

Clinical Psychology

Methodological strategies for functional analysis and evaluation of obsessive-compulsive behavior

Paola E. de M. Almeida¹

 <https://orcid.org/0000-0001-7629-8315>

Carolina M. Ortega¹

 <https://orcid.org/0000-0002-4095-6205>

Helena D. Meletti¹

 <https://orcid.org/0000-0001-9271-1237>

João Manoel Rodrigues Neto¹

 <https://orcid.org/0000-0002-7549-9008>

Weslem M. Santos¹

 <https://orcid.org/0000-0002-9590-7101>

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¹ Pontifical Catholic University of São Paulo (PUC-SP), São Paulo, SP, Brazil.

Abstract

The study aimed to identify the controlling variables of obsessive-compulsive behaviors of an adult participant, based on three evaluation strategies. For the first one, Indirect Functional Assessment, the researchers recovered records of therapy sessions attended by the participant, in which conditions favorable to obsessive-compulsive behaviors were described. For the second one, Descriptive Functional Assessment, the researchers observed the participant's behavior during sessions in which they presented tasks previously mentioned as triggering of the problem behavior. For the third one, Brief Functional Analysis – Single Function Test, the researchers manipulated a demand condition and a control condition, aiming to examine the functional hypothesis that the problem behavior would be maintained by escape/avoidance of tasks. Although dissonant, the results allowed the researchers to discard the negative reinforcement hypothesis. The pertinence of the adoption of different evaluation strategies for clinical practice and the frailties of interventions guided only by verbal reports are discussed.

Keywords: behavioral analysis; functional analysis; obsessive-compulsive disorder (OCD); indirect behavior assessment; descriptive behavior assessment.

ESTRATÉGIAS METODOLÓGICAS PARA AVALIAÇÃO E ANÁLISE FUNCIONAL DO COMPORTAMENTO OBSESSIVO-COMPULSIVO

Resumo

O estudo teve por objetivo identificar variáveis controladoras de comportamentos obsessivo-compulsivos de um participante adulto, com base em três estratégias de avaliação. Na primeira, Avaliação Funcional Indireta, recuperaram-se registros de sessões de terapia frequentadas pelo participante, em que foram descritas condições favorecedoras dos comportamentos obsessivo-compulsivos. Na segunda, Avaliação Funcional Descritiva, observou-se o comportamento do participante em sessões nas quais se dispunham tarefas antes indicadas como desencadeantes do comportamento-problema. Na terceira, Análise Funcional Breve – Teste de Função Única, foram manipuladas condições de demanda e controle, a fim de examinar a hipótese funcional de que o comportamento-problema seria mantido por fuga/esquiva de tarefas. Embora divergentes, os resultados das avaliações permitiram descartar a hipótese de que o comportamento-alvo seria mantido pela retirada da tarefa. Discutem-se a pertinência da adoção de diferentes estratégias de avaliação

no trabalho clínico e a fragilidade de intervenções unicamente orientadas por relatos verbais.

Palavras-chave: análise do comportamento; análise funcional; transtorno obsessivo-compulsivo (TOC); avaliação funcional indireta; avaliação funcional descritiva.

ESTRATEGIAS METODOLÓGICAS PARA EVALUACIÓN Y ANÁLISIS FUNCIONAL DE LA CONDUCTA OBSESIVA-COMPULSIVA

Resumen

El estudio objetivó identificar variables controladoras de la conducta obsesiva-compulsiva de un participante adulto, basando-se en tres estrategias de evaluación. Por la primera, Evaluación Funcional Indirecta, fueran recuperados registros de sesiones de terapia frecuentadas por el participante, en que se describieron condiciones favorables de los comportamientos obsesivo-compulsivos. Por la segunda, Evaluación Funcional Descriptiva, fue observada la conducta del participante en sesiones en las cuales se disponían tareas indicadas como desencadenantes de la conducta-problema. Por la tercera, Análisis Funcional – Prueba de Función Única, fueran manipuladas condiciones de demanda e control, objetivando examinar la hipótesis funcional de que la conducta problema sería mantenida por fuga/evasión de tareas. Aunque divergentes, los resultados permitirán descartar a la hipótesis de que la conducta objetivo sería mantenida por reforzamiento negativo. Se discute la pertinencia de la adopción de diferentes estrategias de evaluación del trabajo clínico, y debilidades de intervenciones únicamente orientadas por relatos verbales.

Palabras clave: análisis del comportamiento; análisis funcional, trastorno obsesivo-compulsivo (TOC); evaluación funcional indirecta; evaluación funcional descriptiva.

1. Introduction

Behavior Analysis can be considered a psychological system that understands the human being in his interaction with the environment. Given this position, the understanding and change of individual behavior depend on the identification of the relations established with different environments, which involves the description of the conditions that precede and follow a certain response. For the identification of these conditions, different strategies have been proposed, known

as the methods of Indirect Functional Assessment, Descriptive Functional Assessment, and Functional Analysis (Hanley, 2012).

Indirect Functional Assessment involves the construction of hypotheses about the determinants of behavior based on information obtained during interviews or on the application of standardized instruments, answered by a participant or qualified informant. Descriptive Functional Assessment, on the other hand, is based on the direct observation of environmental variables present at the moment of the response of interest, without guaranteeing, however, a dependence relation between the observed events. Unlike the other methods, Functional Behavior Analysis permits not only the survey, but also the test of hypotheses about the determinants of behavior, using experimental manipulation (Hanley, 2012).

Although desirable, the usage of Functional Analysis procedures has been infrequent in searching for the determinants of behavior when compared to Indirect or Descriptive Functional Assessment methods, especially in the clinical context of Behavior Analysis (Slaton, Hanley, & Raftery, 2017). The reasons cited for the restricted use of functional analyses in this context include their complexity, besides the researcher's lack of time and difficulties to access and collect data, especially in the case of interventions planned for non-institutionalized adults (Hanley, 2012).

Although not very frequent, methods for functional analyses have also been developed for the behavior of this population, as in the studies of Wilder, Masuda, O'Connor, and Baham (2001), Britto, Rodrigues, Alvez, and Quinta (2010), and Marcon and Britto (2015), who investigated the role of bizarre vocalizations/inappropriate speech from participants diagnosed with schizophrenia based on functional analysis of multiple elements, as proposed by Iwata, Dorsey, Slifer, Bauman, and Richman (1994). The studies presented four conditions: 1. demand condition, in which the participant was exposed to daily tasks, withdrawn contingently to the emission of bizarre vocalizations; 2. condition of contingent attention, in which the therapist paid attention to the participant after the emission of bizarre verbalizations; 3. condition alone, in which the participant remained isolated, and no social consequence was provided for their behaviors; and 4. control condition, in which there was no contingent attention to bizarre vocalizations. As a result, the studies identified that bizarre vocalizations occurred more frequently in the attention condition. Challenges encountered for conduct-

ing Functional Analyses in the clinical context were cited, such as the lack of control over the difficulty of the demands imposed in the ambulatory setting (Britto et al., 2010), or the impossibility of presenting all the planned conditions, due to unforeseen changes in the housing of one of the participants (Marcon & Britto, 2015).

Situations such as these, probably encountered in outpatient work, impose the need for changes in the conduct of Functional Analysis, such as those suggested by Iwata and Dozier (2008) and Hanley (2012) to shorten the evaluation time, using procedures involving the investigation of a single functional hypothesis initially suggested by indirect strategies. The so-called single-function test would thus involve alternating manipulation of only one test and another control condition, leading to direct intervention planning in cases where the functional hypothesis was empirically confirmed (Iwata & Dozier, 2008).

In the present study, Single-Function Test was used, along with other assessment strategies, to identify the function of the behavior of a young patient treated in an outpatient clinic, who received the diagnosis of Obsessive-Compulsive Disorder (OCD).

OCD can be characterized by the observation of repetitive behaviors related to cleaning, ordering, collecting, counting, sexual or religious concerns, among others, accompanied by great emotional discomfort, with the current interpretation that compulsive behaviors have the function of avoidance from the emotional distress produced by the obsessions (American Psychiatric Association, 2012).

According to Behavior Analysis, operant and respondent learning processes would be involved in the origin and maintenance of any behavior, with the possibility to identify environmental variables related to their emission, also in the case of OCD. In the study by Vermes and Banaco (2013), some of these variables were investigated, evaluating the occurrence and duration of behaviors described as cleaning OCD of three children when confronted with aversive tasks, or with toys of high, medium or low preference, associated or not with the presence of dirt in the environment. The results showed a higher occurrence of cleaning behaviors and other indications of anxiety (e.g., nail-biting) in the presence of aversive tasks, especially when associated with dirt. It was also observed that the duration of these behaviors would have been shorter in the presence of high preference toys than in the presence of medium or low preference toys, indicating the importance of envi-

ronmental conditions in changing the probability of the responses described as OCD, probably due to engagement in competitive activities. In general, the behaviors observed by Vermes and Banaco (2013) occurred less frequently than those reported by the parents in the initial interviews, which was interpreted as a result of a greater conditioned averseness present in the natural context than that programmed in the clinical setting, an aspect discussed as a research limitation.

Other studies have also pointed to the importance of environmental variables in determining behaviors described as OCD, being identified positive reinforcement (Abreu & Hubner, 2011; Neil, Vause, Jaksics, & Feldman, 2017), negative reinforcement (Aguayo, Melero, & Lázaro, 2014), and automatic reinforcement (Rodríguez, Thompson, Schlichenmeyer, & Stocco, 2012) responsible for their maintenance.

This paper aims to contribute to the discussion about determinants of obsessive-compulsive behaviors, evaluated by strategies of Indirect Functional Assessment, Descriptive Functional Assessment and Brief Functional Analysis – Single Function Test. The convergence or divergence between the results obtained when using these different strategies is discussed, broadening the discussion about the possibilities and limits of its application in clinical practice.”

2. Method

2.1 Participant

The participant of the study was a 25-year-old single, full-time pre-college student with a high-school degree and a diagnosis of Obsessive-Compulsive Disorder (OCD). The participant stated his interest in the research after being informed that the purpose of the study was to identify conditions that favored obsessive-compulsive behaviors, and he was informed that the research procedures would require participation in an individual weekly schedule sessions (1 h), before the start of the therapeutic group he attended at the institution. During this time, study activities were carried out in front of the therapists, as the participant mentioned that this was a condition that favored obsessive-compulsive behaviors.

The data collection started after signing the Informed Consent Document, and the audio and video recording of the sessions were authorized.

The study was also submitted to the Ethics Committee for Human Research, receiving approval number 53649616.6.0000.5482.

2.2 Materials and environment

During the data collection, the following materials were used: video camera, tripod, record sheets, and study materials selected by the experimenters and/or the participant's handouts.

The record sheets were constructed based on the participant's report on conditions that accompanied the emission of obsessive-compulsive behaviors, consisting of five columns, referring to: 1. origin of the study material, whether personal or prepared by the therapists; 2. type of exercise performed, whether theoretical or calculus; 3. accuracy in the previous exercise, verified based on the participant's access to feedback; 4. accuracy in the current exercise, which would indicate the difficulty of the task; and 5. indication of the university.

All test sessions took place in the mirror room of the school-clinic, in which there was a table, three or four chairs and a couch (not used). All sessions were recorded in audio and video, except for the first one in which, due to a technical problem, only the first 12 minutes could be recorded. Two Psychology students from the institution, supervised by the researchers of the study, served as therapists.

2.3 Procedures

Phase 1: Indirect Functional Assessment: In order to gather information about the participant's obsessive-compulsive behaviors, the researchers used the records of five sessions of the psychotherapeutic group the participant attended in different years. After reading each session, the researchers selected excerpts in which the participant reported the occurrence of obsessive-compulsive behaviors, identifying antecedent and subsequent conditions that seemed to accompany the responses described as obsessions and compulsions. On the whole, five episodes of obsessive-compulsive behavior were identified and analyzed. To conduct the Indirect Functional Assessment, the participant's reports while taking part in the initial sessions of the second phase of the study were also considered, when they dealt with descriptions of conditions that usually accompanied the emission of obsessive-compulsive behaviors in the natural environment.

Phase 2: Descriptive Functional Assessment of the conditions related to obsessive-compulsive behaviors: This phase was composed of nine sessions, in which the participant was asked to perform study tasks in front of the therapists in an attempt to reproduce the situations that the participant described as triggers of his

obsessive-compulsive behaviors. This phase tried to identify if the obsessive-compulsive behaviors occurred in the face of the proposed demands and, more specifically, which characteristics of the demand accompanied the occurrence of the behaviors of interest. The presented conditions were planned based on data collected from the indirect assessment phase and varied concerning the following items:

- *Personal or researcher material:* According to the participant's report, the behaviors that characterized OCD often occurred when using his study material. Therefore, part of the exercises presented during Phase 2 was carried out in the handbooks and notebooks the participant brought himself, while other exercises were presented on separate sheets, with exercises extracted from preparatory handbooks, brought by the researchers.
- *Exercises from different disciplines:* The exercises presented during the sessions came from different disciplines, as the participant had reported a higher occurrence of behaviors described as OCD during the performance of math, chemistry and physics activities and lesser occurrence of these behaviors in the discipline of Portuguese.
- *Theoretical or calculus exercises:* According to the participant's reports, calculus exercises were accompanied by the occurrence of OCD. In order to evaluate the relationship between these events directly, theoretical and calculus exercises of the same discipline were presented throughout this stage, in order to verify if these conditions would frequently and systematically follow the occurrence of obsessive-compulsive behaviors.
- *Accuracy in the present exercise:* In order to evaluate if the difficulty of the task would alter the occurrence of obsessive-compulsive behaviors, the exercises presented to the participant during the sessions were classified as easy or difficult, based on whether these exercises were executed right or wrongly.
- *Accuracy in the previous exercise:* This condition was used to evaluate whether the feedback on the right or wrong execution of the previous exercise could influence the occurrence of obsessive-compulsive behaviors during the next exercise presented to the participant. Therefore, during the experimental sessions, the participant could have access to the feedback after performing some exercises, while in others he could not.

- *Indication of the university:* The identification of renowned universities, according to the participant's report, was a condition that frequently accompanied the occurrence of OCD. In this way, exercises with and without identification of different universities were presented, registering the production of OCD in these conditions.

Phase 3: Brief Functional Analysis – Single Function Test: After the identification of the conditions that frequently followed the occurrence of OCD, according to the data obtained in the two initial phases of the study, a functional analysis called the Single Function Test (Iwata & Dozier, 2008) was applied. The test was performed in a single experimental session (10th), in which demand and control conditions of ten minutes each were manipulated in an A-B-A-B-A reversal design, in which:

- Condition (A) with demand: involved the presentation of exercises prepared by the therapists, considered of great difficulty. The exercises were predominantly mathematical, requiring calculation activity, without indication of a university and feedback on the right or wrong execution of the previous exercise. In this condition, if the OCD response was issued, the demand presented would be withdrawn during 5s and a new activity would be presented after that period.
- Condition (B) without demand: No exercise was presented, and one of the therapists would talk to the participant about matters he was interested in while having a snack.

In order to increase discriminatory control over the conditions proposed during Phase 3, Therapist 1 directed the session in phase A, and, during the conversation period (Condition B), Therapist 2 did so – although both remained in the room throughout the session.

2.4 Data analysis

The data collected from the indirect assessment phase were extracted from the records of the sessions the participant had attended, and the antecedent and subsequent conditions to the responses described as OCD were categorized. All

sessions of Phase 2 – Descriptive Functional Assessment and Phase 3 – Single Function Test were recorded in videos and later categorized, as indicated in the Methods section.

For the analysis of the data, we defined the following class of responses as OCD: 1. align/organize the study material; 2. redo or re-read an exercise; 3. measure the exercise with a ruler; and 4. verbally describe behavioral tendencies to emit OCD response, even though the response was not emitted during the session. In this case, it was considered that if the client reported, given a certain configuration of task stimuli, he would measure it with the ruler at home (even if he did not participate during the session), he would be feeling a change in the probability of the response to that configuration of stimuli, registering the occurrence of obsessive-compulsive behavior. Only one OCD response was recorded this way during the survey.

Other behaviors the participant presented during the test sessions were also defined and categorized, which were: 1. refuse to perform the exercise, and 2. leave the exercise incomplete. These behaviors, although not directly the problem behavior of interest in the study, were frequently observed throughout the test sessions and were included in the analysis because they provided a comprehensive characterization of the participant's performance in the study context.

The refusal to perform the exercise was thus categorized whenever the participant avoided reading and/or performing an exercise, requesting to move on to the next exercise. Leaving the exercise incomplete was categorized when the participant started reading and/or performing the exercise and, in the solution process, said that he would not continue, either because he did not understand what was being asked or because he did not know the fundamental elements that would help accomplish the task.

A second observer evaluated the collected data, and inter-observer agreement was considered as the total agreement/agreement + disagreement x 100, computed for each category and the total of categories assessed. The data revealed a high agreement index of each item categorized and the total result of all items was 1. exercises (100%); 2. disciplines (98.40%); 3. indication of university (100%); 4. prepared material (100%); 5. personal material (100%); 6. calculation (98.40%); 7. theory (100%); 8. access to the template (100%); 9. right (94%); 10. wrong (94%); 11. OCD (98.40%); 12. escape (100%); 13. avoidance

(100%). The result of all the items obtained an interobserver agreement percentage of 98%.

3. Results

The data analyzed in this section refer to the conditions that frequently accompanied the occurrence of obsessive-compulsive behaviors, identified based on the different assessment methods.

Initially, the data obtained in the Indirect Functional Assessment (Phase 1) permitted the identification of the response topographies that composed the class of behaviors characterized as OCD, as mentioned before: align the material; redo or re-read the exercise repeatedly; measure the exercise with the ruler, and copy out the content. These topographies were always associated with the study context, according to the analysis of the episodes described during the therapeutic sessions evaluated. An analysis of the participant's comments during Phase 2 - Descriptive Functional Assessment also allowed us to identify that such responses would more likely happen when the study material was personal than when prepared by the experimenter. The analysis of the conditions described as subsequent to the emission of OCD responses indicated that such responses would be followed by postponement or withdrawal from the study tasks, which seemed to suggest that they could be negatively enhanced, with a probable demand escape/avoidance function.

During Phase 2, 62 exercises from different disciplines were presented to the participant, observing the occurrence of obsessive-compulsive behaviors during the performance of only seven exercises. The performance of the participant, with 24 right and 38 wrong answers, indicated that the tasks presented had varying degrees of difficulty. The greatest number of errors occurred in math exercises (16 out of 25 exercises), followed by physics (10 out of 18 exercises) and chemistry (10 out of 15 exercises). Two literature exercises were also presented, one being executed wrongly and the other one correctly; and two other exercises, one in biology and another one in Portuguese, both of which were executed successfully.

In Figure 3.1, the results of the conditional probability calculation of the responses defined as OCD can be observed concerning the conditions for its occurrence during Phase 2. For each condition, the proportion of times its presence was associated with the occurrence of OCD was calculated, the calculation is performed as follows: a number of times the condition followed the occurrence of OCD / total

number of times the condition was present throughout the experimental sessions. Thus, the conditional probability of OCD, given the conditions manipulated, would be greater the closer to 1.0 was the value found.

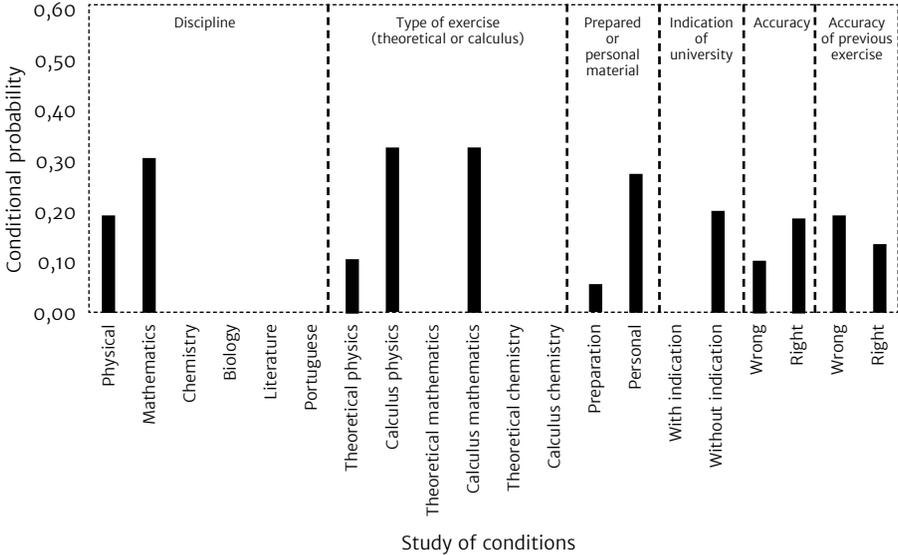


Figure 3.1. Study conditions to monitor the occurrence of OCD: discipline; type of exercise; origin of material; indication or not of university; accuracy of current exercise; accuracy of previous exercise.

The visual inspection of Figure 3.1 shows that the conditional probability data show that there was no strong correlation between the conditions assessed and the emission of OCD, even in the face of conditions initially reported by the participant as triggers of these behaviors. The conditional probability remained below the value of 0.35 for all conditions evaluated, indicating a weak correlation between events.

When considering the coefficients found, however, it is noted that mathematics and physics, calculation tasks and the use of personal material were more often related to the emission of obsessive-compulsive behavior, which corroborates with the indirect assessment data.

An analysis of Figure 3.1 reveals, on the other hand, that the occurrence of OCD seemed to be independent from the imposition of difficult demands, there

being no appreciable difference in OCD emission among exercises that were solved more or less accurately. As the indirect functional assessment results seemed to indicate that obsessive-compulsive behaviors could have the function of task escape/avoidance, the emission of these behaviors would be expected particularly before difficult tasks, which did not occur. Likewise, the occurrence of errors in the previous year did not result in a higher probability of OCD in the subsequent attempts.

A broad characterization of the participant's repertoire revealed, in turn, that other responses (quitting or refusing to perform the task) were frequent during the exercise. Then, the conditional probability of these responses was calculated in the presence or absence of different conditions.

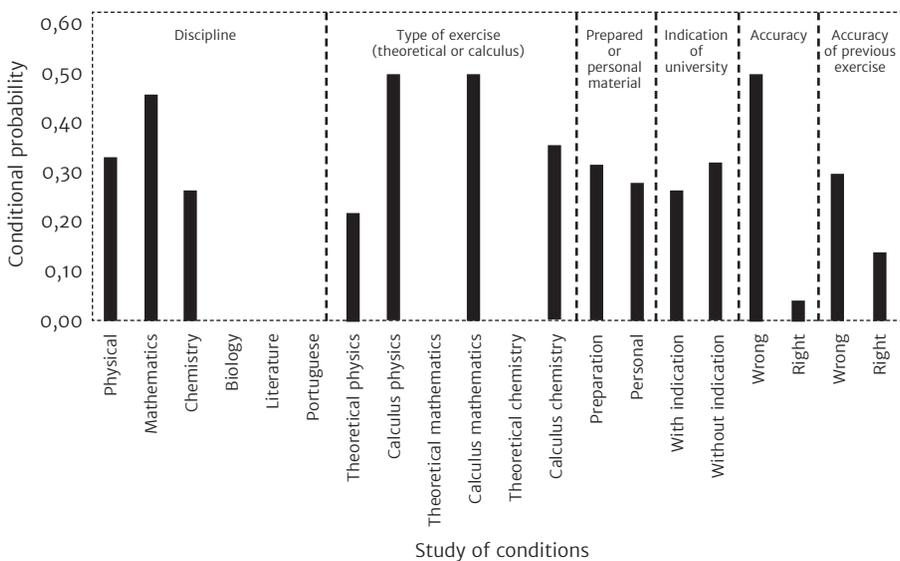


Figure 3.2. Study conditions to monitor the occurrence of refusal or withdrawal responses in task execution: discipline; type of exercise; origin of material; indication of university; accuracy of current exercise; accuracy of previous exercise.

The data collected in Figure 3.2 allow us to identify that, as in the case of obsessive-compulsive behavior, the mathematics and physics subjects were correlated with the greater probability of issuing answers of withdrawal or refusal to do exercises. In these answers, it is also noted that the discipline of chemistry was

associated with a greater probability of occurrence, especially in the case of calculus tasks, in any of the three disciplines.

Contrary to what was observed concerning OCD, there was no appreciable difference in the conditional probability of giving up or refusing to perform exercises involving prepared or personal material, or with or without the indication of the university. On the other hand, the task difficulty seemed strongly correlated with the greater probability of giving up or refusing to perform the activity, which suggests the presence of an alternative repertoire to the obsessive-compulsive behavior that can guarantee the escape/avoidance of demands. In the case of this repertoire, the calculation of conditional probability indicates slightly stronger correlations between the presence of the conditions analyzed and the occurrence of withdrawal or refusal responses in performing exercises, but without exceeding 0.5.

Overall, data seem to contradict the hypothesis that the participant's obsessive-compulsive behaviors were being maintained due to the escape/avoidance of study tasks. At least in the conditions present, the existence of an alternative repertoire was observed that was capable of promoting the suspension of those demands. Unlike the results of Phase 1, the study context does not appear to indiscriminately trigger obsessive-compulsive responses, although it seems to increase the likelihood of other responses with a probable escape/avoidance function. This finding is also confirmed by the data obtained during Phase 3 - Brief Functional Analysis.

The data represented in Figure 3.3 illustrate the participant's performance in the demand and control conditions during the tenth experimental session.

As one can observe, none of the experimental conditions presented in Phase 3 was accompanied by the occurrence of OCD, regardless of the imposition or non-imposition of demands, which made it impossible for the experimenters to apply the consequence programmed, which would be the withdrawal of the task for 5s after the emission of OCD. The fact that 12 of the 14 activities presented were accompanied by wrong execution, refusal or incomplete execution of the exercises, shows that the selected demands were of great difficulty, which could favor the participant's escape/avoidance responses. This withdrawal was not, however, guaranteed by OCD responses, but by withdrawal or refusal behaviors, which seem to have been strengthened during Phase 3, as shown in Figure 3.3.

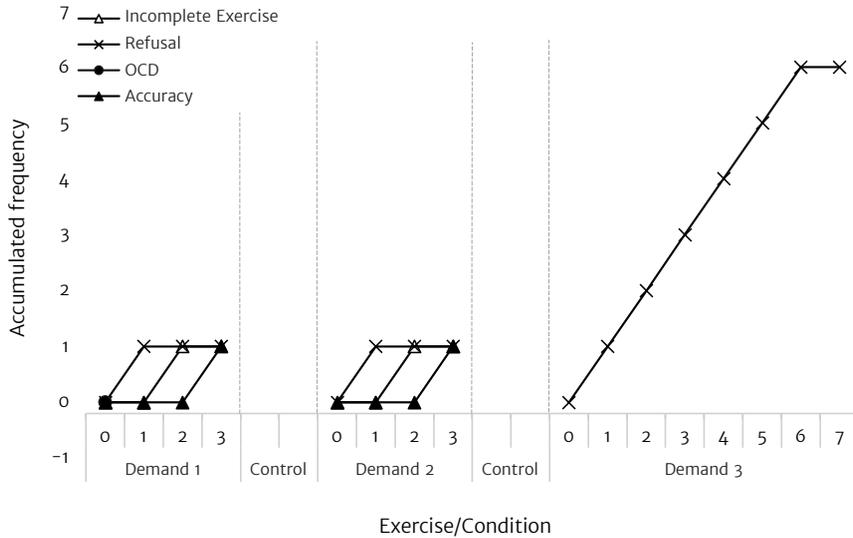


Figure 3.3. Accumulated frequency of OCD responses, accuracy, and incomplete execution of exercises in each test condition of Phase 3 – Brief Functional Analysis – Single Function Test.

It is noted, therefore, that the imposition of demands, their difficulty or specific task settings (exact disciplines, calculation requirement) were not responsible for the occurrence of OCD during the study tasks, different from what the participant initially reported during Phase 1 and corresponding to the results that indicated a weak correlation between events during Phase 2. In this case, new experimental tests should be conducted in order to evaluate different variables controlling for the participant's obsessive-compulsive behaviors.

4. Discussion

The provision of behavior-analytical services requires the identification of determinants of behavioral problems for the elaboration of effective treatments. In this study, different assessment strategies were applied to identify the variables responsible for a participant's obsessive-compulsive behaviors, highlighting the convergence or divergence between the results produced based on these assessments.

When compared, the evaluation methods produced divergent results, contrary to the hypothesis initially formulated based on the participant's report, which indicated that the study context would trigger obsessive-compulsive behaviors, reinforced by the suspension of tasks. These data seems relevant since much of the clinical practice rests on verbal report for the construction of functional hypotheses when no measures of observation or direct manipulation of behavior are present (Gadaire, Kelley, & DeRosa, 2010). The results highlight the challenges for the identification of functional relations in clinical practice and may contribute to the examination of an evaluation methodology that is hardly used in this context.

Although the data suggest that the imposition of study demands would not have had a motivating role for OCD and that other variables responsible for its maintenance should be investigated, some considerations should be presented.

In relation to the task averseness, it can be assumed that, unlike Britto et al. (2010), the Descriptive Assessment stage permitted the selection of tasks with a high degree of difficulty during the Functional Analysis stage, which did not guarantee, however, the emission of obsessive-compulsive behaviors. Other escape/avoidance behaviors, described as giving up or refusing to perform tasks, were observed though, evidencing the averseness of the tasks presented.

Although aversive, it would still be possible to speculate that the demands presented in this study differed from those required in the natural environment, which could reduce the probability of OCD, a result close to that found by Vermes and Banaco (2013).

Under planned conditions, the question could also be raised as to whether the presence of the therapists as task mediators could have evoked the occurrence of other responses functionally equivalent to OCD, which would have produced, in the test context, task withdrawal. In the natural environment, such responses might not have the same consequences, and a discriminative control was possibly established on the class of negatively reinforced responses in different contexts.

In view of these considerations, future research could organize test conditions to present tasks to the participants, so that they can perform them alone, in order to minimize the possible evocative effect of the experimenters for verbal responses functionally equivalent to OCD (asking not to execute the exercise, for example), which could compete with its emission. In this study, the absence of such control may have impaired the occurrence of OCD and the presentation of the

consequences programmed by the experimenter (withdrawal of tasks for 5s contingent to the emission of obsessive-compulsive behaviors), making the desired analysis difficult. This kind of care indicates the need for refinement of the Functional Analysis strategies to be used in behavior assessment when focused on individuals with complex repertoires (Gadaire et al., 2010).

5. Conclusion

According to Slaton et al. (2017), the functional analysis data mostly derive from applications aimed at individuals with a developmental disorder, and adaptations should be tested that can guarantee their efficiency and their general generality to new environments and populations.

In this study, the Single Function Test suggested to shorten the time for conducting functional analyses seems to have revealed that it is possible to discard, in a single session, the hypothesis suggested based on the data collected through an indirect functional assessment. Thus, this method could corroborate data produced through the descriptive functional assessment, achieving its objectives.

One limitation in the use of the Single Function Test should be considered, given that its application can sometimes only permit the discarding of functional hypotheses initially raised, without identifying a specific source of reinforcement responsible for the maintenance of the behaviors of interest. In this sense, the use of the Single-Function Test can be contraindicated, at least in cases where the function evaluated has been suggested based on the report of a single informant (in this case, the participant himself) and without the support of resources that could enhance the reporting accuracy, such as the use of standardized or self-monitoring instruments.

Future research may contribute to the promotion of a specific methodology to identify contingencies that control problematic behaviors observed in clinical practice, permitting to break with the indiscriminate use of indirect assessments as the only guiding principles of analytic-behavioral interventions in this context.

References

Abreu, P. R., & Hübner, M. M. C. (2011). Efeitos de instruções sobre respostas de checagem. *Psicologia: Teoria e Pesquisa*, 27(3), 301–307. doi:10.1590/S0102-37722011000300005

- Aguayo, L. V., Melero, F. H., & Lázaro, A. G. (2014). An experimental analysis of obsessive-compulsive checking as avoidance behaviour. *Psicothema*, 26(1), 10–16. doi:10.7334/psicothema2013.11
- American Psychiatric Association (2013). *Diagnostic and statistical manual of mental disorders – DSM-5*. Washington: American Psychiatric Association.
- Britto, I. A., Rodrigues, I. S., Alves, S. L., & Quinta, T. L. S. S. (2010). Análise funcional de comportamentos verbais inapropriados de um esquizofrênico. *Psicologia: Teoria e Pesquisa*, 26(1), 139–144. doi:10.1590/S0102-37722010000100016
- Gadaire, D. M., Kelley, M. E., & DeRosa, N. M. (2010). Research needed for focusing on additional generality of applied behavior analysis. *The Behavior Analyst Today*, 11(1), 49–58. doi:10.1037/h0100688
- Hanley, G. P. (2012). Functional assessment of problem behavior: Dispelling myths, overcoming implementation obstacles, and developing new lore. *Behavior Analysis in Practice*, 5(1), 54–72. doi:10.1007/BF03391818
- Iwata, B. A., Dorsey, M. F., Slifer, K. J., Bauman, K. E., & Richman, G. S. (1994). Toward a functional analysis of self-injury. *Journal of Applied Behavior Analysis*, 27(2), 197–209. doi:10.1901/jaba.1994.27-197
- Iwata, B. A., & Dozier, C. L. (2008). Clinical application of functional analysis methodology. *Behavior Analysis in Practice*, 1(1), 3–9. doi:10.1007/BF03391714
- Marcon, R. M., & Britto, I. A. G. de S. (2015). O estudo do comportamento psicótico: Contribuições analítico-comportamentais. *Revista Brasileira de Terapia Comportamental e Cognitiva*, 17(1), 23–34. doi:10.31505/rbtcc.v17i1.733
- Neil, N., Vause, T., Jaksic, H., & Feldman, M. (2017). Effects of group functional behavior-based cognitive-behavioral therapy for obsessive-compulsive behavior in a youth with autism spectrum disorder. *Child & Family Behavior Therapy*, 39(3), 179–190. doi:10.1080/07317107.2017.1338448
- Rodriguez, N. M., Thompson R. H., Schlichenmeyer K., & Stocco C. S. (2012). Functional analysis and treatment of arranging and ordering by individuals with an autism spectrum disorder. *Journal of Applied Behavior Analysis*, 45(1), 1–22. doi:10.1901/jaba.2012.45-1
- Slaton, J. D., Hanley, G. P., & Raftery, K. J. (2017). Interview-informed functional analyses: A comparison of synthesized and isolated components. *Journal of Applied Behavior Analysis*, 50(2), 252–277. doi:10.1002/jaba.384

Vermes, J. S., & Banaco, R. A. (2013). The study of some functional relations involved in the obsessive-compulsive behaviors. *Revista Brasileira de Terapia Comportamental e Cognitiva*, 15(2), 18–34. doi:10.31505/rbtcc.v15i2.600

Wilder, D. A., Masuda, A., O'Connor, C., & Baham, M. (2001). Brief functional analysis and treatment of bizarre vocalizations in an adult with schizophrenia. *Journal of Applied Behavior Analysis*, 34(1), 65–68. doi:10.1901/jaba.2001.34-65

Authors notes

Paola E. de M. Almeida, Experimental Psychology Program, Pontifical Catholic University of São Paulo (PUC-SP); **Carolina M. Ortega**, Experimental Psychology Program, Pontifical Catholic University of São Paulo (PUC-SP); **Helena D. Meletti**, Experimental Psychology Program, Pontifical Catholic University of São Paulo (PUC-SP); **João Manoel Rodrigues Neto**, Experimental Psychology Program, Pontifical Catholic University of São Paulo (PUC-SP); **Weslem M. Santos**, Experimental Psychology Program, Pontifical Catholic University of São Paulo (PUC-SP).

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Correspondence concerning this article should be addressed to Paola Esposito de Moraes Almeida, Rua Monte Alegre, 984, Perdizes, São Paulo, SP, Brazil. CEP 05014-901.

E-mail: pealmeida@pucsp.br