical outcomes by taking into account subjective elements. Clinical trials put a high value on QoL measurement because it gives researchers a thorough grasp of how therapies affect patients' general well-being. Although important, conventional clinical outcomes like survival rates or disease progression may not fully reflect the range of patient experiences and the entire impact of treatments on their daily life. By focusing on patient's subjective assessments of their physical, emotional, social, and functional well-being, QoL assessment fills in this gap. Researchers and physicians can learn important new information about the wider implications of therapies and the genuine patient benefits from this comprehensive evaluation. The research personnel's perspective is examined in this study. Most of the research professionals agree that QoL has become an important part of the healthcare appraisal.

Keywords: *Quality of life, QoL index, Research professional, Standardization.*

Introduction:

The concept of QoL is complex and can be interpreted and defined in different ways across various disciplines. This has led to the use of a diverse range of tools for assessing QoL [1]. Interestingly, these assessment tools were not created based on a specific definition or conceptual framework rather, they have been developed based largely on considerations drawn from actual research [2]. Consequently, 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 [3].

The WHO, although there is no universally accepted definition, provides one definition of QoL. According to [4], QoL is the way an individual perceives their place in life within the culture and values of their surrounding environment, taking into account their goals, expectations, standards, and worries. Defined by the acronym HRQOL, health-related quality of life is a phrase utilized to characterize the consequences of illness and therapy on an individual's daily abilities and impairments. Additionally, it pertains to how one's personal perception of health hinders their capacity to experience a satisfying existence [5]. More concretely, HRQOL represents the evaluation assigned to the length of one's life that is impacted by limitations, functional conditions, perspectives, and possibilities, all of which may be changed by ailments, injuries, therapies, and regulations.

Research on QoL additionally makes it simpler to do comparative analyses across quite a few geographical regions, nationalities, or populations. Researchers are capable of uncovering differences and gaining a better understanding of the factors that lead to varying degrees of QoL after they examine exceptional measures of well-being. This comparative standpoint promotes cross-cultural understanding and policy learning as it permits nations to study from one another's stories and implement powerful measures to enhance QoL.

Numerous QoL measuring approaches examine a wide range of facets of an individual's health and happiness, as well as their general sense of fulfilment in life as a whole. These methods and indexes provide a comprehensive framework for understanding and assessing the effects of a wide range of circumstances on the standard of living of individuals, groups, and even nations as a whole. This framework can be used to assess the QoL of individuals, groups, and nations.

The World Health Organisation QoL (WHOQOL) questionnaire is one of the most well-known and commonly used measures for evaluating QoL [6]. The WHOQOL is a comprehensive instrument that evaluates a person's perception of their QoL across a number of domains, including their physical well-being,

psychological health, social interactions, and environmental factors. The WHOQOL was developed by the World Health Organisation. It is a set of questions that were translated into a variety of languages as part of a study on cross-cultural interaction. The purpose of the study was to collect respondents' subjective opinions of a variety of facets of daily life.[7]

An excellent illustration of a QoL assessment tool is the Human Development instrument (HDI), which measures an individual's personal well-being in addition to the statistics on life expectancy, education, and per capita income [8]. As a result, the United Nations Development Programme (UNDP) developed the Human Development Index (HDI), which is an intricate measurement of human development and living standards at the national level.

While QoL studies are considered to be an important part of clinical trials, there are numerous barriers that can impede the enforcement and implementation of the QoL studies. One possible explanation for such absences is that clinicians have an inherent bias against using measurements of questionable quality. Other common barriers are:

- Lack of standardized method: There is a lack of consensus on the most appropriate and standardized method for measuring QoL in clinical trials. Different instruments and scales are present which makes it challenging to select the right instrument in the right type of study with a varied type population in varied landscape which further challenges the interpretation of results. Thus, researchers and sponsors struggle to select the most relevant and reliable tools for assessing QOL [9].
- Limited resources and funding: Some researchers argue that adding a QOL measure to the protocol will increase study costs. Conducting QOL studies requires additional resources and funding. However, excluding QOL measures generally invalidates the study because one of the most obvious issues about an intervention is how it affects the patient's well-being. There may be a lack of resources particularly for smaller studies. Lack of adequate funding can also hinder the enforcement of QOL assessments and thus limit the quality and scope of the study [10].
- Feasibility and burden: Incorporation of QOL studies in clinical trials can increase the burden on patients and the investigators. The questionnaires require additional time and resources. The logistic administration and analysis of the QOL data can be complex and may require expertise [11].
- Timeline: Clinical trials have tight timelines therefore adding QOL studies can extend the duration of the study. There is pressure to complete the trial in the limited time, thus in that case researchers prioritize

primary clinical endpoints over QOL evaluation.[12]

- Interpretation of results: Even though QOL data is collected, there are challenges in the interpretation and integration of the results into the clinical trial findings. Thus, determining the clinical significance of QOL outcomes and their relationship to other clinical trial endpoints can be complex. Thus, need for standardized guidelines for interpreting and reporting the QOL results need to be developed.[13]

- Regulatory and Sponsor priorities: Regulatory bodies and trial sponsors may prioritize clinical outcomes or endpoints over QOL studies. Thus, the importance of QOL studies may not be perceived by them [14].

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.

India is a diverse country with a plethora of variations in cultural practices, languages, and socioeconomic factors. Standardization of the QOL assessment will provide a consistent measure of patient-reported outcomes across diverse populations ensuring the applicability and meaning fullness of the assessment. [15]

Methodology:

The research project survey-based model where information was gathered on the challenges and acceptability of the QoL index for patients within India using questionnaires. It was distributed among Clinical Research Professionals as they would be managing the clinical trials and hence will be in a better position to comment in the challenges in executing the QoL during the study conduct. The Questionnaires are 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, 432 research professionals were interviewed during the survey. Their responses are presented in the following section.

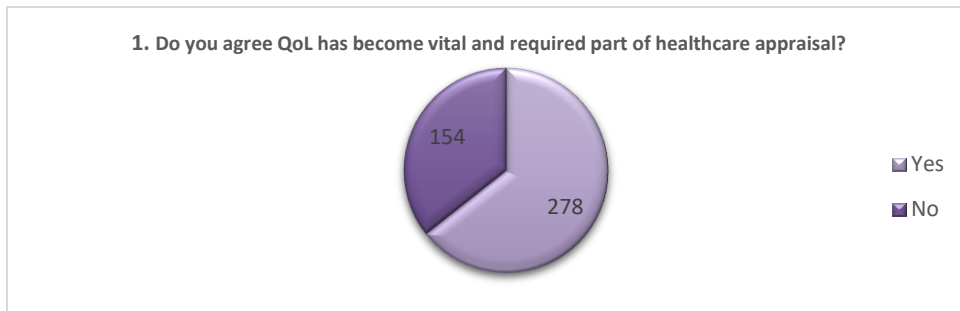


Fig. 1: Response of clinical research professionals to Q1 of the survey

In the first question, the participants were asked, if they agreed that QoL had become a vital and required part of healthcare appraisal. To this, 64% of the participants agreed. In order to test if the response from participants was an artefact of random selection or not, a Chi-square test was performed, with the level of significance set at $P \geq 0.05$. The null hypothesis of the test was set at random selection, with no difference from the participants in each response. In case of the first question the P value was much below this cut off, so the response pattern generated cannot be stated to be random.

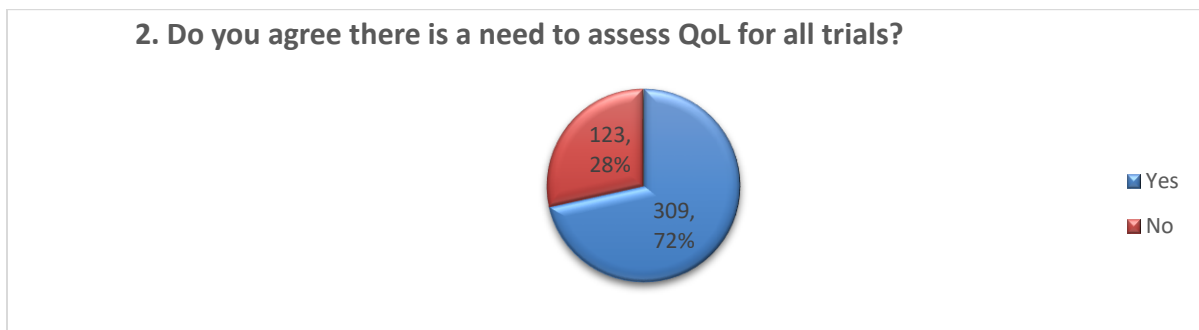


Fig. 2: Response of clinical research professionals to Q2 of the survey

In the second question, the participants were asked, if they agreed that there is a need to assess QoL for all trials. To this, 309 (64%) of the participants agreed, while 123 (28%) stated that it was not always needed. The Chi square value was much below the cut-off of 0.05.

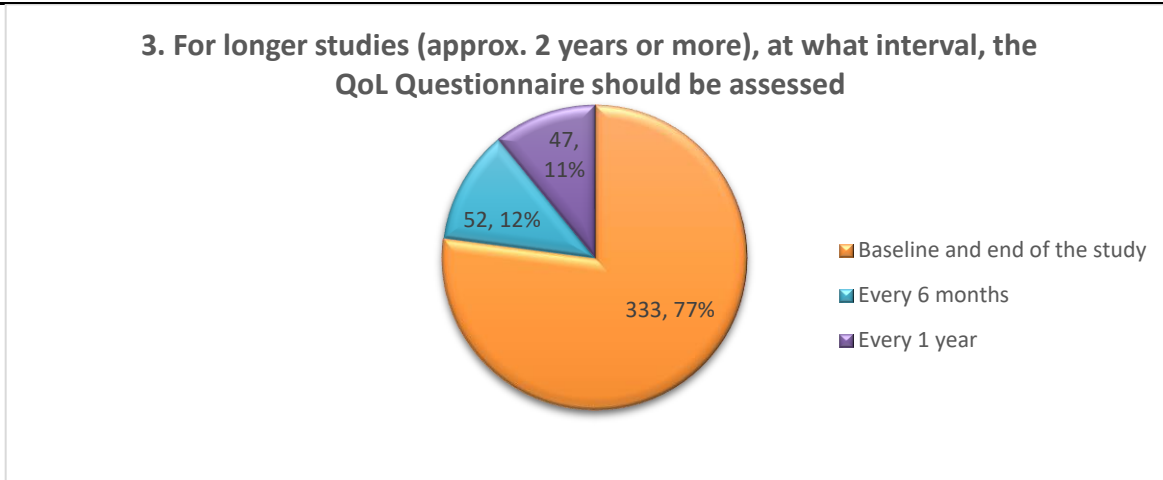


Fig. 3: Response of clinical research professionals to Q3 of the survey

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 (77%) were found to choose the option of ‘Baseline and end of the study’. 12% chose ‘every 6 months’, while 11% chose ‘every 1 year’.

In response to the next question asking, what should be the level of acceptance by an investigator if QoL is one of the parameters of assessment in a protocol, 93% of the participants stated that it should be ‘High’. Only 7% opted for ‘Moderate’, while none went for ‘low’.

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, 300 (70%) of the participants responded by choosing ‘High’. 23% chose ‘Moderate’, while 7% chose ‘Low’.

The participants were asked if they were of any other country’s regulation stating QoL should be a necessary parameter. In response to this majority (79%) of the participants stated that they were unaware (Fig. 6) and only 21% answered in ‘Yes’. Among those who answered in positive, 56 stated USFDA, 22 stated the EMA and only 2 mentioned the DCGI (Fig. 4).

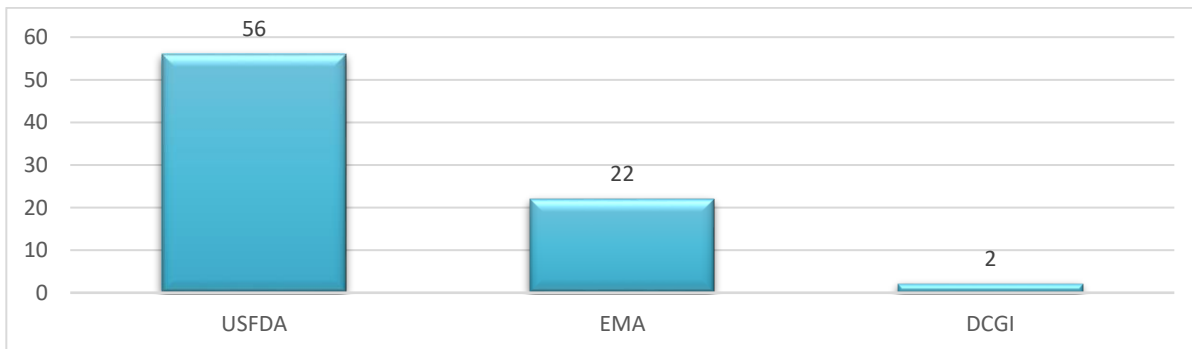


Fig. 4: Response of clinical research professionals to Q7 of the survey

Next, when the participants were asked if they were aware of any standardized questionnaire for QoL, all of the participants said yes (Table 1). When they were asked to specify, 85 of the participants mentioned the CDC_Health-Related Quality of Life Questionnaire, while 4 participants mentioned the McGill Quality of Life Questionnaire and 3 mentioned the Quality of Life Scale (Flanagan) (Fig. 5).

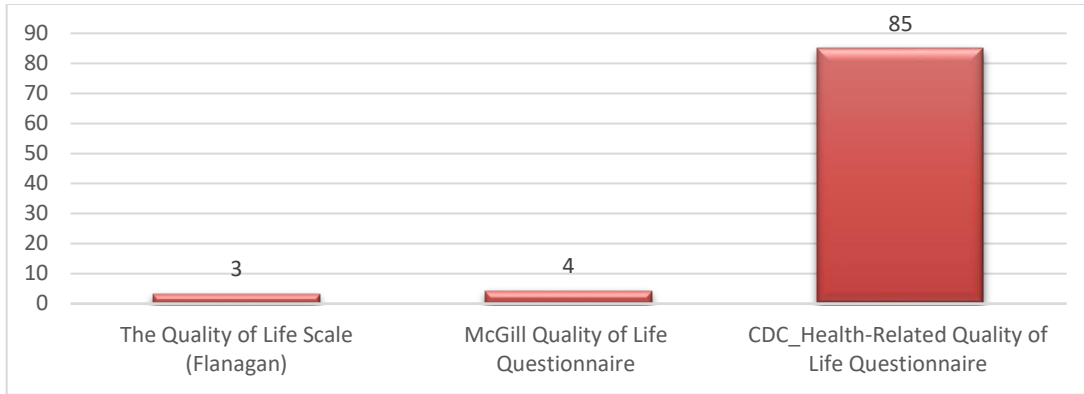


Fig. 5: Response of clinical research professionals to Q9 of the survey

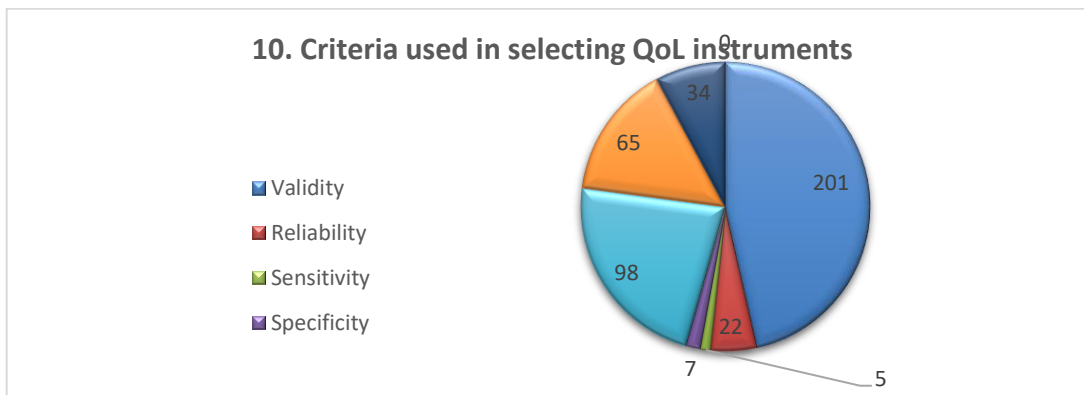


Fig. 6: Response of clinical research professionals to Q10 of the survey

When the participants were asked, what were the criteria for selecting QoL instruments, 201 of the participants chose ‘Validity’ (Fig. 6), while 98 chose ‘Comprehensiveness’.

When the participants were asked if they had ever come across QoL parameter associated in clinical studies?, the responses were equally distributed between ‘Yes’ and ‘No’. Hence they were found not to be significantly different from chance ($P \geq 0.05$). Those who stated ‘Yes’ in response to this question also stated that they observed that on an average they saw this parameter to be associated with QoL in case of 37% of studies.

Next, the participants were asked ‘Why was QoL selected as one of the parameter in the said trial?’. The participants were allowed to state more than one reason, to which 311 stated that it was done due to increased likelihood of FDA approval, while another 276 stated that this was done for publications in scientific journal

(Fig. 7).

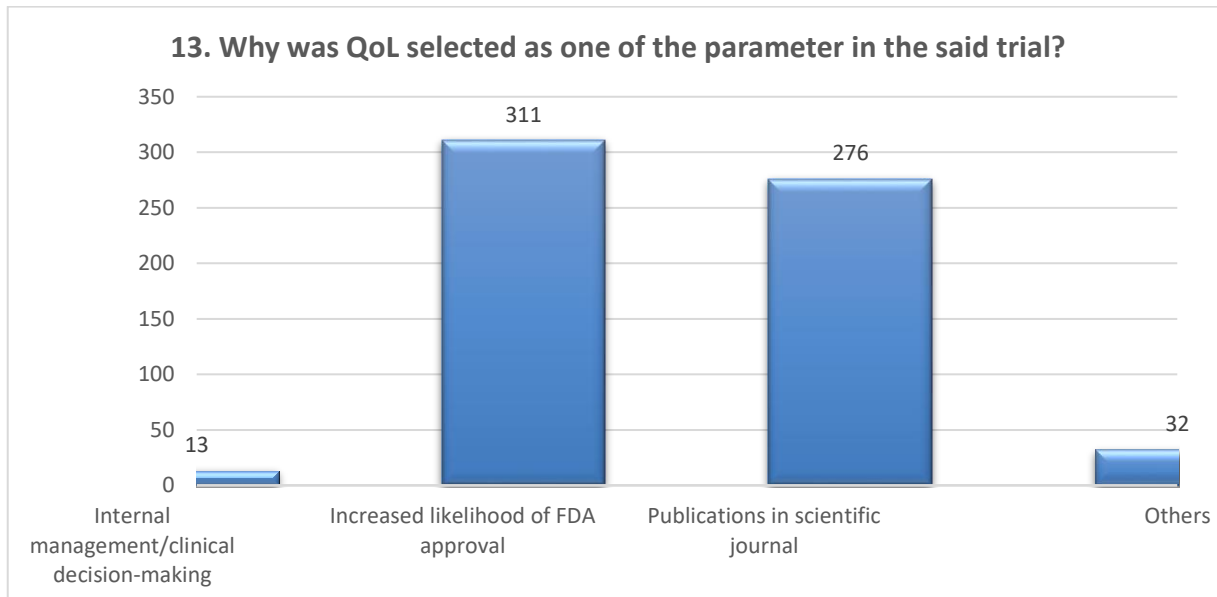


Fig. 7: Response of clinical research professionals to Q13 of the survey

When the participants were asked to quote the percentage of studies which evaluated QoL as primary endpoint, on average the response was at 19%. Next, the participants were asked ‘What types of studies have this parameter?’. To this 79.17% of the participants stated that this was done in case of severe illnesses (Fig. 8).

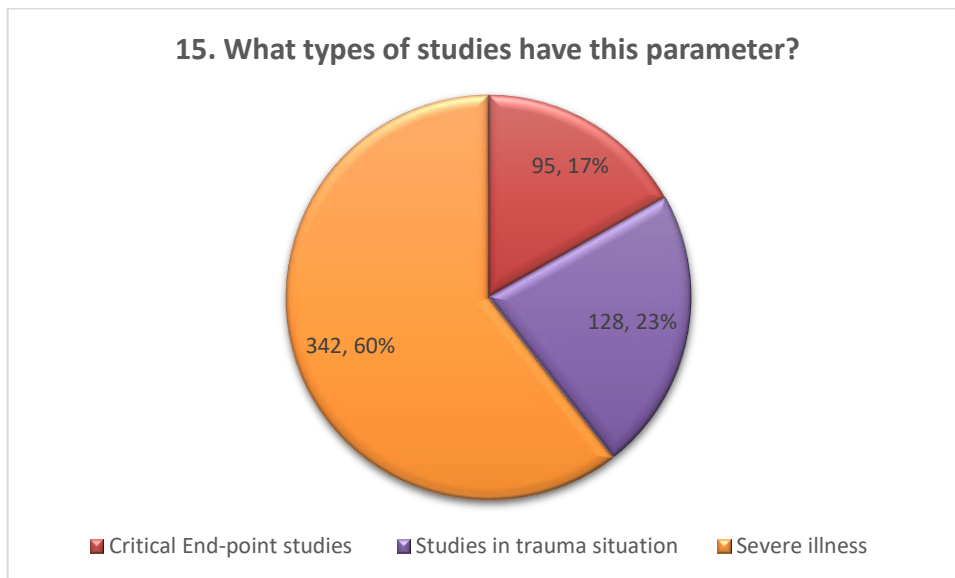


Fig. 8: Response of clinical research professionals to Q15 of the survey

When the participants were asked in question 16, ‘What are the success rates of QoL completed and returned in the Clinical Trials where QoL was not mandatory?’, the mean percentage was 70%.

When the participants were asked if QoL should be mandatory, 72% of the participants said ‘yes’. When the participants were asked to identify the major challenges faced in implementing QoL, 338 stated that it was Monitoring of Compliance, while Translation and Culture Validity was chosen by 219 individuals (Fig. 9).

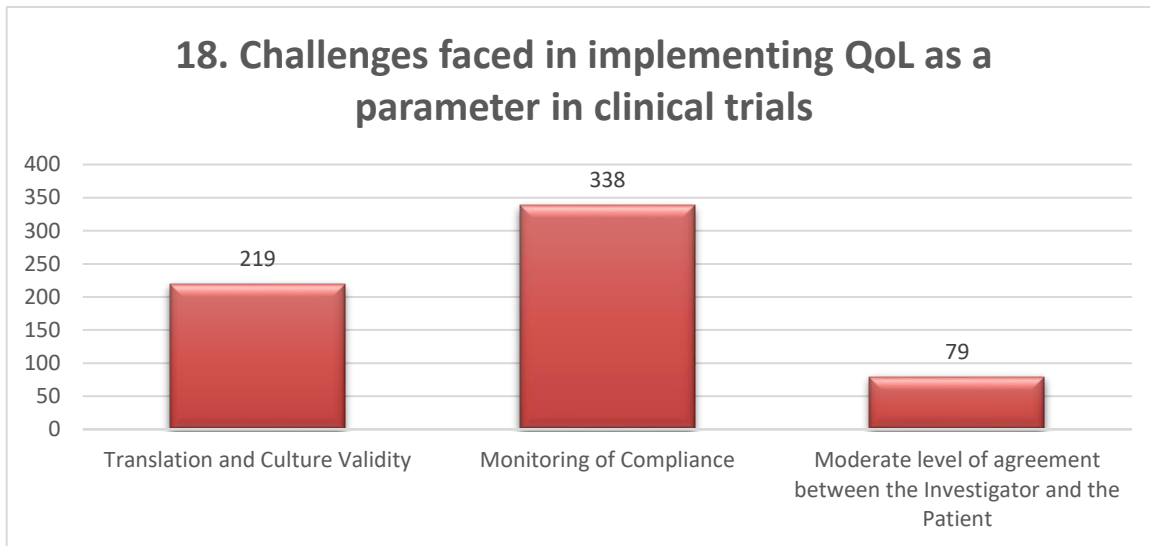


Fig. 9: Response of clinical research professionals to Q18 of the survey

According to the responses generated for question 19, the major barriers in assessing QoL were ‘Provider inexperience with QoL Assessment’ (38.89%) and ‘Methodologic Concerns About Reliability and Validity’ (30.56%) (Fig. 10).

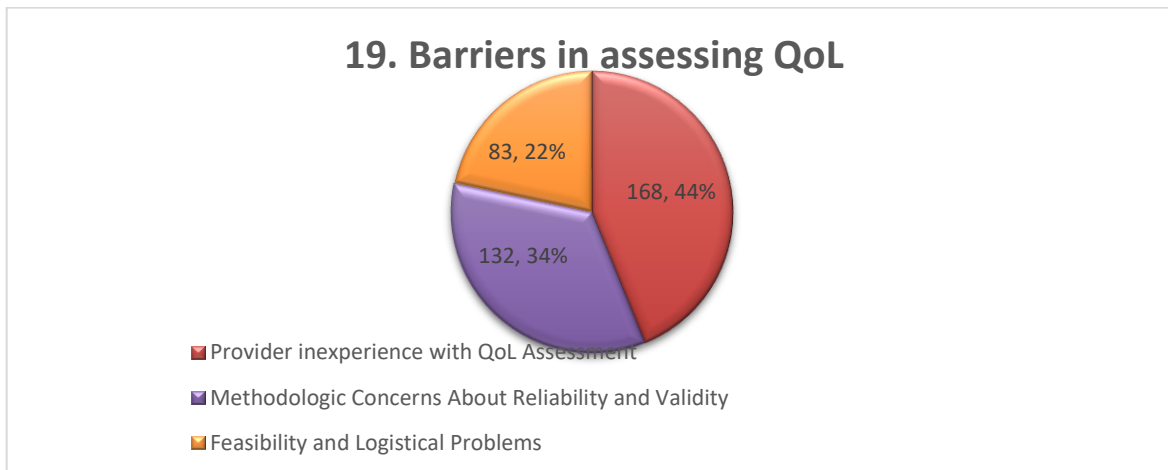


Fig. 10: Response of clinical research professionals to Q19 of the survey

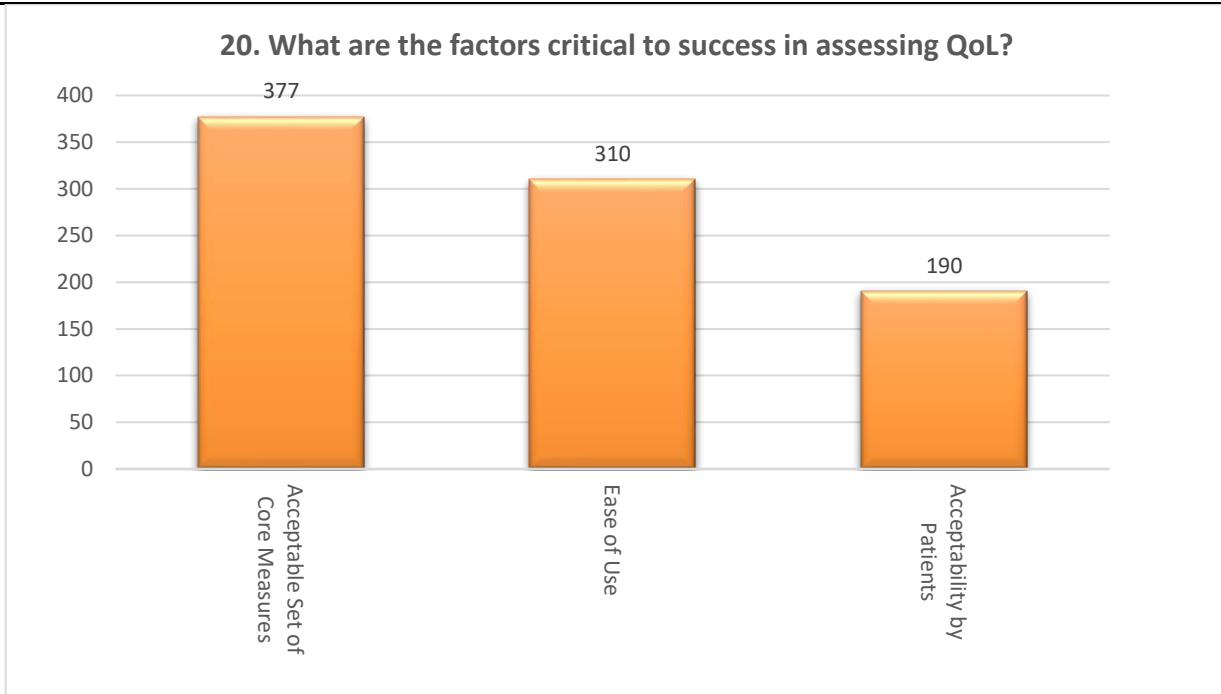


Fig. 11: Response of clinical research professionals to Q20 of the survey

Next, the participants were asked ‘What are the factors critical to success in assessing QoL?’. To which, 377 responses identified it to be ‘Acceptable Set of Core Measures’, while 310 responses stated it to be, ‘Ease of Use’ (Fig. 11). When the participants were asked ‘Percentage of acceptability by sites if QoL is’, the response for primary end point was 70% on an average. 67% on an average chose the secondary end point, while 43% chose the tertiary end point.

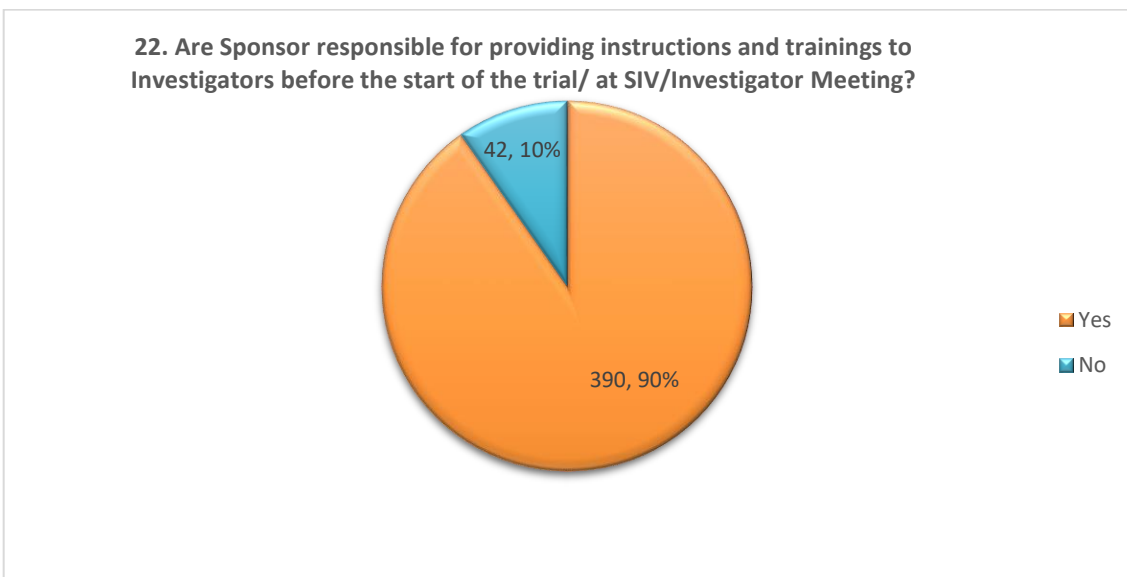


Fig. 12: Response of clinical research professionals to Q22 of the survey

When asked the question ‘Are Sponsor responsible for providing instructions and trainings to Investigators before the start of the trial/ at SIV/Investigator Meeting?’, 90% of the respondents said yes, while only 10% said ‘no’. In response to the question, ‘23. Are there any regulatory requirements for record keeping, maintenance and access of QoL’, 78.94% said ‘no’, while in response to ‘Do you think QoL is a neglected domain in India?’, the negative answers were at 90.97%.

Discussion:

Developing a consistent and robust quality of life (QoL) index can overcome the difficulties associated with the variability of clinical research measures. It can also simplify the data collection and analysis process and enable meaningful comparisons between studies and patient populations, resulting in a more evidence-driven decision-making process.

64.35% of the clinical research professionals agreed that QoL has become a vital part of the healthcare appraisal. Regarding the assessment of QoL for all trials 71.53 % of the clinical research professionals agreed that there is a need to assess QoL for all clinical trials while 28.47% of the respondents disagreed upon this. When asked about the frequency of QoL questionnaire assessment in longer studies, 77.08% of the clinical research professionals indicated that QoL questionnaire should be assessed at the baseline and end of the study while 12.04% of them preferred assessment every 6 months, and 10.88% preferred assessment every 1 year.

The remarkably high acceptance rate (92.82%) of QoL assessment as a metric by researchers highlights the propensity of experts to incorporate patient-centered perspectives into their research methodologies. Similarly, a favorable trend in acknowledging the importance of QoL in regulatory evaluations reveals the regulator's expectation of a higher acceptance rate in India (69.44%).

Technology developments have also influenced how QoL is currently assessed in clinical trials. Real-time data collection is made possible by electronic platforms like electronic Patient-Reported Outcome (ePRO) systems, which reduce recall bias and improve data quality. With the help of wearable technology, web-based platforms, and mobile applications, patients' quality of life may be continuously and remotely monitored, allowing for a more thorough and dynamic evaluation of their health.

Across various trials and disease areas, the absence of standardization in QoL evaluation raises a number of difficulties. These difficulties may affect the comparability, dependability, and interpretability of QoL data, limiting the capacity for inference and decision-making. Here, we'll look at some of the main issues raised

by the absence of standards for QoL assessment.

The difficulty of comparing outcomes across trials is a significant obstacle. It becomes difficult to compare QoL outcomes across trials and disease areas without standardized measurement tools and assessment processes. It might be challenging to merge or aggregate data because multiple QoL measures, domains, and response options may be used in each study. The creation of a thorough understanding of QoL outcomes across various populations and therapies is hampered by this lack of comparability.

The clinical importance of the results may be difficult to understand as a result of inconsistent QoL assessment procedures. It is difficult to distinguish whether observed improvements are genuine or merely the result of measurement error because there are no standardised thresholds for clinically significant changes in QoL scores. Standardisation would make it easier to define clinically significant thresholds, enabling researchers and clinicians to assess changes in QoL in a meaningful manner and decide on the efficacy of treatments.

There have been a number of conceptual and methodological evaluations of QOL published. For instance, Bratt and Moons ^[16] conducted a thorough literature assessment of all empirical investigations of QOL in patients with congenital heart disease published since 1974 with the goal of assessing the range of conceptual and methodological rigour of studies and of finding temporal patterns. Ten review criteria that had previously been created by Gill and Feinstein in 1994 ^[17] and further disputed by Moons et al. in 2004 ^[18] were used by them. 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 which has an impact on the patient's well-being and functional status ^[19]. This information is valuable for healthcare decision-making, resource allocation, and reimbursement decisions in India.

The evaluation of QoL in Medical Research Council (MRC) cancer clinical trials has been done for more than ten years, and this is the basis for these. Examples from a variety of current MRC Cancer Trials Office procedures are provided, and it is suggested that they could serve as models when creating new protocols.

Conclusion:

In clinical trials, it is necessary to standardize the measurement of QOL. This ensures that the data collected is consistent and reliable. Without standardization, the results may be biased and difficult to compare. Therefore, it is important to establish a universal measurement tool for QOL that can be used across different

studies. By doing so, researchers can more accurately assess the impact of interventions on a patient's QOL and ultimately improve their overall well-being. This further highlights the significance of QOL standardization in clinical trials. Standardization of the QoL measure is crucial for several reasons. Providing standardized and uniform measurement is necessary to ensure that QoL data is reliable, valid, and comparable across multiple studies. This is particularly important given the significance of QoL assessment in clinical trials. Implementation and enforcement of QoL in clinical research require collaboration among various stakeholders, including researchers, regulatory bodies, healthcare providers, and patient advocacy groups. Thus, it is essential to establish guidelines and best practices for the consistent integration of QoL assessments into research protocols and reporting standards.

References

1. Makai P, Brouwer WB, Koopmanschap MA, Stolk EA, Nieboer AP. Quality of life instruments for economic evaluations in health and social care for older people: a systematic review. *Social science & medicine*. 2014 Feb 1;102:83-93. <https://doi.org/10.1016/j.socscimed.2013.11.050>
2. Haraldstad K, Wahl A, Andenæs R, Andersen JR, Andersen MH, Beisland E, Borge CR, Engebretsen E, Eisemann M, Halvorsrud L, Hanssen TA. A systematic review of quality of life research in medicine and health sciences. *Quality of life Research*. 2019 Oct;28:2641-50.
3. Anthony SJ, Selkirk E, Sung L, Klaassen RJ, Dix D, Scheinmann 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>
4. Orley J, Saxena S, Herrman H. Quality of life and mental illness: reflections from the perspective of the WHOQOL. *The British Journal of Psychiatry*. 1998 Apr;172(4):291-3. DOI: <https://doi.org/10.1192/bjp.172.4.291>
5. Goethals ER, Volkening LK, Laffel LM. Executive dysfunction is associated with poorer health-related quality of life in adolescents with type 1 diabetes: differences by sex. *Quality of Life Research*. 2021 Mar;30:751-8. <https://doi.org/10.1007/s11136-020-02681-5>
6. Ginieri-Coccosis M, Triantafillou E, Tomaras V, Liappas IA, Christodoulou GN, Papadimitriou GN.

Quality of life in mentally ill, physically ill and healthy individuals: The validation of the Greek version of the World Health Organization Quality of Life (WHOQOL-100) questionnaire. *Annals of General Psychiatry*. 2009 Dec;8:1-4. <https://doi.org/10.1186/1744-859X-8-23>

7.WHOQoL Group. The development of the World Health Organization quality of life assessment instrument (the WHOQOL). In *Quality of Life Assessment: International Perspectives: Proceedings of the Joint-Meeting Organized by the World Health Organization and the Fondation IPSEN in Paris, July 2–3, 1993* 1994 (pp. 41-57). Berlin, Heidelberg: Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-642-79123-9_4

8.Lind NC. Some thoughts on the human development index. *Social Indicators Research*. 1992 Aug;27:89-101. <https://doi.org/10.1007/BF00300511>

9.Bullinger M, TBI Consensus Group. Quality of life in patients with traumatic brain injury-basic issues, assessment and recommendations. *Restorative neurology and neuroscience*. 2002 Jan 1;20(3-4):111-24.

10.Young T, Maher J. Collecting quality of life data in EORTC clinical trials—what happens in practice?. *Psycho-Oncology: Journal of the Psychological, Social and Behavioral Dimensions of Cancer*. 1999 May;8(3):260-3. [https://doi.org/10.1002/\(SICI\)1099-1611\(199905/06\)8:3<260::AID-PON383>3.0.CO;2-Z](https://doi.org/10.1002/(SICI)1099-1611(199905/06)8:3<260::AID-PON383>3.0.CO;2-Z)

11.Efficace F, Rees J, Fayers P, Pusic A, Taphoorn M, Greimel E, Reijneveld J, Whale K, Blazeby J. Overcoming barriers to the implementation of patient-reported outcomes in cancer clinical trials: the PROMOTION Registry. *Health and Quality of Life Outcomes*. 2014 Dec;12:1-5. <https://doi.org/10.1186/1477-7525-12-86>

12.Olschewski M, Schulgen G, Schumacher M, Altman DG. Quality of life assessment in clinical cancer research. *British journal of cancer*. 1994 Jul;70(1):1. doi: 10.1038/bjc.1994.240

13.Snyder CF, Aaronson NK, Choucair AK, Elliott TE, Greenhalgh J, Halyard MY, Hess R, Miller DM, Reeve BB, Santana M. Implementing patient-reported outcomes assessment in clinical practice: a review of the options and considerations. *Quality of Life Research*. 2012 Oct;21:1305-14. <https://doi.org/10.1007/s11136-011-0054-x>

14.Fogel DB. Factors associated with clinical trials that fail and opportunities for improving the likelihood of success: a review. *Contemporary clinical trials*

15.Vidhubala E, Kannan RR, Mani CS, Karthikesh K, Muthuvel R, Surendran V, Premkumari R. Validation of quality of life questionnaire for patients with cancer-Indian scenario. *Indian journal of cancer*. 2005 Jul

1;42(3):138-44. DOI: 10.4103/0019-509X.17058

16.Sung H, Ferlay J, Siegel RL, Laversanne M, Soerjomataram I, Jemal A, Bray F. Global cancer statistics 2020: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. *CA: a cancer journal for clinicians*. 2021 May;71(3):209-49. <https://doi.org/10.3322/caac.21660>

17.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.1994.03520080061045

18.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

19.Acharya S. Oral health-related quality of life and its associated factors in an Indian adult population. *Oral health & preventive dentistry*. 2008 Jun 1;6(3).

