Development of a WHO Child Care Facility Schedule (CCFS): a pilot collaborative study


This paper describes the research conducted by a WHO collaborative study group for the development of a questionnaire method for the assessment of quality in child-care settings. The results of an inter-rater reliability study undertaken in Greece and Nigeria suggest that the Child Care Facility Schedule (CCFS), composed of 80 items, offers a satisfactory system of rating, especially after modifications were made to refine certain items, alter the scoring system so as to grasp nuances, and clarify the instructions in the users’ manual, including revisions in the interviewing technique. A validity study to confirm the usefulness of this method is being carried out in Athens.

Introduction

The rapid socioeconomic and cultural changes in recent decades have in many countries led to changes in family structure, with a decrease in traditional community life and increase in the number of working mothers. As a result, more day nurseries, child-minding centres and other related services have been created for preschool children while their parents are away at work.

Child-minding was the initial aim of day-care services. Yet, the increasing understanding of the preschool age potential has led to the notion of making use of the time children are together for further enhancement of their cognitive, emotional and social development. Both WHO and UNESCO have prepared various papers on this subject: the WHO emphasis has been on the introduction of physical and mental health into day care, and UNESCO has concentrated more on early childhood education.

The need to assess quality child-care

In the early days and years of the existence of the various types of day-care programmes, most countries paid little attention to them. But gradually “standards” and “regulations” were written and put into effect which represented a rough consensus of what appeared to be appropriate for young children and was still within the realm of economic practicability. Most standards, however, stopped far short of what professionals in mental health would consider as representative of high quality. Rather they expressed a baseline below which no programme should be allowed to operate. Furthermore, in most countries relatively little attention was paid to how far child care actually corresponded to those standards of quality.

However, the booming development of day-care services gave rise to several concerns about their social and emotional consequences. A major concern relates to the daily separation of very young children from their parents, as well as the possible lack of stability and continuity and resulting insecurity and anxiety in these children (1–4, 7, 10, 13). A further issue focuses on what constitutes quality day-care. Certain aspects of care, which were considered to contribute to optimal quality, have been defined and examined further (e.g., stability of a caregiving milieu, small size of the group, sensitized staff, communication between care providers and parents, open versus closed programmes, etc.) (5, 9, 12, 14–16, 18).

Such concerns over quality day-care have generated the development of certain assessment tools. Prescott and her colleagues (17) created the Day Care Environmental Inventory for the USA, which mainly focuses on certain aspects of the psychosocial environment in terms of the child’s behaviour and
emphasizes the assessment of physical space. A later attempt was the Early Childhood Environment Rating scale by Harms and Clifford (8), also for the USA, which gives an overall picture of the surroundings that have been created for the children. The scale includes ratings of the use of space, materials and experiences to enhance children's development, given the daily schedule as well as supervision.

More recently, efforts have been made to assess quality in other countries. In Malaysia an instrument was developed covering seven areas for rating, and a seven-point scale was used for each of these. The areas covered were physical facilities, environment and sanitation, daily planned activities, staff:child ratio, education and training of staff, staff’s knowledge of health and child care, principal’s attitude to discipline, and child placation (II). A simple set of questions and criteria have also been developed for use in Latin America to assist parents to select day-care centres for their children (6).

This work on developing criteria for quality assurance of care for a variety of groups represents one aspect of WHO's Mental Health Programme. The overall aim of these criteria is to ensure that both the physical and the psychosocial well-being of those being served are catered for.

Methods and results

Pilot study

Item selection. The WHO Child Care Facility Schedule (CCFS) was developed to provide a procedure for assessing quality in child-care settings for a broad range of countries. Preliminary research was carried out under the auspices of WHO (Division of Mental Health, Geneva), the pilot study being performed in Greece, Nigeria and the Philippines.

A starting point for work on the schedule was a careful review of existing criteria, particularly those developed by the U.S. National Association for the Education of Young Children for accrediting centres in the USA. Many of these criteria were recast into simple declarative statements reflecting conditions that could easily be observed on a visit to a centre or else calling for non-sensitive information that could be secured through a brief interview.

By consultation with colleagues from the three pilot centres, a draft 80-item schedule covering the important areas of day-care operation was developed (see Annex). Emphasis was placed on the relevance to each country involved and on ease of scoring. Each of the 80 items was to be rated on a three-point scale (0 = conditions do not exist in this programme; 1 = questionable that conditions exist in the programme; 2 = conditions clearly exist in the programme).

The results of this round of information-sharing confirmed what many who work with young children already knew: there is a great similarity of opinion from country to country as to what represents a quality environment for young children in day care.

The first draft of the schedule was tried out in a number of day-care centres in metropolitan areas of each country (Athens, 20 centres; Manila, 15 centres; and Ibadan, 91 centres). In Manila and Athens a small number of centres was selected representing different levels of quality, whereas in Ibadan most centres from a specified area were included.

Pilot study results. The schedule was found to be relevant in each setting and was easy to apply. It had been intended that the final version of the CCFS would be much shorter than the original 80-items version. However, it was found that very few of the items were redundant and most of them were retained although many were rewritten to reduce ambiguity and a few were combined. Also the number of categories into which the items had been grouped was reduced and some of the categories were renamed. The result of this process was the creation of a 74-item schedule covering seven important areas that define quality child care. These areas are: physical environment (10 items), health and safety (11 items), nutrition and food services (4 items), administration (22 items), staff family interaction (11 items), observable child behaviour (6 items), and curriculum (10 items). This was made available as a WHO document together with a simple user's manual. b,c

The results of the Greek pilot study have been reported separately (19).

Reliability study

Following the pilot study an inter-rater reliability study was undertaken in both Athens and Ibadan, to check the consistency of ratings by different observers on different occasions, while remaining blind to each other's ratings. The time interval between ratings ranged from six to ten days in the Greek study, and one to four weeks in the Nigerian study.

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c Child Care Facility Schedule—draft for pilot testing. Unpublished WHO document MNH/PRO/86.2(B), 1985.
The Greek study. Prior to the main study, visits were made for training purposes to five day-care centres by three interviewers simultaneously. On each occasion, one of them interviewed the person in charge of the centre, while the other two observed and recorded their impressions or comments on the manner of administering the questions, scored the quality of the centre on the check list, and then discussed their ratings. Two interviewers then separately visited 30 day-care centres. As the pilot study showed differences between four different types of centres in Greece (i.e., state operated, municipally operated, voluntary non-profit, and private), all four types were included in the sample. Reliability ranged from 0.831 for the health and safety category to 0.998 for the nutrition and food service category (19).

Nigerian study. In Ibadan the same training procedure as described in the Greek study was adopted. For the reliability study proper, the sample consisted of 39 day-care centres. Overall, reliability was found to be very high ($r = 0.94$).

Item analysis

The data were analysed to obtain the percentage agreement between raters using a variety of parameters:

(a) In the first instance, agreement was looked for as to whether an item was rated as present for a centre (score 1 or 2) or absent (score 0). For the 74 items rated in 30 centres in Athens, disagreement occurred for only 41 ratings (2%). For these 74 items rated in 39 centres in Ibadan, there was disagreement in 172 cases (6%). (For a few items in a small number of centres, the ratings were not made by one or both raters and these were excluded from the analysis.) When each item was considered individually, good agreement was seen in all except one of them.

In Athens, disagreement between the raters for any item never occurred in more than three out of the 30 centres. In Ibadan the range was greater, although even then, disagreement between raters only occurred in more than five of the 39 centres for one item. This one item (with 14 disagreements) concerned staff members being provided space and time to be away from children at appropriate times of the day. This level of disagreement presumably reflects a different understanding of the feature by the two raters which was not resolved.

(b) When an item was rated as present for any centre by both raters, further analysis was carried out to see whether there was agreement between the rates with regard to scoring it as a 1 or a 2. This can obviously be a fine distinction, yet in Athens there were less than two disagreements per item, on average, and for only two items did this disagreement exceed 15%. In Ibadan the number of disagreements as between a rating of 1 or 2 was, on average, less than 6 per item, representing about 18% of positive ratings.

(c) In a few instances, one rater scored an item as absent and the other scored it with a 2. This only occurred on five occasions in Athens (0.02%), but did occur in 2% of possible occasions in Ibadan. Even so, this latter is a very low figure and may represent coding errors, or a change in information given to the interviewers by the informant on the two different occasions.

(d) The ratings were examined to see if there was a tendency to overuse the midpoint in rating. For no item in Ibadan was the midpoint used for more than 50% of centres, but in Athens the midpoint was used for more than 50% of ratings for 5 out of the 74 items.

(e) The ratings were also examined to see whether, for any item, most of them were zero or most were 2. An item might be of very little use if it is rated as not present in all centres, although this could give a high level of reliability. Similarly an item could be rated as maximally present in all centres with the same effect. In fact only one item, concerning a compulsory medical examination of staff was scored 0 in more than 85% of day-care centres in both countries. However, ratings of 2 were given by both raters in more than 85% of centres, for 13 items in Athens and for 3 items in Ibadan. No particular pattern for this was apparent and it is presumed that the standards laid down are relatively easily fulfilled.

(f) A number of items were scored as not applicable. In Athens, 8 items were marked as not applicable for some centres. At Ibadan, 12 items were reported as being inapplicable in some centres. These non-applicable items may well reflect local circumstances, to which day-care centres must respond, and the institutional idiosyncrasies of particular centres. For example, it may be a local practice that children go home for meals and are not fed at the centre. Moreover, some centres may cater only for persons in selected age groups who may not require certain facilities.

Discussion and conclusions

The following observations and suggestions emerged from the item analysis and from the team’s experience in administering the CCFS in Greece and Nigeria.
With respect to the rating system, the fact that many items were rated with 1 (at least in Athens) shows that the 3-point scoring system may be rather crude and may not capture the nuance in the quality of care. We therefore suggest changing to a 4-point scale (i.e., 3 = conditions fully existing in the programme, 2 = conditions adequately existing in the programme, 1 = conditions partly existing in the programme, and 0 = conditions not existing in the programme).

The interviewers felt that difficulties in evaluating certain items accurately were due to the effect of social desirability rather than the items’ lack of clarity. These items touch upon sensitive issues of the centres’ operation and the directors may feel unwilling to reveal any weakness. We believe that this weakness could to a great extent be overcome with, on the one hand, better training of interviewers in the skills of eliciting information, and on the other, with simultaneous discussions of sensitive issues with other staff members. In case of discordance between the different answers we suggest further probing so that the interviewer can better decide how to score.

Certain items address two conditions, e.g., “All rooms are well-lighted and ventilated”; which may make scoring difficult. There is a tendency to score the mid-point where one condition is present and the other is absent. We have suggested that all such items be broken down into two, so that each addresses only one condition. Thus the total number of items in the revised scale increased from 74 to 80 (see Annex). Certain items were also rephrased, taking into account the existing conditions in different centres and cultures, in order to facilitate the rating.

The evaluation and scoring of items may be particularly difficult, concerning the pedagogical methods applied at the day-care centres and, more generally, how the children are expected to behave. This problem can be minimized with good interviewer training and by giving adequate time for direct observations.

Modifications and additions have been made to the manual’s coding instructions on the basis of the reliability study’s findings, taking into consideration the great variability and local practices existing not only in the different countries but within the same country as well. Copies of the manual are available, on request, from the Division of Mental Health, World Health Organization, 1211 Geneva 27, Switzerland. We believe that the CCFS is now a useful tool for the evaluation of qualitative criteria of day-care operation and that, in general, the concepts used with the suggested modifications both in the questionnaire and in the manual are clearly understood by those using it. A validity study is considered necessary and the Athens research team is now in the process of completing it.

Two suggestions regarding further use of the schedule are: (1) with appropriate modifications the CCFS could be used in assessing other facilities for children, such as special schools, day-hospitals or in-patient units; (2) a centre’s personnel can also benefit from the use of the CCFS for self-evaluation, which provides a structure for setting goals for improvement in their work.

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Résumé

Mise au point d’un barème OMS des services de soins infantiles: une étude pilote conjointe

Le travail préliminaire d’un groupe réuni par l’OMS a permis de mettre au point un barème des services de soins infantiles pour l’évaluation de la qualité des garderies d’enfants. Un avant-projet de barème a été testé en Grèce, au Nigéria et aux Philippines, puis des études distinctes de fiabilité ont été effectuées par deux évaluateurs qui ont visité 30 garderies en Grèce (Athènes) et 39 au Nigéria (Ibadan). Le barème, composé de 80 éléments, est accompagné d’un glossaire descriptif de chaque élément qui en facilite la notation. Les résultats ont montré que le barème était fiable, mais des modifications ont été apportées pour en améliorer l’utilisation.

Bien que la valeur de ce barème soit d’ores et déjà évidente, on pense qu’il est important d’entreprendre d’autres études détaillées de validité. Moyennant quelques modifications appropriées, le barème pourrait servir à évaluer d’autres services infantiles. Une liste des éléments du barème est donnée en annexe. Cette liste, ainsi que les descriptions du glossaire pour chaque élément, sont disponibles en anglais et en français, sur demande, auprès de la Division de la Santé mentale, Organisation mondiale de la Santé, 1211 Genève 27, Suisse.
References


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Annex

Items in the CCFS

I. Physical environment

1. The indoor environment is spacious enough for the number of children present.

2. The indoor environment is attractive and pleasant.

3. The sounds of the centre are generally moderate and pleasant: children laughing and talking happily, and adults’ voices conveying positive feelings, with neither shouting nor a tense quiet.

4. Sufficient and appropriate materials and equipment are available for use by the children.

5. Adequate space is provided for children to store their personal belongings or “take-home” products.

6. Areas are available in which children can be somewhat alone occasionally, while still being within eye range of supervising adults.

7. The indoor area is safe.

8. The outdoor area provides space and opportunity for vigorous activities.

9. A separate area for sleeping is provided, spacious enough for the number of children who use it.

10. The centre looks clean and well-cared for, especially in areas like the kitchen and the bathroom.

11. Toilets, soap, and water (for drinking and washing) are accessible to the children.

12. All rooms are well-lighted.

13. All rooms are well-ventilated.

II. Health and safety


15. Annual physical examinations are required of staff.

16. Written health records are maintained for all children.

17. Instructions for handling medical emergencies are maintained for all children.

18. The centre assumes responsibility for safe arrival and departure of all children.

19. Children are carefully supervised, with at least two adults on the premises at all times.

20. Staff are attentive to the health and development of each child and, if necessary, alert the parents to areas for professional help.

21. All caregiving staff members have been trained in first aid.

22. Staff follow the everyday hygienic principles in looking after the children (e.g., washing their
hands with soap and water after all toilet activities and before feeding the children)
23. Either personal or disposable towels are provided for the children and staff.
24. All dangerous chemicals such as medicines or cleaning products are stored out of the children's reach.
25. A first-aid kit is available on the premises.
26. A fire extinguisher is available on the premises and all staff members know how to use it.

III. Nutrition and food services
27. Meals and/or snacks are served that meet the children's recommended nutritional requirements.
28. Meal times are used by staff to promote good nutrition.
29. Whether food is prepared on the premises or elsewhere, local standards for serving food are complied with.
30. Eating utensils are properly washed and stored.

IV. Administration
31. At least annually, staff conduct a self-study to identify strengths and weaknesses of the programme and to specify 3 or 5 programme goals for the year.
32. The centre provides a written statement on the policies and procedures including programme schedules, fees, illness, holidays, etc.
33. The centre provides information about programme philosophy, either orally or through a written statement.
34. The centre has written policies which assure benefits for personnel (salary, vacation, sick leave, hospitalization, etc.) comparable to those available for workers in other service occupations.
35. At least 3/4 of the caregiving staff are fulltime employees.
36. At least half of the caregiving staff have been employed fulltime in the centre for a minimum of 6 months.
37. Relevant records of the history and operation of the programme are kept (children enrolled, attendance, staff work histories, board minutes, etc.)
38. Fiscal records are kept and audited externally.
39. The centre's director is familiar with and uses available community resources, including health and social services and other educational programmes.
40. Meetings are held regularly during which staff discuss individual children, programme plans, centre operations, salaries, and work conditions.
41. Staff members are provided with space where they can be away from children at appropriate periods during the day.
42. Regardless of the caregiver:child ratio, the number of children who are together for most of the day (group size) for infants up to 18 months of age is not more than 12.
43. Regardless of the group size, the caregiver:child ratio for infants up to 18 months of age should not exceed 1:4.
44. Regardless of the caregiver:child ratio, the group size for children aged 18–36 months is no larger than 18.
45. Regardless of the group size, the caregiver:child ratio for children aged 18–36 months should not exceed 1:9.
46. Regardless of the caregiver:child ratio, the group size for children aged 3–6 years should not exceed 24.
47. Regardless of the group size, the caregiver:child ratio for children aged 3–6 years should not exceed 1:15.
48. Caregiving staff have been trained in child development or early childhood education.
49. The programme's director/supervisor has been trained in child development or early childhood education.
50. The programme's director/supervisor has received training in management techniques.
51. The centre provides regular training opportunities for staff to improve their skills in working with children and families and requires staff to participate.
52. At least once a year the director/supervisor meets individually with all staff members to discuss with them the quality of their work.
53. Staff, other professionals, and parents meet formally to evaluate the extent to which the programme meets the needs of both children and parents.

V. Staff–family interaction
54. A process for introducing the centre's programme to parents and children is followed.
55. Parents and other family members are encouraged to be involved in the programme in various ways, and there are no rules prohibiting their unannounced visits.
56. At least once a year an appropriate staff member individually discusses each child's progress with the parent(s).
57. Parents are kept informed about the centre's programme through regular newsletters, announcements, notes, conversations, etc.
58. Provision is made for regular parent–staff interaction at the time of the children's arrival or departure.

**VI. Staff–children interaction**

59. Staff encourage children to share experiences and feelings and are responsive to the children's needs.
60. Staff speak frequently to the children, always in a friendly, positive and courteous manner.
61. Staff respect the cultural backgrounds of the children and adapt the learning situation to preserve their heritage and acquaint other children with the cultural legacy of all members of the group.
62. Staff encourage a degree of independence in children compatible with their developmental maturity and the expectations of their culture.
63. Staff use positive techniques of guidance, such as positive reinforcement and encouragement.
64. Staff respect the child's right to choose not to participate in group activities occasionally.

**VII. Observable child behaviour**

65. Children appear to be comfortable, relaxed, happy and involved in their activities.
66. Children respect the needs, feelings, and property of others (e.g., take turns, share toys).
67. Children respond appropriately to the caregivers requests.
68. During free time, the children are actively involved with materials provided by the centre and with one another.
69. Most of the time the children are friendly to staff, to one another, and to visitors.
70. Children do not become disorganized or unruly when changing from one activity to another.

**VIII. Curriculum**

71. The staff plan realistic curriculum goals for the children based on continuing assessment of individual needs and interests.
72. The daily schedule is planned to provide a variety of activities, including those that are: indoor/outdoor, quiet/active, individual/small group/large group.
73. Staff members provide developmentally appropriate learning opportunities for the children.
74. Teaching/learning activities are chosen which foster positive self-concepts and social skills in the children.
75. Teaching/learning activities encourage language development and help children improve their ability to think, reason, question and experiment.
76. Teaching/learning activities encourage creative expression and appreciation of the arts.
77. Teaching/learning activities enhance physical development and skills.
78. Teaching/learning activities encourage good health habits (nutrition, hand washing, teeth brushing).
79. Some time is allowed in the daily programme for children to choose their own activities, and materials are provided for such periods.
80. Simple house-keeping tasks (table setting, clearing up, etc.) are incorporated into the programme as a means of furthering the children's self-help and social skills.