

**How to Cite:**

Valdebenito, V. (2023). Impact of clowning with children and adolescents in confinement according to the KINDL-r questionnaire revised version. *International Journal of Health Sciences*, 6(S9), 4607–4615. Retrieved from <https://sciencescholar.us/journal/index.php/ijhs/article/view/13868>

# Impact of clowning with children and adolescents in confinement according to the KINDL-r questionnaire revised version

**Victoria Valdebenito**

Sociologist, MeD y PhD. Assistant Professor, School of Psychology, Universidad Adolfo Ibáñez, Chile.

Corresponding author email: [victoria.valdebenito@uai.cl](mailto:victoria.valdebenito@uai.cl)  
<https://orcid.org/0000-0002-6254-8747>

**Abstract**---Background: The COVID-19 pandemic forced measurement such as confinement. This article presents results of online clown workshops developed during confinement between October 2020 and August 2021 with children and adolescents of low socioeconomic status in Chile, which main aim was to promote children and adolescents' quality of life. Methods: Using a quantitative approach, a quasi-experimental design of a single group and a pre-posttest design, the Strengths and Difficulties Questionnaire and the KINDL-r Questionnaire revised version were used. One hundred and twenty-three caregivers responded the pretest, and 73 the posttest. Results: Results revealed that 28% of participants improved their self-esteem, 26% significantly increased their physical and emotional well-being, 18% improved their family well-being, and 16% the well-being associated with friends. Conclusion: These positive findings are consistent with literature about effects of clowns working in healthcare settings. However, more research is needed in other contexts.

**Keywords**---Children and adolescent quality of life, clown, confinement.

**Introduction**

Due to the rapid spread and mortality of the SARS-COV-2 virus, governments around the world established different control measures. One of these is confinement, a measure of social distancing and isolation [1]. The latter has effects on the subjective experience of adults and children [2]. For children, closure of schools, online education, adults working from home and lack of support from other caregivers such as grandparents, produced an increase or

appearance of different symptoms [3, 4]. One of these are effects on children's mental health.

To overcome this, a collaborative network initiative between different organizations in Chile was developed to provide education to children from low socioeconomic sectors during confinement. Part of the strategy was to use the methodology of clown. The results presented here come from measurements done to children, reported by their parents, who participated in the clown workshops between October 2020 and August 2021. The main objective of these workshops was to promote children and adolescents' mental health and quality of life, working emotions through clowning.

Children and adolescents in confinement in Antofagasta (42), Coquimbo (462) and Santiago (36), participated in the workshops. These had four online sessions, of one hour each, using the Zoom platform. Each session had between six and twenty participants, in addition to one moderator and two professional clowns. There were specific themes per each session: what have they felt during pandemic, naming emotions, strategies used to express emotions and a closing session.

Clown is a theatrical technique, characterized by its direct communication with the audience, expressing honestly through its emotions and sensations, protected by the use of a red nose, laughing at himself, being gentle, acting based on her/his own failure [5], being a kind of antihero with whose humanity people empathize.

Clowns have been working in healthcare settings around the globe since the 80's, showing physical, psychological and social positive effects [6, 9]. Clowns not only work in healthcare settings but also in education [10] and conflict zones. Organizations such as *Clown Without Borders International* and *REDNOSE* are some examples. Regarding education, the experience of organizations such as *Takolo*, *Pirritx*, *Porrotx* and *Marimotots* in the Basque country [11], has proven positive effects in promoting values such as equity and respect in education. Some [12] have also pointed the importance of laughter for communities in crisis, such as that produced by COVID-19. However, there is lack of research other contexts when compared with evidence in healthcare settings. This paper is contribution in this line.

Due to the characteristic of their work in healthcare settings, clowns validate all emotions and display socioemotional competencies [13]. These are a set of skills, knowledge and attitudes, which a part of emotional intelligence [14], related to humane care [15], such as empathy, compassion and assertive communication, amongst others [16].

## **Methods**

As part of a bigger project, the clown workshops were measured. A quantitative approach and a quasi-experimental design were used. A diagnostic device was designed to perform a screening of children and adolescents. Participants whom enrolled in the program had to answer a questionnaire that allowed an initial

diagnosis on mental health issues, specifically depression, anxiety, stress and psychological functioning.

For such purpose, the Strengths and Difficulties Questionnaire SDQ [17], translated and validated for Chile [18] was used. Parents and/or caregivers' reports were used for children from two to four and from four to seventeen years old. The questionnaire has 28 items divided into five subscales: emotional symptoms, behavioral problems, attention problems and hyperactivity, peer problems and prosocial behavior. Each item presents a statement to which parents responded with "Not true", "Somewhat true" or "Totally true", regarding to their child. Additionally, nine items were included aimed at identifying specific problems in areas of emotions, concentration, behavior or ability to relate to others. To identify those cases that could require referral for specialized mental health care, cut-off points proposed by Gaete et al. [18] were considered.

To assess quality of life of children and adolescents, the Questionnaire for Measuring Health-Related Quality of Life in Children and Adolescents, revised version KINDL-r Questionnaire [19-20] and validated in Chile [21] was used. It evaluates quality of life of children regarding six dimensions: physical well-being, emotional well-being, self-esteem, family, friends and daily functioning (school or pre-school). Reports of parents and caregivers were used for children between three and six years old (46 items), and between seven and 17 years old (24 items). In both cases, a series of statements related to the child's situation were presented, against which caregivers had to indicate on a five-level scale, whether these situations characterize their child in the last week. This instrument was only used to evaluate the results of the program, not interpreting its initial scores for referral.

For the clown workshops assessment, a quasi-experimental design of a single group was used, with a pre-posttest design. The sample size was 123 caregivers for the pretest and 73 for the posttest, number of respondents significantly lower, out of the 630 participants of the workshops. Due to the number of participants and the type of variables measured, literature recommends the Reliable Change Index (RCI) [22, 24], which was used. To facilitate interpretation, the reliable net percentage of change (%NCF) was also estimated, which represents the percentage of participants who experienced a significant improvement ( $ICR \geq |1,645|$  points) in each evaluated variable, for a favorable result. Depending on the type of variable, a significant favorable improvement was considered as an increase (e.g., subjective well-being) or a decrease (e.g., anxiety) of the measured variable. Moreover, Cohen's D to measure effect size in mean changes was calculated. Quality of this study was ensured through reliability of data collection questionnaires and strict ethical criteria such as confidentiality and anonymity.

## **Results**

The SDQ was applied as a pretest before starting the workshops. From a psychometric point of view, reliability of its different subscales was .77 for emotional symptoms, .75 for behavioral problems, .69 for hyperactivity, .53 for peer problems, and .56 for prosocial behavior. In comparative terms, greatest difficulties were observed in hyperactivity and problems with peers.

The discriminative capacity of the KINDL subscales items (D) was also analyzed, given that they were evaluated in the pre and post tests. Its reliability (R) was calculated for each subscale in the pre and posttest. Similarly, means (M) and standard deviations (SD) were estimated for each item.

Results corresponding to the physical well-being scale, showed a reliability in the pre and posttest of 0.72 and 0.69, respectively. In the case of emotional well-being, reliability in the pre-test was 0.68, while in the posttest it dropped to 0.62. For the self-esteem scale, a reliability of 0.87 was observed in the pre-test, and of 0.80 in the posttest. Regarding family well-being, the scale showed an initial reliability of 0.79, which later dropped to 0.62.

Regarding well-being relative to friends, reliability of 0.63 was reached in the pretest, which then decreased significantly in the posttest, reaching 0.47. Detailed analysis of this scale identified one item as a problematic indicator, so it was decided to discard it, thus achieving a reliability of 0.68 in the pretest, and 0.82 in the posttest.

Finally, the school well-being scale only reached a reliability of 0.32 in the pre-test and 0.31 in the posttest. A detailed items analysis did not show a consistent pattern of malfunction attributable to the same item in pre and posttests, so it was decided to not include this scale in subsequent analyses. These results are presented in Table 1.

Table 1 Pre-Post Children KINDLr Results

Scale	N	Means	DT	Min	Max
Physical 1	123	4.0	0.7	2	5
Emotional 1	123	4.0	0.7	2	5
Self-esteem 1	123	3.9	0.8	1.5	5
Family 1	123	4.2	0.7	2	5
Friends 1	123	3.8	0.7	1.75	5
Physical 2	73	4.3	0.7	1.5	5
Emotional2	73	4.4	0.6	2	5
Self-esteem 2	73	4.5	0.6	3	5
Family 2	73	4.4	0.6	2.5	5
Friends 2	73	4.2	0.7	2.25	5

The following, Table 2, compares the difference between scales, computed as sum of items divided by number of items, in pre and posttest. All the differences are significant, implying that attending the workshop is associated with an increase in quality of life.

Table 2 Pre-Post difference between scales

Scale	t	df	p	Cohen's d
Physical	3.33	49	<.001	0.471
Emotional	4.20	49	<.001	0.594
Self-esteem	5.93	49	<.001	0.839
Family	5.15	49	<.001	0.728
Friends	3.92	49	<.001	0.554

Also following the same procedure used previously, the net percentage of reliable change (%NCF) was estimated. Results revealed that 28% of the participants improved their self-esteem and that 26% significantly increased their physical and emotional well-being. Additionally, 18% improved their family well-being and 16% well-being associated with peers. No significant gender differences were observed when comparing children experiencing significant increases in their well-being.

## Discussion

In the context of confinement due to the COVID-19 pandemic, the pretest measurement with children, revealed problems in emotional symptoms, behavior problems, hyperactivity, peer problems and prosocial behavior. One research [25] studied the impact of confinement on mental health in preschool and school children with high social vulnerability in Chile. Particularly, emotional and behavioral problems such as an increase in sadness, listlessness, and changes in appetite were revealed, consistent with findings presented here.

However, posttest results show positive effects of the clown workshops, such as an improvement of self-esteem, in line with previous evidence. In this regard, a qualitative study in Chile revealed that clowns benefit this aspect in children in the context of palliative care [26]. On the other hand, these results shown a significant improvement in children's physical well-being. International evidence has point that in children in hospital clowns have this effect [27, 28], being as relevant factor in children's quality of life [29].

There is also evidence about positives impacts of healthcare clowns on emotional well-being [7, 30, 34]. Similarly, regarding improved family well-being, understood as a dynamic state, defined collectively and subjectively, and valued by its members, in which both individual and family needs interact [35], evidence show how clowns can reduce anxiety in parents from different cultural backgrounds [36].

Improvement in relationships with friends is an important outcome. Evidence has shown impacts of lack of socialization and play during confinement in Chile [37]. In these interactions play is developed, which is fundamental during childhood since it facilitates development of language, thought, expression of emotions, world views and acquisition of social skills [38, 39], being also one of the fundamental rights of children.

Since difficulties in school and with peers can be risk factors for mental health [40], and for cognitive development [41], these results are important. Confinement

makes children more dependent on their caregivers, not only for homework but also for play. The results presented here indicate that, in the context of a pandemic, it is necessary to design actions to support families in this regard, such as the studied clown workshops.

Another research proposes that the clown in education settings promotes values such as respect, equanimity and solidarity [42], allowing elaboration on social issues [15]. The possibilities of the clown methodology come from its social roles [5], beyond entertainment. Moreover, the figure of the clown plays a political role [26] such as defending children's rights.

## **Conclusions**

In summary, this paper has shown positive effects of the clown methodology on children's quality of life, consistent with evidence of clowning in healthcare settings. Such impacts can be explained by socioemotional competencies displayed by clowns [11]. However, more research is needed in this respect. Regarding future research lines, as others have pointed [40], these results highlight the importance of more studies about clowning in education in Chile and Latin America. In spite of these positive effects, limitations of this work must be acknowledged. Firstly, the sample size was a restriction, especially for the posttest as mentioned before. Due to the increasing complexity of psychosocial phenomena, it is important to highlight the relevance and appropriateness of innovative solutions such as the clown methodology in the current world to protect quality of life and well-being of our future generations.

## **Declarations**

### **Ethics approval and consent to participate**

Ethical approval for the study was provided by the the Adolfo Ibáñez University Ethics Committee, Chile. Informed consent was obtained from all individual participants included in the study. Informed consent was obtained from parents for participants below 18 years. All methods were performed in accordance with the Declaration of Helsinki.

The datasets used and/or analysed during the current study is available from the corresponding author on reasonable request.

### **Consent for publication**

Not applicable.

### **Competing interests**

The author has no relevant financial or non-financial interests to disclose.

### **Funding**

This research was part of the *Learning and Caring for (us) in Community Project*, coordinated by the School of Psychology of the Adolfo Ibáñez University, part of the Digital Education initiative RED, sponsored by the BHP Chile Foundation.

### Authors' contributions

The manuscript draft was written by V. Valdebenito.

### Acknowledgements

The author would like to acknowledge to children and their families who participated in the workshops for their generosity. Also to the BHP Chile Foundation for their sponsor.

### References

1. Wang Y, Shi L., Que J, Lu Q, Liu L, Lu Z, Xu Y, Liu J, Sun Y, Meng S, Yuan K, Ran M, Lu L., Bao Y, Shi J. The impact of quarantine on mental health status among general population in China during the COVID-19 pandemic. *Molecular Psychiatry*. 2021;26:4813–4822. doi.org/10.1038/s41380-021-01019-y
2. Herrera D. Husserl y el mundo de la vida. *Franciscanum*. 2010;52:153.
3. Deacon SH, Rodriguez LM, Elgendi M, King FE, Nogueira-Arjona R, Sherry SB, Stewart SH. Parenting Through a Pandemic: Mental Health and Substance Use Consequences of Mandated Homeschooling. *Couple and Family Psychology. Research and Practice*. 2021;10(80):1-13. doi:10.1037/cfp0000171
4. Zengin M, Yayan EH, Vicnelioğlu E. The effects of the COVID-19 pandemic on children's lifestyles and anxiety levels. *Journal of Child and Adolescent Psychiatric Nursing*. 2021;34:236–242. doi.org/10.1111/jcap.12316
5. Jara J. *El clown, un navegante de las emociones*. Barcelona: Editorial Octaedro; 2000.
6. Raviv A. *Medical clowning. The healing performance*. Calcuta: Seagull Books; 2018.
7. Lopes-Júnior L, Bomfim E, Olson K, Tatsch E, Calheiros D, Darezzo M, Castanheira L, Pereira-da-Silva G, Garcia Lima R. Effectiveness of hospital clowns for symptom management in paediatrics: systematic review of randomised and non-randomised controlled trials. *BMJ*. 2020;371:4290. doi: 10.1136/bmj.m4290
8. Brockenshire N, Newall F, Chenhall R, Shoemark H. Clowning around: Understanding the role of clown doctors at the Royal Children's Hospital Melbourne (RCH). *International Journal of Integrated Care*. 2017;18(S1):1-8.
9. Warren B. Healing laughter: the role and benefits of clown-doctors working in hospitals and healthcare. In: B. Warren, editor. *Using the Creative Arts in Therapy and Healthcare*. London & New York: Routledge; 2008. p. 213-226.
10. Safra T, Schmidt J. Educational clowning influences school climate and creates an improved, long-term dialogue between teachers and pupils. *Educlown*;2019. Available from: [https://www.educlown.com/wp-content/uploads/2019/11/educationalclowning\\_eng-2.pdf](https://www.educlown.com/wp-content/uploads/2019/11/educationalclowning_eng-2.pdf)
11. Gana-Dañobeitia A, Huegun-Burgos A, Rekalde-Rodríguez, I. Clowns as a social and educative tool for community Intervention. *Revista de Trabajo Social e intervención social*. 2019;27:159-186.
12. Butler J. *Sin miedo. Formas de resistencia a la violencia hoy*. Barcelona: Taurus; 2020.
13. Bisquerra R. *Educación emocional. Propuestas para educadores y familias*. Bilbao: Desclée de Brower; 2011.

14. Dionigi A. The relationship between burnout, personality, and emotional intelligence in clown doctors. *Humor*. 2020;33(1):157-174.
15. Urra E, Jana A, García M. Algunos aspectos esenciales del pensamiento de Jean Watson y su teoría de cuidados transpersonales. *Ciencias enfermería*. 2011;17(3):11-22.
16. Fernández-Pinto I, López-Pérez B, Márquez M. Empatía: Medidas, teorías y aplicaciones en revisión. *Anales de Psicología*. 2008;24:284-298.
17. Goodman R. The Strengths and Difficulties Questionnaire: A research note. *Journal of Child Psychology and Psychiatry*. 1997;38:581-586.
18. Gaete J, Montero-Marin J, Valenzuela D, Rojas-Barahona CA, Olivares E, Araya R. Mental health among children and adolescents: Construct validity, reliability, and parent-adolescent agreement on the 'Strengths and Difficulties Questionnaire' in Chile. *PloS one*. 2018;13(2):e0191809.
19. Ravens-Sieberer U, Bullinger M. Assessing health related quality of life in chronically ill children with the German KINDL: first psychometric and content analytical results. *Quality of Life Research*. 1998a;4(7):399-407.
20. Ravens-Sieberer U, Bullinger M. News from the KINDL-Questionnaire – A new version for adolescents. *Quality of Life Research*. 1998b;7:653.
21. Sepúlveda R, Molina T, Molina R, Martínez V, González E, Montaña R, HidalgoRasmussen C. Adaptación transcultural y validación de un instrumento de calidad de vida relacionada con la salud en adolescentes chilenos. *Revista Médica de Chile*. 2013;141(10):1283-1292.
22. Jacobson NS, Follette WC, Revenstorf D. Psychotherapy outcome research: Methods for reporting variability and evaluating clinical significance. *Behavior Therapy*. 1984;15(4):336-352.
23. Jacobson NS, Roberts LJ, Berns SB, McGlinchey JB Methods for defining and determining the clinical significance of treatment effects: description, application, and alternatives. *Journal of Consulting and Clinical Psychology*. 1999;67(3),300.
24. Jacobson N, Truax P. Clinical significance: a statistical approach to defining meaningful changes in psychotherapy research. *Journal of Consulting and Clinical Psychology*. 1991;59(1):12-19.
25. Larraguibel M, Rojas-Andrade R, Halpern M, Elena M. Impacto de la Pandemia por COVID-19 en la Salud Mental de Preescolares y Escolares en Chile. *Revista Chilena de Psiquiatría y Neurología Infanc. Adolesc*. 2021;32(1):12-21.
26. Valdebenito V, Sánchez R. Efectos del clown de hospital en la calidad de vida de personas en una Unidad de Cuidados Paliativos Pediátricos Oncológicos. *Medicina Paliativa*. 2021;28(4):230-235 doi:10.20986/medpal.2021.1246/2021
27. Karisalmi N, Mäenpää K, Kaipio J, Lahdenne P. Measuring patient experiences in a Children's hospital with a medical clowning intervention: a case-control study. *BMC Health Services Research*. 2020;20:360-372.
28. Arriaga P, Melo AS, Caires S. The Effects of Hospital Clowning on Physical and Emotional States of Paediatric Patients During Chemotherapy Treatment. *Child & Youth Care Forum*. 2020;49:365–381. doi.org/10.1007/s10566-019-09532-6
29. Perez-Sousa M, Olivares R, Escobar-Alvarez JA, Parraça JA, Gusi N. Fitness as mediator between weight status and dimensions of health-related quality



- of life. *Health and Quality of Life Outcomes*. 2018;16:155. doi.org/10.1186/s12955-018-0981-0
30. Kingsnorth S, Blain S, McKeever P. Physiological and emotional responses of disabled children to therapeutic clowns: a pilot study. *eCAM*; 2010;10(1):1-10.
  31. Kurudirek F, Arikan D. Effects of Therapeutic Clowning on Pain and Anxiety During Intrathecal Chemotherapy in Turkey. *Journal of Pediatric Nursing*. 2020;53:6-13.
  32. Newman N, Kogan S, Stavsky M, Pintov S, Lior Y. The impact of medical clowns exposure over postoperative pain and anxiety in children and caregivers: An Israeli experience. *Pediatrics Report*. 2019;11(8165):44-48.
  33. Sridharan K, Sivaramakrishnan G. Therapeutic clowns in pediatrics: a systematic review and meta-analysis of randomized controlled trials. *European Journal of Pediatrics*. 2016;175:1353-1360.
  34. Arriaga P, Pacheco C. Effects of Clown Doctors on child and caregiver anxiety at the entrance to the surgery care unit and separation from caregivers. *The International Journal of Emotional Education*. 2016;8(1):19-34.
  35. Zuna N, Turnbull A, Summers J. Family Quality of Life: Moving from measurement to application. *Journal of Policy and Practice in Intellectual Disabilities*. 2009;6(1):25-31. doi.org/10.1111/j.1741-1130.2008.00199.x
  36. Gilboa-Negari Z, Abu-Kaf S, Huss E, Hain G, Moser A. A cross-cultural perspective of medical clowning: comparison of its effectiveness in reducing pain and anxiety among hospitalized Bedouin and Jewish Israeli children. *Journal of Pain Research*. 2017;10:1545-1552.
  37. Escobar MJ, Panesso C, Franco Chalco E, Cardemil A, Grez A, del Río P, del Río JP, Vigil P, Duran-Aniotz C. Efectos de la pandemia y las medidas de confinamiento sobre la salud mental en población infantil de Chile. *Revista Psykhe*. 2022.
  38. Grellet C. La importancia del juego en los primeros años de vida. Universidad de Chile; 2016. Available from: <https://www.uchile.cl/noticias/124764/la-importancia-del-juego-en-los-primeros-anos-de-vida>
  39. Cáceres F, Granada M, Pomés M. Inclusión y juego en la infancia temprana. *Revista Latinoamericana de Educación Inclusiva*. 2018;12(1):181-199. doi.org/10.4067/S0718-73782018000100012
  40. Artigue J, Tizón J. Una revisión sobre los factores de riesgo en la infancia para la esquizofrenia y los trastornos mentales graves del adulto. *Atención Primaria*. 2014;46(7):336-356. doi:10.1016/j.aprim.2013.11.002
  41. Azevedo A, Alves F, Almeida L. The factorial structure of cognitive abilities in childhood. *European Journal of Education and Psychology*. 2016;9:38-45.
  42. Mozas C. Propuesta de Teatro Foro Clown para la participación social de jóvenes en la Biblioteca Comunitaria "Manuela Beltrán", Bogotá, Colombia. 2018; Thesis to obtain the Master degree in International Cooperation for Development, Valladolid University.