Management of Children with Special Needs

Manual for Primary Health Care

Workers in Sri Lanka

Purpose of the manual

This manual is supposed to provide the technical information necessary for the training of primary care medical officers who will be involved in providing care for children with special needs.

The manual is considred as both a reference material and a training guide. It is organized in to 3 modules. The manual is designed to be a self guided instrument and to be followed with the guidance of facilitators. A number of participatory training techniques are integrated in to the special need training programme. These include; self reading exercises, group discussions, plenary presentations, video based training, and clinical demonstrations. Hence the manual includes both the training instructions and technical materials pertaining to subjects.

Module one is on normal devleopement and special need condtions.Module two focuses Autism and other pervasive developmental disorders. Module three focuses on the behavioral and emotional disorders in childhood and adolescent. Other conditions (learning disorders that include specific developmental disorders of language, speech and scholastic skills and cerebral palsy) will be included in a subsequent manual. The section of appendix includes supporting materials such as screening tools etc….

This manual is one of the many IEC materials used in the special need tranning programme.

MODULE ONE

CHILD DEVELOPEMNT AND CHIDREN WITH SPECIAL NEEDS

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1. MODULE ONE- INTRODUCTION: CHILD DEVELOPMENT, THE SPECIAL CHILD AND NATIONAL PROGRAMME FOR CHILDREN WITH SPECIAL NEEDS

This section presents an overview of child development and special need conditions.

Learning objectives of the module one:

At the end of this session the trainees should have become familiarized with child development and chidren with special needs, and understood relevant programmatic concerns

1.1 Training session one – Child development and Special needs

Methods	Reading exercise
Duration	60 minutes

1.1.1. Learning activity one : Reading exercise

Read the following section carefully. You may do self reading or your group can read it together by one of your colleagues taking turns in reading different paragraphs.

Child Development

Growth and development characterize childhood. The growth refers to the increase of weight and size of the body. Development, refers to changes in the degree of complexity, when performing certain functions and acquiring certain skills. During development, gradual moves from simpler to more complex changes are seen in learning and acquisition of new skills of body movement, sense of balance (equilibrioception) and sensory and motor coordination.

Most children, when they develop follow similar stages, though there may be differences in paces at which they do so. Every child becomes unique in his or her pattern of development, yet these differences often remain within the typical ranges constituted by the developmental processes of their peers. This allows the construction of normative patterns or standards of development across groups of children in communities.

Development is considered to be determined "by nature through nuture". Genetic studies indicate that the contribution made by genetic factors in child development is around one half. Almost equal stake taken by environmental factors poses a considerable potential as well as vulnerability.

Developmental domains

Children develop with advances in interrelated domains: Physical, Cognitive, Social Emotional and Language (fig.1). In reality these domains remain latent and operate in interlinked manner to provide holistic development of the child.

Fig.1- Developmental in Domains
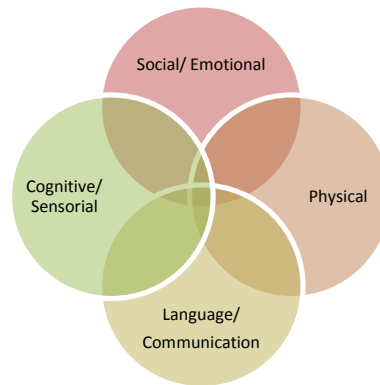
These domains are further subdivided in to sub-domains, specific aspects, standards and indicators for descriptive and enumerative purposes related to child development.

Developmental stages

Scientists have adopted two different models to describe the child development: quantitative and qualitative. The quantitative model primarily assumes development as a continuous orderly accumulation of skills, dependant on the mastering of pre requisite skills. Qualitative model, in contrast, considers development as occurring in distinct qualitatively different developmental stages. Quantitative concept describes development as a continuous process where as qualitative concept describes development as a process marked by periodic discontinuation and reorganization of skills. Research shows supportive evidence for both models. However focusing on qualitative approach makes it easier to understand development process. According to qualitative concept of development there are 5 qualitatively different stages of development during first 3 years of life. It is assumed that in each stage there is a marked shift in the manner in which children perceives, understand and interacts with environment. The stages include:

1. The stage 1:   Prenatal period,
2. The stage 2:   Birth to two months,
3. The stage 3:   Third to sixth month,
4. The stage 4:   Seventh to eighteen months
5. The stage 5:   Nineteen to thirty six months

The stage one: Pre natal period: The foundation for child development is established during the antenatal period where the embryogenesis is completed around the 10th week of gestation. The precursors of most organs are developed during this period.

The stage 2- Birth to two month: During the stage 2 children develop capacity for maintaining physiological balance, in the face of external and internal stimulation. They become surprisingly active learners and capable of cross modally exploring and perceiving the environment. During this period they develop the

ability to visually tract objects as they move through space. They start to get habituated to invariant stimuli, and be capable of discriminating novelty. They even anticipate care giver actions. Engaging in voluntarily motor acts also seen during the first 2 months.

The stage 3 – Third to sixth month: The 3rd stage is primarily marked by increased social reciprocity or interactions between the infant and care giver(s). Around 4th month of life, infants starts to show responsive cooing. At the same time a collection of increasingly differentiated emotional responses and a tendency to direct imitation of others behaviours become apperent. These developments facilitate mutual social interactions. Around 4 ½ months infants can understand that objects and people continue to exists even when they are no longer within the sight or sound. This is called *"object permanence".* They also have an elementary understanding of the principles of cause and effect. These 2 skills significantly change the infant's perception of the world and provide requisite skills for infants' future social and cognitive development. The ability of object permanence allows infants to create mental representation of objects and people. This is a prerequisite skill for visual differentiation between care givers and strangers. Cause and effect reasoning leads to increased intentionality of actions. These skills make it possible for simple interactive games between infants and care givers such as peak- a –boo.

The stage 4 – Seventh to eighteenth month: Around 7th to 9th month infants know that their thoughts, feelings, gestures and sounds are understood by others. This is called "*inter-subjectivity*". At the same time most infants also begin to demonstrate means-end reasoning leading to goal directed behavior. That is they can string together more than one behaviors in order to achieve a final outcome, often attainment of some desired object. Through these new found skills: inter-subjectivity and means end reasoning, infants start to use caregivers as objects to get their needs and wants met. These 2 skills together leads to "*communicative gesturing"* (e.g. the moment when stretching for an object just out of reach becomes pointing to that object while looking at the care giver in order to request attention). These qualitative shifts result in a profound impact on social interactions and social preferences. About 6th to 8th months of age separation anxiety becomes observable. This will peak at 14th to 18th month and decline thereafter. Stranger anxiety begins around 8th month and peaks about 24th moth and decline steadily thereafter.

Around 12 months of age children typically walk. This results in considerable increase in the freedom of movement resulting in more opportunities to explore. Their reasoning becomes strikingly less rigid and they tend to be open to alternative solutions. What is known as the AB error of thinking reduces or diminished by the age of 12 months. AB error means infants tendency to look for an object in the same place even after watching someone remove that object from that place to a different location. The ability to hold increasingly larger amounts of information and ability to discard old information allows fluidity of reasoning such that AB error disappears. At this age the trial and error problem solving begins to replace conditioned response learning. Around 12 to 18 months infants develop rudimentary communicative speech. By 12 months most infants understand the meanings of several words. They may also have an expressive vocabulary of around 5 words. By 18 months children understand amazing number of words and can communicate in one word sentences. Around 18 months their expressive vocabulary reaches to 10 words. The melodic jargoned speech pattern changes to resemble inflections and turn taking pauses observed in conversations.

The stage 5- nineteenth to thirty six months: In the beginning of this stage, infants are able to allow symbols to stands for objects. This increasing ability to use symbolic representations greatly improves language proficiency. At the same time direct imitation of others are changed to deferred imitation where

others behaviors are remembered and practiced later. Symbolic play appears as children starts to use objects (e.g. doll to symbolize a baby, a toy to symbolize a car etc…) at this age. They begin to combine gestures and words to express their feelings and thoughts. Around 18 to 24 months internal problem solving begins to replace trial and error problem solving. The expressive vocabulary increased from 10 words in the stage 4 to 50 to 75 words during this time period. By 30 months the expressive vocabulary increased to 300 words while by 36 months it becomes 500-1000 words. Children speak in 3 to 4 word sentences by 36 months.

Timing of brain development

The development of neuronal systems is restricted to early years of life. It starts in 18th -24th pre natal days and extends up to 15 years of age. However the most of brain development is completed by 3 years of age (Figure 2)).

Fig.2   Timing of brain development
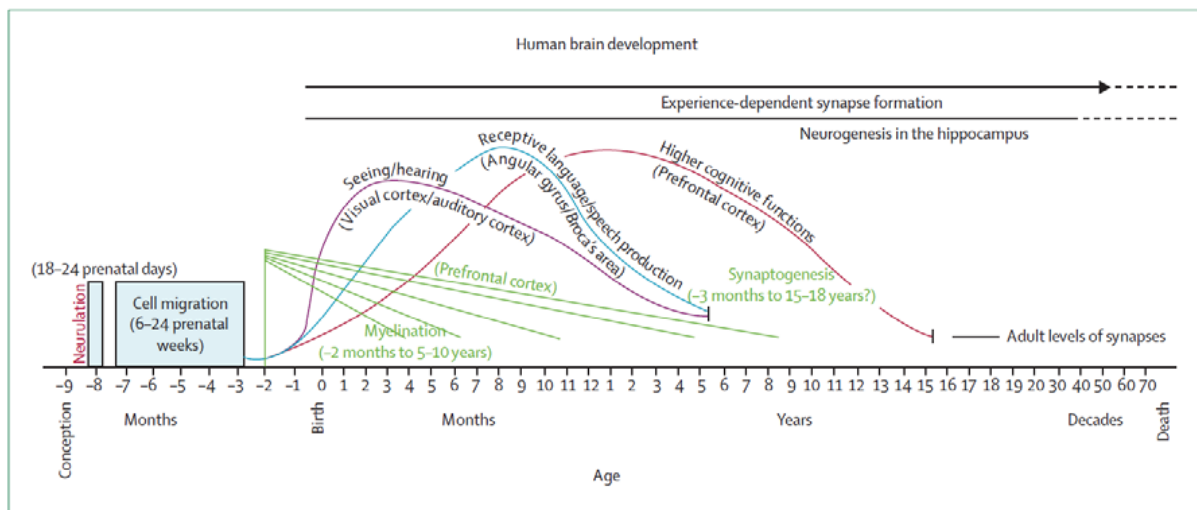
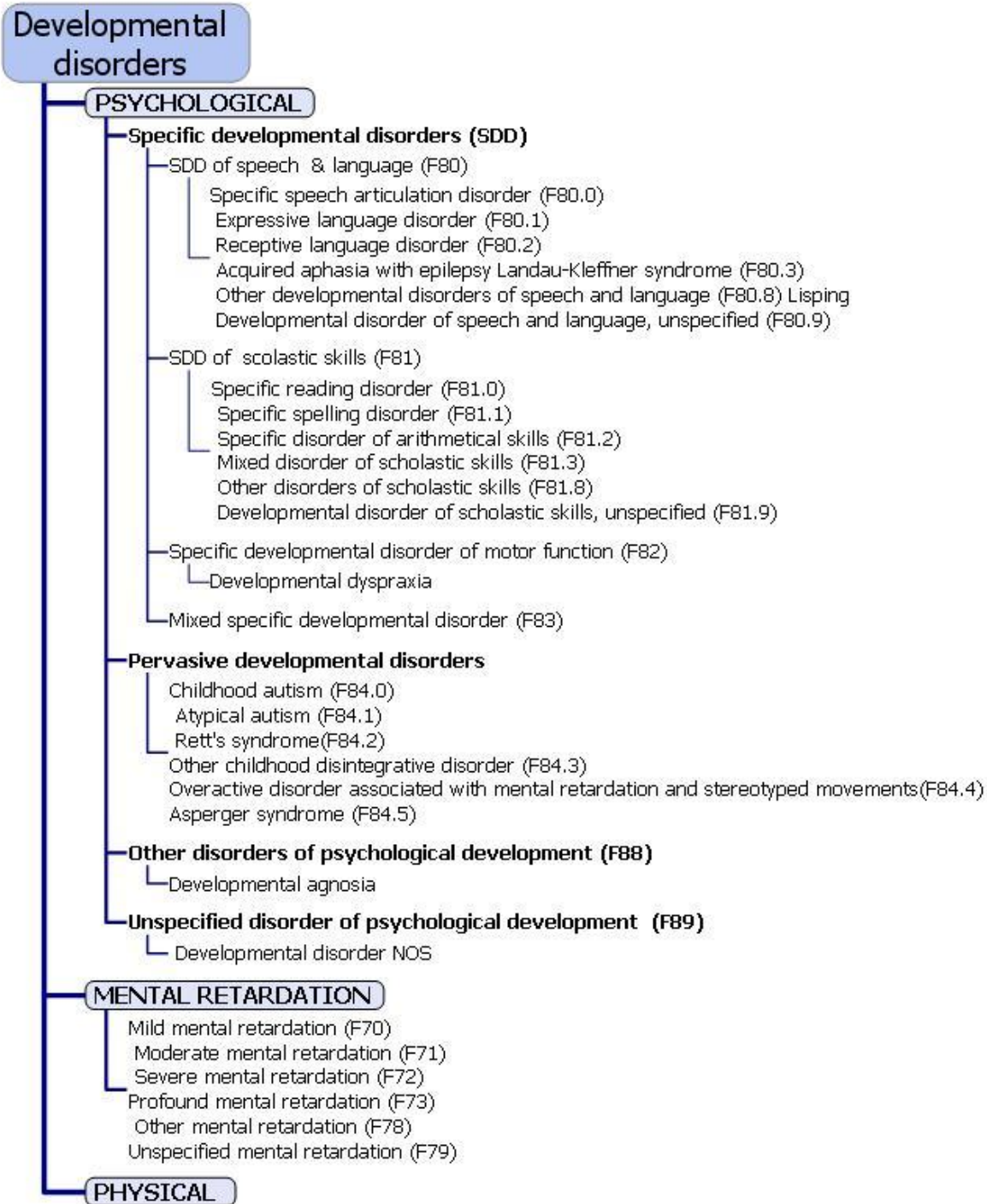(Source : Lancet 2007; 369(9555): 60-70)

It is well known that the simple interventions directed in early years of life can optimize the development of all children. It is also known that mediation in early years of life is important for managing the developmental problems such as autism.

Developmental delays and problems & special needs

Many children will follow the process of development within the standard normative individual variations and be able to thrive with standard external support. However some get delayed to achieve the developmental level expected by their ages and some show unusual/abnormal characteristics in their development process. Development being a complex process, that there may be numerous ways in which it can get adversely affected. The affected children may have developmental problems. Developmental problems are basically classified as psychological and physical though they can be present in combination. These children may have to depend on extra care or support for their day to day survival and functions. These children who need extra care are identified as children with special needs. Children with special needs are defined as "*Children who have or are at increased risk for chronic physical, developmental, behavioral, or emotional conditions who require health and related services of a type or amount beyond that required by children generally*"(Maternal & Child Health Bureau USA).

Figure 3 presents important developmental problems as classified according to ICD 10 criteria.

Figure 3 – Types of devleopemtnal diosorders based on ICD 10 Categories

Developmental disorders

PSYCHOLOGICAL

Specific developmental disorders (SDD)

SDD of speech & language (F80)
- Specific speech articulation disorder (F80.0)
- Expressive language disorder (F80.1)
- Receptive language disorder (F80.2)
- Acquired aphasia with epilepsy Landau-Kleffner syndrome (F80.3)
- Other developmental disorders of speech and language (F80.8) Lisping
- Developmental disorder of speech and language, unspecified (F80.9)

SDD of scolastic skills (F81)
- Specific reading disorder (F81.0)
- Specific spelling disorder (F81.1)
- Specific disorder of arithmetical skills (F81.2)
- Mixed disorder of scholastic skills (F81.3)
- Other disorders of scholastic skills (F81.8)
- Developmental disorder of scholastic skills, unspecified (F81.9)

Specific developmental disorder of motor function (F82)
- Developmental dyspraxia

Mixed specific developmental disorder (F83)

Pervasive developmental disorders
- Childhood autism (F84.0)
- Atypical autism (F84.1)
- Rett's syndrome(F84.2)
- Other childhood disintegrative disorder (F84.3)
- Overactive disorder associated with mental retardation and stereotyped movements(F84.4)
- Asperger syndrome (F84.5)

Other disorders of psychological development (F88)
- Developmental agnosia

Unspecified disorder of psychological development (F89)
- Developmental disorder NOS

MENTAL RETARDATION
- Mild mental retardation (F70)
- Moderate mental retardation (F71)
- Severe mental retardation (F72)
- Profound mental retardation (F73)
- Other mental retardation (F78)
- Unspecified mental retardation (F79)

PHYSICAL

MODULE TWO

AUTISTIC SPECTRUM DISORDER

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2. MODULE TWO – AUTISM

Module two focuses on autism, which is a neuro-developmental disorder. The term autism spectrum disorders (ASD) is often used synonymously with autism. The term is seen as appropriate because children with autism fall into a spectrum on varying levels of severity and degree of impairment. At one end of the spectrum are children who are severely impaired with limited intellectual capacity. At the other end of spectrum are children who are high functioning and minimally impaired and may also have exceptional skills, although still displaying the cardinal clinical features. The term "High Functioning Autism" is sometimes used here. However, the diagnostic classifications (ICD 10 and DSM IV) still use the broad term of Pervasive Developmental Disorders (PDD) under which autism and other related disorders are classified. The disorders under PDD are referred to later in this module.

Learning objectives of the module two:

At the end of this session the trainees should have:
- become aware of the autism and PDD
- been exposed to the screening procedures used in the identification of children with autism
- acquire knowledge and skills on the management of children with autism

2.1 Training session one: Autism

Methods	Plenary and video presentation , Reading exercise and question answer session Group work
Duration	150 Minutes

2.1.1. Learning activity one: Plenary presentation
Your facilitator will make a plenary presentation on autism; You may clarify any queries during the session.

2.1.2. Learning activity two: Reading exercise and question answer session
Now read the following section on autism. As in the section above you may do self reading or your group can read it together by one of your colleagues taking turns in reading different paragraphs. Answer the questions given at the end using a pencil.

2.1.3. Learning activity three: video presentation
You will also be able to watch a video demonstrating the clinical features of children with autism.

AUTISM

Autism was first introduced in 1943 by Leo Kanner who described 11 cases seen at the Johns Hopkins Hospital. He labeled them as "early infantile autism" and noted various ways in which these children were distinctly different from other childhood disorders. Around the same period, a German scientist, Dr. Hans Asperger, described a milder form of the disorder that is now known as Asperger Syndrome.

In the first epidemiological studies in the 1960s, the prevalence was found to be 4 per 10,000. Later studies showed higher prevalence depending on whether a broader definition for autism was used. However, it is generally thought that in the last 2 decades or so, prevalence of autism is rising. A multi-site survey in US has declared that 1 in 150 children have autism or 66 per 10,000. A longitudinal study in Taiwan compared the rate of autism in birth years of 1996-1999 and 2000-2004 and found an increase of 14%, where as newly diagnosed mental retardation decreased by 42% to 50% over the same period. Similar rise in incidence rate is reported elsewhere and is thought to be partly due increased awareness about autism among the medical profession. Boys are 3-4 times more likely to be affected than girls.

Autism can usually be reliably diagnosed by age 3. Some believe that a diagnosis can be made even at 6 months. Parents are usually the first to notice unusual behaviors in their child or their child's failure to reach appropriate developmental milestones. Some parents describe a child that seemed different from birth, while others describe a child who was developing normally and then lost skills around 2 to 2 ½ years. Some physicians may initially dismiss signs of autism, thinking a child will "catch up," and may advise parents to "wait and see." New research shows that when parents suspect something is wrong with their child, they are usually correct and the child should be screened for autism.

Autism appears in early life and typically lasts throughout a person's lifetime. Autism impairs a person's ability to communicate and relate to others and its impact can range from very mild to quite severe level. The essential features for diagnosis are the presence of markedly abnormal or impaired development of social interaction and communication and markedly restricted range of activities and interests. Manifestation of autism will vary according to the developmental level and the chronological age of the child.

Common characteristics of Autism reported by parents
Some of the common characteristics of children with autism are as follows:

- Unusual Interests: The child may show intense interest restricted to a few objects or topics. The interests could be unusual when compared to those of the peers. The areas of interest may change over with time but while it lasts, there is a tendency to exclude /ignore other interests. The areas of interest could be cars, trains, outer space, animals, dinosaurs, history, a particular academic subject. Parts of objects may interest the child more than the whole (wheels or doors on a toy car as opposed to the whole car), and the child may develop unique ways of playing with toys (lining them up in a particular order, etc.). The child may also be interested in some of the same

things as his or her peers, but to such a degree that they exclude all the other things.

- <u>Unusual social interactions:</u> The child may be interested in having friends but may not understand how to be appropriately sociable. The child may seem to know all the right words for interacting, but lack the ability to be effective in initiating and maintaining conversations and friendships. The conversations are usually "one-sided," focusing on the child's area of special interest. The child may prefer to be alone, and find it difficult to join his or her peers in imaginative play. There is lack of eye contact and sometimes inappropriate staring. The child may not be sensitive to other people's emotions and not understand the interests, actions, or intent of others.
- <u>Unusual physical movements:</u> The child may display repetitive behaviours such as rocking, flapping a hand, banging the head, and flicking fingers in front of the eyes, which are self-stimulatory. There may be physical awkwardness or poor coordination with difficulty in walking down stairs or riding a bike, unsteady balance, walking into objects, and swinging the arms while running.
- <u>Unusual reactions to objects, people, and situations:</u> Child may show sudden violent reactions to touch, sounds, people, suggestions, or events. The child may also show little or no response to things (eg. sounds, pain) Transitions, disappointments, or changes in routine may be particularly upsetting. The child may exhibit an unusually high level of anxiety and engage in ritualistic or compulsive behaviours when worried or upset. The child may take criticisms and advice from selected persons but not from anyone else. A child with sensory processing difficulties may either avoid certain stimuli (including sounds, sights, touch, smells, flavours/textures, movement, etc.), or seek them out excessively.
- <u>Unusual speech and language:</u> Sometimes the child has an advanced vocabulary, with very "correct" speech like an adult. This is particularly common in those with Asperger disorder. There may be an unusual mannerism in rhythm of speech. Words, phrases, or sentences may be used out of context, perhaps being recited from memory (echolalia). Children with ASD may be able to read and/or talk well but have difficulty answering questions or comprehending. The child may tend to interpret language literally and has difficulty understanding humour, sarcasm, figures of speech or proverbs. Social use of language (pragmatics) may be different or even impaired. Other children with ASD may be non-verbal, or severely delayed in speech and language abilities.
- <u>Unusual abilities:</u> The child may have an incredibly accurate memory of seemingly obscure details (facts, quotes, locations, dates, phone numbers, etc.). This ability to memorize may or may not consistently extend to "common sense" details such remembering homework assignments or where the individual put his or her shoes. Although some children with ASD have a low IQ, others may excel at one or more academic areas, having an average to high intellectual ability.

Reasons for which parents seek help for their children with autism

According to a study by Howlin and Moore in 1997, parents may seek help for undiagnosed autism in their child for a variety of reasons. Such reasons vary in type and frequency.
- Delay in talking / language problems (40.9%)
- Abnormalities in social development (19.3%)
- General behavioural problems (12.7%)
- Delay in motor milestones (7.1%)
- Concerns about hearing (5.6%)
- Other (3.8%)
- Ritualistic & obsessional behaviour (3.7%)
- Professional expressed concern (3.1%)
- Medical problems (eg epilepsy) (2.2%)
- Failure to develop normal play (1.5%)

In Sri Lanka over 80 % of children with autism presents with speech related problems. For example delay in onset , regression of speech following a period of apparently normal development, not communicating but having own jargon language.

Exercise:
Answer the following questions:

I. What are the main clinical features in children with autism?

………..
………..
………..

II. What are the characteristics noticed and complained by parents of children with autism?

………..
………..
………..

IV. What are the main reasons for a parent to seek help for a child with undiagnosed autism?

………..
……

2.1.4. Learning activity four: Group work

The following account text box contains the detailed ICD 10 clinical diagnostic criteria for the Autism and other main conditions that comprise pervasive developmental disorders (PDD). These definitions are quite complex and one need to understand them to apply those in to real life children. Now you are requested to work in groups assigned by your facilitator and a) try to describe (in simple terms) and understand the features of children who would confirm to different diagnostic guidelines. Your facilitator will assist you in these exercises. b) to find out the similarities and disparities of the 4 conditions mentioned. At the end of discussion one of you will have to present the findings in a plenary.

ICD 10 Pervasive Developmental Disorders

Pervasive developmental disorders include the following conditions
  a. F84.0 ***Childhood autism***
  b. F84.1 Atypical autism
  c. F84.2 Rett's syndrome
  d. F84.3 Other childhood disintegrative disorder
  e. F84.4 Overactive disorder associated with mental retardation and stereotyped movements
  f. F84.5 Asperger's syndrome
  g. F84.8 Other pervasive developmental disorders
  h. F84.9 Pervasive developmental disorder, unspecified

F84.0 Childhood autism

Childhood autism is characterized by the presence of abnormal and/or impaired development that is **manifest before the age of 3 years.** It usually shows abnormal functioning in **all three** areas of **social interaction, communication**, and **restricted, repetitive behaviour**. Autism is seen in boys three to four times more often than in girls.

Usually children with Autism shows no prior period of unequivocally normal development but, if there is, abnormalities become apparent before the age of 3 years.

Qualitative impairments are always seen in reciprocal social interactions of children with autism. These take the form of an inadequate appreciation of socio-emotional cues. Autistic children usually do not respond to other people's emotions. No they modulate their behaviours according to social context. They are poor in use of social signals and weak in integrating social, emotional, and communicative behaviours. Especially, autism children lack socio-emotional reciprocity or mutual actions.

Similarly, **qualitative impairments in communications** are universal. Autistic children do not use whatever the language skills they have for communicating with others. They can't engage in make-believe and social imitative plays. Poor synchrony and lack of reciprocity in conversational interchange is another feature of this condition. Autistic children have poor flexibility in language expression and they relatively lack the creativity and fantasy in thought processes. They show little or no emotional response to other people's verbal and nonverbal overtures. They can't modulate communication by using variations in cadence and emphasis. A similar lack of accompanying gesture to provide emphasis or aid meaning in spoken communication makes the situation worse.

The condition is also characterized by **restricted, repetitive, and stereotyped patterns of behaviour**, **interests, and activities**. These take the form of a tendency to impose rigidity and routine on a wide range of aspects of day-today functioning; this usually applies to novel activities as well as to familiar habits and play patterns. In early childhood particularly, there may be specific attachment to unusual, typically non-soft objects. The children may insist on the performance of particular routines in rituals of a nonfunctional character; there may be stereotyped preoccupations with interests such as dates, routes or timetables; often there are motor stereotypies; a specific interest in nonfunctional elements of objects (such as their smell or feel) is common; and there may be a resistance to changes in routine or in details of the personal environment (such as the

movement of ornaments or furniture in the family home).

In addition to these specific diagnostic features, it is frequent for children with autism to show a range of other **nonspecific problems** such as fear/phobias, sleeping and eating disturbances, temper tantrums, and aggression. Self-injury (e.g. by wrist-biting) is fairly common, especially when there is associated severe mental retardation. Most individuals with autism lack spontaneity, initiative, and creativity in the organization of their leisure time and have difficulty applying conceptualizations in decision-making in work (even when the tasks themselves are well within their capacity). The specific manifestation of deficits characteristic of autism change as the children grow older, but the deficits continue into and through adult life with a broadly similar pattern of problems in socialization, communication, and interest patterns. Developmental abnormalities must have been present in the first 3 years for the diagnosis to be made, but the syndrome can be diagnosed in all age groups.

All levels of IQ can occur in association with autism, but there is significant mental retardation in some three-quarters of cases.

*DSM IV Classification adopts a somewhat different approach to characterize autism. The following are **the DSM-IV Criteria for Autistic Disorder (299.0).***

A. *A total of at least six items from 1), 2), and 3), with at least two from 1), and one each from 2) and 3):*
   1. *Qualitative impairment in social interaction, as manifested by at least two of the following:*
      a. *Marked impairment in the use of multiple nonverbal behaviors such as eye-to-eye gaze, facial expression, body postures, and gestures to regulate social interaction*
      b. *Failure to develop peer relationships appropriate to developmental level*
      c. *A lack of spontaneous seeking to share enjoyment, interests, or achievements with other people (e.g., by a lack of showing, bringing, or pointing out objects of interest to other people)*
      d. *Lack of social or emotional reciprocity*
   2. *Qualitative impairments in communication as manifested by at least one of the following:*
      a. *Delay in, or total lack of, the development of spoken language (not accompanied by an attempt to compensate through alternative modes of communication, such as gestures or mime)*
      b. *In individuals with adequate speech, marked impairment in the ability to initiate or sustain a conversation with others*
      c. *Stereotyped and repetitive use of language or idiosyncratic language*
      d. *Lack of varied spontaneous make-believe play or social imitative play appropriate to developmental level*
   3. *Restricted repetitive and stereotyped patterns of behavior, interests, and activities, as manifested by at least one of the following:*
      a. *Encompassing preoccupation with one or more stereotyped and restricted patterns of interest that are abnormal either in intensity or focus*
      b. *Apparently compulsive adherence to specific, nonfunctional routines or rituals*
      c. *Stereotyped and repetitive motor mannerisms (e.g., hand or finger flapping or twisting, or complex whole body movements)*
      d. *Persistent preoccupation with parts of objects*

B. Delays or abnormal functioning in at least one of the following areas, with onset prior to age three:
    1. Social interaction,
    2. Language as used in social communication, or
    3. Symbolic or imaginative play.

*C: Not better accounted for by Rett disorder or childhood disin*tegrative disorder.

F84.1 Atypical autism

A pervasive developmental disorder that **differs from autism in terms either of age of onset or of failure to fulfill all three sets of diagnostic criteria**. Thus, abnormal and/or impaired development becomes manifest for the first time only after age 3 years; and/or there are insufficient demonstrable abnormalities in one or two of the three areas of psychopathology required for the diagnosis of autism (namely, reciprocal social interactions, communication, and restrictive, stereotyped, repetitive behaviour) in spite of characteristic abnormalities in the other area(s). Atypical autism arises most often in profoundly retarded individuals whose very low level of functioning provides little scope for exhibition of the specific deviant
behaviours required for the diagnosis of autism; it also occurs in individuals with a severe specific developmental disorder of receptive language. Atypical autism thus constitutes a meaningfully separate condition from autism.

F84.2 Rett's syndrome

A condition of unknown cause, so far reported **only in girls**, which has been **differentiated on the basis of a characteristic onset, course, and pattern of symptomatology.** Typically, apparently **normal or near-normal early development** is followed by partial or complete loss of acquired hand skills and of speech, together with deceleration in head growth, usually with an **onset between 7 and 24 months of age.** Hand-wringing stereotypies, hyperventilation and loss of purposive hand movements are particularly characteristic.

Social and play development are arrested in the first 2 or 3 years, but social interest tends to be maintained. During middle childhood, trunk ataxia and apraxia, associated with scoliosis or kyphoscoliosis tend to develop and sometimes there are choreoathetoid movements.

Severe mental handicap invariably results. Fits frequently develop during early or middle childhood. In most cases onset is between 7 and 24 months of age. The most characteristic feature is a loss of purposive hand movements and acquired fine motor manipulative skills. This is accompanied by loss, partial loss or lack of development of language; distinctive stereotyped tortuous wringing or "hand-washing" movements, with the arms flexed in front of the chest or chin; stereotypic wetting of the hands with saliva; lack of proper chewing of food; often episodes of hyperventilation; almost always a failure to gain bowel and bladder control; often excessive drooling and protrusion of the tongue; and a loss of social engagement.
Typically, the children retain a kind of "social smile", looking at or "through" people, but not interacting socially with them in early childhood (although social interaction often develops later).

The stance and gait tend to become broad-based, the muscles are hypotonic, trunk movements usually become poorly coordinated, and scoliosis or kyphoscoliosis usually develops. Spinal atrophies, with severe motor disability, develop in adolescence or adulthood in about half the cases. Later, rigid spasticity may become manifest, and is usually more pronounced in the lower than in the upper limbs. Epileptic fits, usually involving some type of minor attack, and with an onset generally before the age of 8 years, occur in the majority of cases. In contrast to autism, both deliberate self-injury and complex stereotyped preoccupations or routines are rare.

F84.5 Asperger's syndrome

A disorder of uncertain nosological validity, characterized by the same kind **of qualitative abnormalities of reciprocal social interaction** that typify autism, together with a **restricted, stereotyped, repetitive repertoire of interests and activities**.

The disorder differs from autism primarily in that there is **no general delay or retardation in language or in cognitive development**. Most individuals are of normal general intelligence but it is common for them to be markedly clumsy; the condition occurs **predominantly in boys** (in a ratio of about eight boys to one girl). It seems highly likely that at least some cases represent mild varieties of autism, but it is uncertain whether or not that is so for all. There is a strong tendency for the abnormalities to persist into adolescence and adult life and it seems that they represent individual characteristics that are not greatly affected by environmental influences.
Psychotic episodes occasionally occur in early adult life.

Diagnosis is based on the combination of a lack of any clinically significant general delay in language or cognitive development plus, as with autism, the presence of qualitative deficiencies in reciprocal social interaction and restricted, repetitive, stereotyped patterns of behaviour, interests, and activities. There may or may not be problems in communication similar to those associated with autism, but significant language retardation would rule out the diagnosis
(WHO 1992)

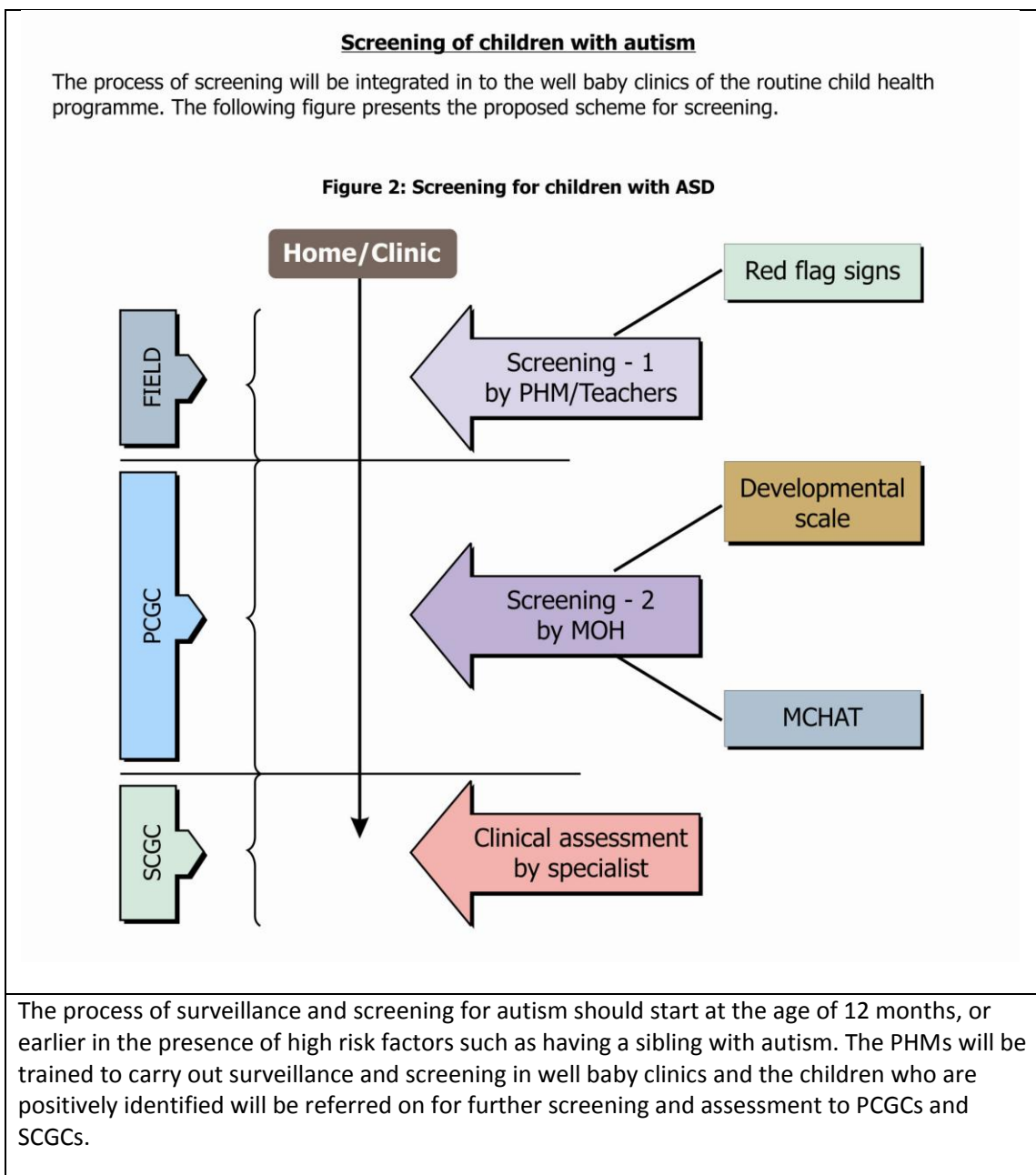## 2.2   Training session two- Identification of children with Autism – Screening

Methods	Reading exercise, plenary discussion role play and clinic session
Duration	120 Minutes

Training Instructions

2.2.1. Learning activity one: Introduction to screening: Plenary presentation

2.2.2. Learning activity two: Reading exercise

Read the following section. Note down any practical problems you foresee in implementing the following screening schedule.

Screening of children with autism

The process of screening will be integrated in to the well baby clinics of the routine child health programme. The following figure presents the proposed scheme for screening.

Figure 2: Screening for children with ASD

The process of surveillance and screening for autism should start at the age of 12 months, or earlier in the presence of high risk factors such as having a sibling with autism. The PHMs will be trained to carry out surveillance and screening in well baby clinics and the children who are positively identified will be referred on for further screening and assessment to PCGCs and SCGCs.

It should be emphasized that mothers are the first to recognize that there is something wrong in their child's development. Far too often, this concern is disregarded and inappropriate reassurance is offered that there is nothing wrong. It is known that a delay of 2 to 3 years can occur before a diagnosis is made, causing unnecessary delay in initiating intervention.

Four screening points will be used to identify children with autism spectrum disorders. That will fall on 12 months, 18 months and at pre-school entry and school entry. At each level a pre defined criteria (red flag signs) will be used to identify the children with high risk. At 12 months PHMs are expected to screen all the infants under their care for the presence of following signs.

> RED FLAG SIGNS SET -1
> i. Lack of babbling, pointing or other gestures
> ii. Lack of eye contact
> iii. Child does not orient to mother's voice
> iv. Child does not show items of interest to others
> v. Mother is concerned
> vi. Has a sibling with autism
> vii. Larger head circumference
> viii. Presence of antenatal and peri-natal adversities

If one or more of the above signs are present the child should be referred to the PCGC. At the PCGC the MOH will assess the development of the child using a developmental scale. The children found to have developmental problems will be subjected to a special developmental intervention package (package-1).

At 18 months of age all children (including those who were found to have red flag-1 signs, set -1 at the age of 12 months) will be screened for the presence of the following signs (Red flag signs set-2).

> RED FLAG SIGNS SET -2
> i. No single word by 16 months
> ii. No eye contact
> iii. Does not respond to name
> iv. No 2 words spontaneous speech (not echlalia)
> v. Lack of language use and social interaction
> vi. Child does not show items of interest to others
> vii. Mother is concerned
> viii. Prefers to play alone. No pretend play
> ix. Has a sibling with autism
> x. Unusual sensory preferences
> xi. No appropriate social behaviour and emotional expression

If these children are found to have one or more red flag signs, set -2, PHMs are expected to refer them to PCGC. In PCGC MOH will assess them by applying a developmental scale and MCHAT scale to them. Those who are identified with problems will be sent to SCGC for further examination and guidance.

Pre -school children will be screened for having the following signs (Red flag signs set -3).

RED FLAG SIGNS , SET -3

i. Mother concerned. Preschool teacher concerned
ii. Poor use of words to communicate
iii. Lacks appropriate gestures to request for things
iv. Ignores when mother calls the name or when mother attempts to engage child in play
v. Does not seem to understand spoken language
vi. Lacks eye contact
vii. Prefers to play alone. Does not mix with peers
viii. Does not show pretend play – eg. Feed a doll
ix. Displays extreme distress when child does not get his own way or sometimes for no apparent reason
x. Overactive and sometimes under-active
xi. Lacks emotional expressions
xii. Shows repetitive behaviors with toys or with own fingers and hands
xiii. Smells everything including food

Pre- school teachers will be trained to screen for these signs and if any of the child is found to have those signs then these children will be referred to PCGC. In PCGC the MOH is expected to confirm the presence of those signs by verifying those with the parents. If one or more signs are present then these children are assessed using DSM IV criteria by the MOH for autism. If the MOH thinks the child is having autism the child is referred to the SCGC for confirmation of diagnosis and management guidance.

Similarly school children will also be screened for the presence of the red flag sign set 4 by

primary school teachers. If one or more signs are present then these children will be referred to the PCGC. At PCGC MOH is expected to examine these children for autism using DSM IV criteria. If autism is suspected they will be referred to SCGC for confirmation of diagnosis and management guidance.

RED FLAG SIGNS SET-4

*ALL THE SIGNS OF **RED FLAG SIGNS 3 ABOVE** and the follwing*

i. Mother & /or class teacher is concerned.

ii. Reluctance to mix with peers may be more noticeable
iii. When other children attempt to engage the child, may even become aggressive towards them.
iv. Poor compliance with school work – may refuse to work altogether, ignore the teacher's instructions and appear indifferent to the classroom environment. Sometimes may attempt only the preferred work. Some high functioning children may do well in their schoolwork.

In addition sensory dysfunctions are common among school children with autism. These may present as hypo or hyper sensitivity in any one or multiple sensory modalities and may play a significant role in the behaviour of the child and the ability to participate in an intervention programme. Therefore, understanding these dysfunctions is crucial to management.

Vision – fascination with ceiling fans, wind in trees, power lines, rain on window etc. Upset by certain colors' or relaxed by others. Follows line with his eyes eg. Edge of furniture. Twirls or spins object for visual stimulation. Focuses on part of the object and not the whole.

Sound – upset by loud sudden noises, or appears to be deaf and unresponsive. Some noises e.g. running water evoke severe response for no reason. Aware of very quite background sounds and unable to concentrate on what is important. Bangs objects for auditory stimulation.

Touch - likes to touch certain surfaces eg stroke other people, hates other surfaces, fussy when clothes are touching skin. Avoids playing with sand or does not like gum or glue on the hand. Sometimes prefers firm touch and is irritated by light touch.

Taste - very fussy about foods, needs specific textures, licks food and non food items.

Smell - sensitive to offensive smells, may be upset by pleasant smells eg . perfume. May smell food and non food items.

Pain - can be insensitive to significant pain or become hysterical over a minor scratch

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Teeth and hair- may hate cleaning teeth or having hair combed or hair cut

Motor- may enjoy or hate physical activities and rough tumble

Figure 3: Screening protocol
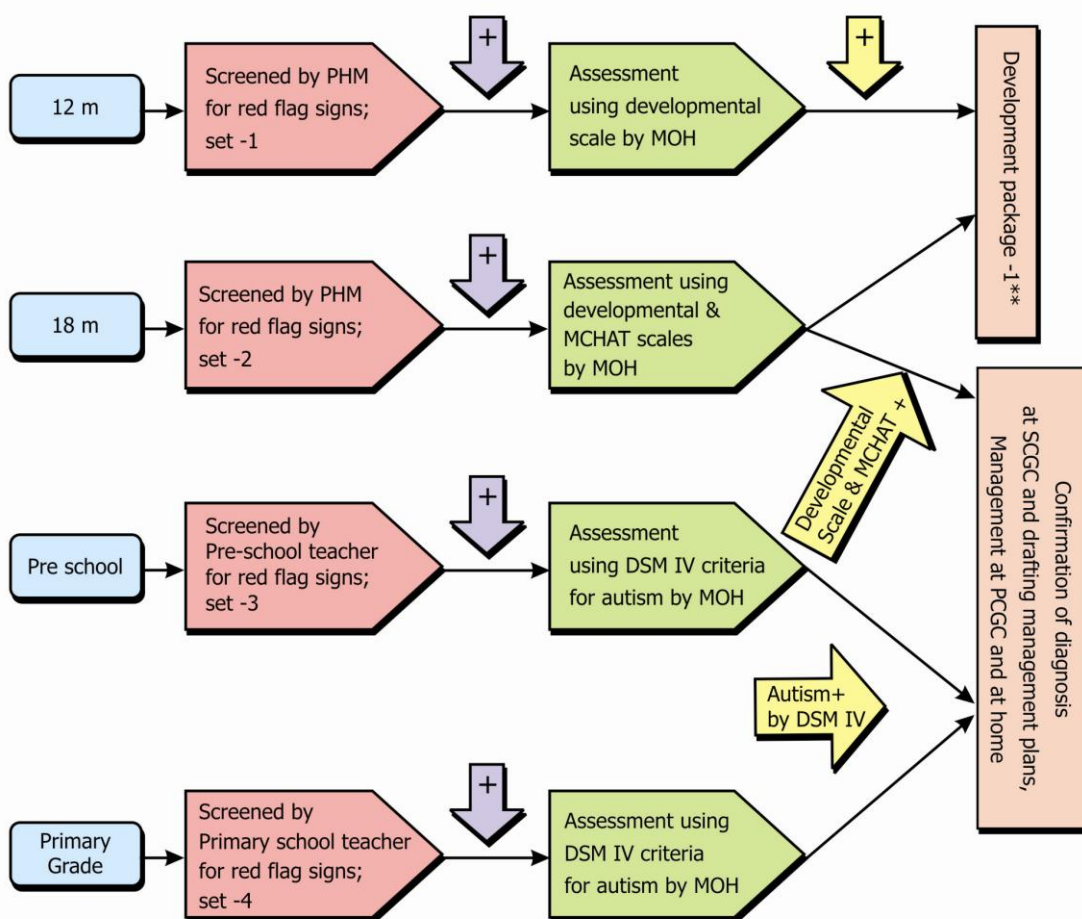
** development package-1 is given in the appendix

2.2.3. Learning activity three: Clinic activity - Practicing red flag signs

Now we are going to practice using red flag sings, MCHAT scale a developmental scale and DSM criteria. You may interview the parents, observe children and assess using checklists provided.

2.2.4. Learning activity four: Role play on introducing package one

You have learned that at 12 months all the children are supposed to be screened and those who found to be backwards should be instructed to stimulate using the package -1. Read the package 1 given in appendix and prepare to conduct a role play on how to instruct mothers to follow it.

2.3   Training session three - Management of children with Autism

Methods	Plenary session, Reading exercise, , video demonstration, practical session
Duration	195 Minutes

Training Instructions

2.3.1. Learning activity one: Plenary presentation

You will have a plenary presentation on the management of autism.

2.3.2. Learning activity two: Reading exercise

Please read the following activity in group and answer the questions at the end.

Managing Children with Autism

In general, the aim of intervention in any developmental disorder is for the following reasons

   i.   Enhance development and quality of life

   ii. Minimise potential for delay

   iii. Minimise special needs for health, education, social welfare

   iv. Optimise opportunities for learning

   v.   Enhance capacity of families as caregivers

Specifically in autism, the interventions are targeted to reduce the main deficits of social interaction and communication.

Early intervention is critical in autism to gain maximum benefit from therapeutic measures. Currently, there is no effective treatment for autism. However, it is widely accepted that autism should be recognized as early as possible and that early intervention is necessary and beneficial in terms of gains in development. Also, early intervention in an appropriate educational setting for at least two years during the preschool years can result in significant improvements for many young children with Autism. Outcome of intervention is less favorable after 4 years.

Although the final diagnosis and intervention is started at SCGC level, continuation and monitoring happens at PCGC and community levels. The basic principles to be followed for efficient and effective intervention are :

• Starting as early as possible

• Implementation by parents at home

• Close intense work with child by one consistent adult (the parent), at least 25

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hours a week for 52 weeks of the year

- Multidisciplinary and multiagency support. Input by Speech and Language Therapists, Occupational Therapists and Teachers with special training is important. However as at present hardly any personnel from above cadres are available in PHC set up their activities are integrated in to the management protocol to be used by PHC workers (MOH, PHNS, PHMs). The parents are essential participants in the therapeutic process and should be well informed. Close collaboration should be set up between healthcare, education services and social welfare services.

Over the years a number of different methods have been tried on autism children. These include educational interventions, behavioral modifications, speech therapy, occupational therapy, pharmacological treatment, dietary modifications etc. There are widely publicized intervention programmes and techniques available, for example Applied Behaviour Analysis (ABA), Floortime, Picture Exchange Communication (PEC), SCERTS model, Sensory Integration Therapy.

Principles of Intervention

The main barrier to work with children with autism is their lack of connectedness with others. They "live in a world of their own" and are not interested in communicating and associating with other people or do not understand the social norms. Therefore, the foundation for facilitating development should aim at improving social connectedness and understanding social behaviour. To be an active participant in social activities, communication and play, social relationships, share joy and pleasure, the child should acquire competence in two major areas of functioning – Joint Attention and Symbol Use. Children with autism are significantly deficient in both these areas of functioning which should be the high priority goals in the intervention.

What is Joint Attention?

a. Share interests and experiences with others

b. Express intentions and needs to others.

c. Remain engaged with others in activities

d. Engage in two-way (reciprocal) interaction and communication with others

e. Pay attention to and respond to what others say

f. Initiate interactions using verbal or nonverbal means

What is Symbol Use?

a. Meaningfully use nonverbal communications such as gestures, facial expressions and vocalizations

b. Correctly interpret nonverbal communications of others

c. Appropriate use of objects in imaginative play

d. Appropriate use of objects to share meaning with others.

Informing parents

Once a child's diagnosis is confirmed by the SCGC, he/she will be referred back to

PCGC. In PCGC the MOH should emphatically explain their child's problem to the parents. It is important to explain the chronic nature of the condition, the need for continued care, the support given by the PCGC. Parents should be helped to cope up with the bad news and be supported to understand the realistic outcome of the child. It may be important to have parent groups who have similar children to discuss their problems.

- It is important to understand that many parents find it very difficult to come into terms with the fact that their child has autism. This is particularly so if they have some knowledge already and realize the adverse educational and lifelong implication of autism.
- Explain to the parents that there is a major delay in the development of eye contact in their children, which under normal circumstances should have been established in the first few months of life.
- Emphasize that in the absence of eye contact and shared attention, there is a serious interference to development of language, social skills and learning skills.
- The parents should work hard and consistently to establish eye contact before attempting to teach any other skills to the child. The techniques demonstrated to the parents should be continued at home with gradually increasing periods each day for a better outcome.
- Once the children realize the benefit that eye contact, and sharing attention with others getting their needs met, they will continue to use it.

Interventions

The special need programme has designed a parent mediated interventional package that can be applied by one consistent care giver at household. The intervention consists of a series of interactive activities that can be shared by the child. These are formulated using the above principles of joint attention and symbol use. At an initial period these activities should be conducted at PCGC clinic sessions with the participation of the parents. The activities given below are either demonstrated to the parents or could be shown by a video presentation. Once parents adequately understand those they can be asked to have these activities at home. The PHM can supervise and help to answer any queries during their home visits.

However, parents do not have to confine themselves to these activities. They can be as creative as possible using a variety of different activities, depending on the child's preferences and responses. Once established parents are asked to follow them at home. At the beginning, it may be possible to work with the child only for very short periods at a time 2 to 3 times a day. This period and frequency is gradually increased as the child improves in managing the activities and the parent organizes the time better. The time is best organized into 20-30 minute slots, during which the parent is intensely involved with the child. This is done by maintaining physical proximity, promoting eye contact and with gestures and touching. Talking to the child may be kept at a minimum at the beginning if this is necessary to focus on making eye contact. Choose a confined area to play to prevent child from moving away from the parent and also to provide minimal distraction.

The activities given below would provide learning opportunities for the child. The parent initiates activities and engage the child some of the time. At other times, the parent responds to any actions initiated by the child. The parent also should facilitate activities by modeling and providing play objects.

Assessment of progress

There should be regular follow up of the children in the clinics or at home. It is important to assess the progress of the children whom you are working with to know whether the intervention is having the desired outcome. The feedback of the parents about the progress in the child is crucial here. In addition, get the parent to describe and demonstrate to you the activities carried out at home. If there is lack of progress, it is important to find out the reason and remedy as soon as possible. One of the commonest reasons for lack of progress is that the parent was unable to spend enough time with the child. Discuss with the parent how this situation can be improved or alternative arrangements could be made for another adult to take over. This should be done in a non-critical, non-blaming and supportive manner. After all, every mother is highly motivated to improve their child's development. Inability to do so should be handled with sensitivity.

HOME BASED ACTIVITIES

Activity -1

- Let the child play with a selection of toys or other objects for some time and identify the child's most preferred item
- Remove all the other toys to prevent distraction
- Pick up the preferred item and hold it as close to your eyes as possible and make a sound or move it to and fro until the child looks at it
- Move the item a little away from the eyes and back again repeatedly
- The child will shift his gaze from the object to your eye at some stage
- Hand the object to the child if appropriate which will help the child to learn that giving eye contact is beneficial
- The process can be repeated using other items such as soap bubbles, colorful object, rattles etc.

Activity – 2

- Obtain the assistance of another person for the activity
- Objects / toys are made to suddenly appear and disappear or move and stop, at a distance of few feet away from the child.
- One person tells the child to "LOOK" while the other manipulates the object.
- When the child looks the moving object is made to suddenly disappear or stop moving, which will make the child look at you.
- After sometime, the child is likely to look at you when the object disappears from sight
- If you are working alone with the child, use toys such as remote controlled cars that can be manipulated from a distance

Activity -3

- Keep child's favorite toys away from his reach where he cannot take them without your help – for example, at the other end of the table
- Train child to point and ask for the toy while giving eye contact
- The child may need prompting initially
- Offer the toy to the child on pointing
- Offer the child 2 choices of food – example: yoghurt and an ice cream. When child selects one, hold it close to your eye. Give it to the child when eye contact is made
- Give an empty mug to the child but pour the drink only when the child looks at you.

Activity -4

- Get down to the child's level on the floor when playing to secure face to face interaction
- Secure child's attention by verbal and nonverbal means – call, touch, physical proximity
- Let the child initiate activities
- Share emotions and facial expressions with the child – smile and laugh in response to the child's positive emotions.
- Imitate child's verbal / nonverbal behaviour, then pause and wait for further response from the child.
- Imitate and expand on child's language production and play – when child rolls a car, put a figure in the car before rolling back
- Use an appropriate tone of voice to get the optimum arousal in the child – louder voice if under-aroused and soft voice to calm if over-aroused

Activity -5

- Initiate activities for the child and offer choices verbally or nonverbally – what to eat, what to wear and what activity to participate
- All activities should be appropriate to the child's developmental level
- Also, encourage initiation of activities by the child and allow enough time to do so
- Allow child to terminate activities
- To encourage interaction, get down to child's level, sit close to the child rather than at a distance, use gestures, objects and facial expressions to engage the child
- Expand on child's play and communication
- Use simple words and phrases

Activity -6

- Autistic children do not share. As a way to improve sharing, control the situation enforcing sharing.
- If child is rolling a car, do the same with another similar one. Get down to the level of the child.
- If the child dislikes closeness, get as close as possible without making the child too uncomfortable
- Tap the child's car and see whether there is a response
- Change the cars by giving your one to the child.
- Use two identical cars at the beginning and later use cars of different colour or size.
- If the child begins to tolerate the situation, exchange more frequently
- If two persons are present, one rolls the car and the other prompts the child to roll it back

Activity – 7

- Other toys can be used to improve sharing, such as multicoloured rings on a stick, small items in a box or a tin (balls, wooden blocks), and puzzles
- Keep all the items with you and prompt child to participate.
- Next, point to the items and get the child to carry out the action
- Take turns with the child on the same puzzle board
- Take turns with the child using two separate puzzle boards

Activity -8

- Use a purse-string bag with 6-8 common items inside (comb, tooth brush, small cup, spoon etc)
- Show the child the use of the objects while verbalizing the action using single words
- Second step – put pictures of each object inside the bag. Show the child object and the matching picture together
- Third step – get the child to match the object and the respective picture
- Show the use of the object each time, and use the single word for the action
- Fourth step – Show the child only the picture of the object and prompt the child to show its use in action
- Use another person to prompt the child to participate in the activity

Activity -9

- Functional activities are used to develop symbolic play – for example combing hair, making tea, bathing. Real life-size objects are used initially for the activity.
- As the first step, help child to carry out the action on himself – example comb the hair
- Second step – get the child to comb mother's hair
- Third step – help child to comb a doll's hair or pretend to do so
- Fourth step – pretend that a piece of cardboard to be a comb

2.3.3. Learning activity three: video presentation

Now you can watch a video presentation on how the above activities are conducted in actual settings.

2.3.4. Learning activity four: Practical session

Now we are going to practice the above activities with children who come to our clinic. Divide in to groups and demonstrate each activity by playing with children. At the same time you should be able to train parents how to do it.

MODULE THREE

BEHAVIOURAL & EMOTIONAL DISORDERS OF CHILDHOOD & ADOLESCENCE

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3. MODULE THREE – BEHAVIOURAL & EMORTIONAL DISORDERS IN CHILDHOOD

Module three focuses on behavioral and emotional disorders in childhood and adolescence.

Learning objectives of the module three:

At the end of this session the trainees should have:

become aware of the behavioral & emotional disorders in childhood and adolescence with special emphasis on Attention deficit hyperactive disorder (ADHD)

been exposed to the screening procedures used in the identification of children with ADHD

acquired knowledge and skills on the management of children with ADHD

3.1 Trainning session one: Attention deficit hyperactive disorder (ADHD)

Methods	Plenary presentation , Reading exercise and question answer session, video session
Duration	135 Minutes

Training Instructions

3.1.1. Learnning activity one: Plenary presentation

Your facilitator will make a plenary presentation on common behavioral and emotional disorders occurring in childhood; you may clarify any queries during the session.

3.1.2. Learnning activity two: Reading exercise and question answer session

Now read the following section on behavioral and emotional disorders in children. As in the section above you may do self- reading or your group can read it together by one of your colleagues taking turns in reading different paragraphs. Answer the questions included at the end using a pencil.

Behavioral and emotional disorders in childhood & adolescence

A large number of behavioral and emotional disorders are seen during childhood. The commonest problem among them is known as attention deficit hyperactivity disorder (ADHD).

Attention Deficit Hyperactive Disorder

ADHD was described as fidgety baby syndrome by Dr. Heinrich Hoffman in 1845. ADHD is a common behavioral disorder that affects an estimated 3% - 5% of children in the pre-school and early school years in America. The proportion affected in Sri Lanka is yet to be determined. Boys are about 3 times more likely than girls to be diagnosed with ADHD even though the reasons are not yet understood.

In simple terms kids with ADHD act without thinking, are hyperactive, and trouble focusing. They may understand what's expected from them but have trouble following through as can't sit still, pay attention and or attend to detail. All kids act this way at times, but difference with ADHD is that symptoms present for long period and occur in different settings. When such behaviors begin to affect performance in school, social behaviors with other children or at home, ADHD may be suspected. A child with ADHD needs to receive proper treatment help and guidance to achieve his/her full potential.

Children with ADHD are noted for 3 principle characteristics; inattention, hyperactivity and impulsivity. However as many normal children also have these symptoms one have to be cautious for diagnosing a child for ADHD. Usually hyperactivity and impulsivity go together and inattention stays alone. This has led to the subdivision of ADHD as predominantly hyperactive and impulsive type (which does not show significant inattention) and predominantly inattentive type (which does not show significant hyperactive impulsive behaviour).

Children who are predominantly hyperactive and impulsive

These children are constantly in motion and find it difficult to stay still. The run around, touch and play with their surrounding objects, and talk incessantly. They won't sit still for a class, or meal at home or watch television. They often squirm and fidget in their seats, roam around the room. Or they may wiggle their feet, touch everything, or noisily tap their pencils. Impulsive children find it difficult to control their immediate reactions and or to think before they act. Common features of them include;

- Fidgeting or squirming
- Showing difficulty in remaining seated
- Excessive running and climbing
- Difficult to play quietly
- Always seeming to be " on the go"
- Excessive talking
- Blurting out answers before hearing the full question
- Difficulty waiting for a turn or in line
- They may not get along well with their peers

Children who are Predominantly inattentive type find it difficult to keep their minds on any one thing and easily get bored with a task after only a few minutes. However this might not happen with the acts that they really like and enjoy. As this affect focusing the deliberate and conscious attention this can affect their learning. Often they find home work difficult and make frequent careless mistakes in attending to home work. Common features of children with predominantly in attentive types includes

- Often becoming easily distracted by irrelevant sights and sounds

- Often failing to pay attention to details and making careless

mistakes.

- Rarely following instructions carefully and completely losing or forgetting things like toys, or pencils, books and tools needed for a task

- Often skipping from one uncompleted activity to another

Children with predominant inattention seldom have hyperactivity and impulsivity characteristics. Their inability in paying attention makes them appear to day dream, "spacey", easily confused, and slow moving and lethargic. In class room they find it difficult to follow instruction and fall behind their peers. These children find it difficult to understand what they are supposed to do and make frequent mistakes. However they often sit quietly, unobtrusively and appear to be even working yet not fully attending or understanding their task or instructions. They are usually not highlighted as hyperactive impulsive ADHD children as naughty and difficult to control kinds but may even appear as really good ones. However their problems of inattention can severely affect their development and learning. As these children do not show problems in class rooms as other type of ADHD their problems may easily be overlooked unless actively looked for.

The combined types have combined features of both types.

DSM IV criteria for ADHD is as follows:

A. Either (1) or (2)

(1) Six (or more) of the following symptoms of inattention have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Inattention

(a) often fails to give close attention to details or makes careless mistakes in schoolwork, work, or other activities
(b) often has difficulty sustaining attention in tasks or play activities
(c) often does not seem to listen when spoken to directly
(d) often does not follow through on instructions and fails to finish schoolwork, chores, or duties in the workplace
(not due to oppositional behavior or failure to understand instructions)
(e) often has difficulty organizing tasks and activities
(f) often avoids, dislikes, or is reluctant to engage in tasks that require sustained mental effort (such as schoolwork or homework)
(g) often loses things necessary for tasks or activities (e.g., toys, school assignments, pencils, books, or tools)
(h) is often easily distracted by extraneous stimuli
(i) is often forgetful in daily activities

(2) Six (or more) of the following symptoms of hyperactivity/impulsivity have persisted for at least 6 months to a degree that is maladaptive and inconsistent with developmental level:

Hyperactivity

(a) often fidgets with hands or feet or squirms in seat
(b) often leaves seat in classroom or in other situations in which remaining seated is expected

(c) often runs about or climbs excessively in situations in which it is inappropriate (in adolescents or adults, may be limited to subjective feelings of restlessness)
(d) often has difficulty playing or engaging in leisure activities quietly
(e) is often "on the go" or often acts as if "driven by a motor"
 (f) often talks excessively
Impulsivity
(g) often blurts out answers before questions have been completed
(h) often has difficulty awaiting turn
(i) often interrupts or intrudes on others (e.g., butts into conversations or games)

B. Some hyperactive-impulsive or inattentive symptoms that caused impairment were present before age 7 years.

C. Some impairment from the symptoms is present in two or more settings [e.g., at school (or work) and at home].

D. There must be clear evidence of clinically significant impairment in social, academic, or occupational functioning.

E. The symptoms do not occur exclusively during the course of a pervasive developmental disorder, schizophrenia, or other psychotic disorder and are not better accounted for by another mental disorder (e.g., mood disorder, anxiety disorder, dissociative disorder, or a personality disorder).

Code based on type:

3l4.01 Attention deficit hyperactivity disorder, combined type: If both criteria AI and A2 are met for the past 6 months
314.00 Attention deficit hyperactivity disorder, predominantly inattentive type: If criterion AI is met but criterion A2 is not met
for the past 6 months
314.01 Attention deficit hyperactivity disorder, predominantly hyperactive-impulsive type: If criterion A2 is met but criterion AI is not met for the past 6 months
Coding note: For individuals (especially adolescents and adults) who currently have symptoms that no longer meet full criteria, In partial remission should be specified.
314.9 Attention deficit hyperactivity disorder not otherwise specified: This category is for disorders with prominent symptoms of inattention or hyperactivity-impulsivity that do not meet criteria for attention deficit hyperactivity disorder.

Causes/ Risk factors for ADHD

Often parents are worried about whether they are responsible for their children to have this type of a problem. At present most evidence suggest that the core reason for ADHD remain in the realms of neurobiology and genetics. However social factors and child rearing methods may have influence on the severity of impairment and suffering the child may experience. But such factors like parenting styles may not themselves give rise to the conditions by themselves. Knowing the fact that ADHD may not stem from home environment but from biological causes can remove huge burden of guilt from

parents. Some of the factors that have been shown to be associated with the ADHD includes the following:

- Use of cigarettes and alcohol during pregnancy
- Chronic lead poisoning of children
- Genetic factors. 25 % of the close relatives of the ADHD also have ADHD (5 % in normal population)
- ADHD children on average shows 3-4% smaller brain volumes (Frontal lobes, temporal gray matter , caudate nucleus, and cerebellum

An **ADHD-like behavior** can be seen in children with the following problems :

- A sudden change in the child's life—the death of a parent or grandparent; parents' divorce; a parent's job loss
- Undetected seizures, such as in petit mal or temporal lobe seizures
- A middle ear infection that causes intermittent hearing problems
- Vision problems
- Medical disorders that may affect brain functioning
- Underachievement caused by learning disability
- Anxiety or depression.
- Other co morbidities; tourrette disorder, autism
- Bipolar disorder

Some of the other disorders also known to accompany ADHD

- Learning disabilities
  Many children with ADHD (20-30 %) also have a specific learning disability. Among preschool children, these disabilities include difficulty in understanding certain sounds or words and/or difficulty in expressing oneself in words. In school age children, reading or spelling disabilities, writing disorders and arithmetic disorders may appear. A type of reading disorder, *dyslexia*, is quite widespread. Reading disabilities affect up to 8 percent of elementary school children.
- Tourrette syndrome
   A very small proportion of ADHD children have a neurological disorder called Tourette syndrome. Tourette syndrome is characterized by various nervous tics and repetitive mannerisms, such as eye blinks, or facial twitches or grimacing. Others may clear their throats frequently, snort, sniff, or bark out words. These behaviors can be controlled with medication. While very few children have this syndrome, many of the cases of Tourette syndrome have associated ADHD. In such cases, both disorders often require treatment that may include medications.
- Oppositional defiant disorder
  About 1one-third to one-half of all children with ADHD, mostly boys, have another condition, known as oppositional defiant disorder (ODD). These children are often defiant, stubborn, and noncompliant, have outbursts of temper, or become belligerent. They argue with adults and refuse to obey.
- Conduct disorder
  Nearly 20 to 40 percent of ADHD children may eventually develop conduct disorder (CD), a more serious pattern of antisocial behavior. These children frequently lie or steal, fight with or bully others, and are at a real risk of getting into trouble at school or with the police. They violate the basic rights of other people, are aggressive toward people and/or animals, destroy property, break into people's homes, commit thefts, carry or use weapons, or engage in vandalism. These children or teens are at greater risk for substance use experimentation, and later dependence and abuse. They need immediate help.
- Anxiety and depression
  Some children with ADHD often have co-occurring anxiety or depression. If the anxiety

Or depression is recognized and treated, the child will be better able to handle the problems that accompany ADHD. Vice versa, effective treatment of ADHD can have a positive impact on anxiety as the child is better able to master academic tasks

- Bipolar disorder
  When co exists differentiation between ADHD and Bipolar signs may be difficult. In its classic form, bipolar disorder is characterized by mood cycling between periods of intense highs and lows. But in children, bipolar often seems to be a rather chronic mood dysregulation with a mixture of elation, depression, and irritability. Furthermore, there are some symptoms that can be present both in ADHD and bipolar disorder, such as a high level of energy and a reduced need for sleep. Of the symptoms differentiating children with ADHD from those with bipolar disorder, elated mood and grandiosity of the bipolar child are distinguishing characteristics

In addition a large number of emotional and behavioural disorders in childhood are identified in ICD 10 classification. The following list outlines the names and codes of these conditions.

F90 - Hyperkinetic disorders

a. F90.0 Disturbance of activity and attention
b. F90.1 Hyperkinetic conduct disorder
c. F90.8 Other hyperkinetic disorders
d. F90.9 Hyperkinetic disorder, unspecified

F91 - Conduct disorders

a. F91.0 Conduct disorder confined to the family context
b. F91.1 Un-socialized conduct disorder
c. F91.2 Socialized conduct disorder
d. F91.3 Oppositional defiant disorder
e. F91.8 Other conduct disorders
f. F91.9 Conduct disorder, unspecified

F92 - Mixed disorders of conduct and emotions

a. F92.0 Depressive conduct disorder
b. F92.8 Other mixed disorders of conduct and emotions
c. F92.9 Mixed disorder of conduct and emotions, unspecified

F93 - Emotional disorders with onset specific to childhood

a. F93.0 Separation anxiety disorder of childhood
b. F93.1 Phobic anxiety disorder of childhood
c. F93.2 Social anxiety disorder of childhood
d. F93.3 Sibling rivalry disorder
e. F93.8 Other childhood emotional disorders
f. F93.9 Childhood emotional disorder, unspecified

F94 - Disorders of social functioning with onset specific to childhood and adolescence

a. F94.0 Elective mutism
b. F94.1 Reactive attachment disorder of childhood
c. F94.2 Disinhibited attachment disorder of childhood
d. F94.8 Other childhood disorders of social functioning
e. F94.9 Childhood disorder of social functioning, unspecified

F95 - Tic disorders

a. F95.0 Transient tic disorder
b. F95.1 Chronic motor or vocal tic disorder
c. F95.2 Combined vocal and multiple motor tic disorder [de la Tourette's syndrome]
d. F95.8 Other tic disorders
e. F95.9 Tic disorder, unspecified

F98 - Other behavioural and emotional disorders with onset usually occurring in childhood and adolescence

a. F98.0 Nonorganic enuresis
b. F98.1 Nonorganic encopresis
c. F98.2 Feeding disorder of infancy and childhood
d. F98.3 Pica of infancy and childhood
e. F98.4 Stereotyped movement disorders
f. F98.5 Stuttering [stammering]
g. F98.6 Cluttering
h. F98.8Other specified behavioural and emotional disorders with onset usually occurring in childhood and adolescence
i. F98.9Unspecified behavioural and emotional disorders with onset usually occurring in childhood and adolescence

Exercise: Answer the following questions:

I. What are the core symptoms of ADHD?
....
....
....
....

II. List the common characteristics of two major types of ADHD
....
....
....
....

III. What are the early warning signs of infants who will develop ADHD?
....
....
....
....

IV. What may be the common causes of ADHD?
....
....
....
....

V. What are the common co morbid illnesses of ADHD ?

....

....

....

....

3.1.3. Learnning activity three: Video presentation
Now you can enjoy a *video presentation* on ADHD

3.2   Trainning session two- Identification of children with ADHD

Methods	Plenary, Reading exercise , practical session group work
Duration	75 Minutes

Training Instructions

3.2.1. Learnning activity one: Plenary presentation & reading exercise
Your facilitator will make a plenary presentation on the protocols used to identify children with behavioural and emotional disorders with onset usually occurring in childhood and adolescence. You may clarify any queries during the session.

3.2.2. Learnning activity two : Reading exercise
Read the following section.

Definitive identification of children with ADHD should not be done before 3 years of age. However, there are early warning signs that could be elicited by parents and teachers. Often these characteristics are considered for normative childhood behaviors. Figure 4 presents the screening protocol that will be used in the national special need programme.

It is aimed to screen all children for behavioral and emotional disorders around 3 to 5 years.   The screening will primarily be conducted in preschools. The screening of children who are not attending preschools will be carried out at home by PHM. Those who could not be screened will be screened at the primary grade.

The **SNAP** (Parent and Teachers) questionnaire (local adaptation) will be used to screen children at preschools. The children who are shown to have problems after screening will be referred to the PCGC. In the PCGC the MOH will further assess those using ICD 10 clinical diagnostic criteria. The SNAP can identify problem related to attention, conduct, emotional, peer relation, and pro social behaviors. Once problem children are identified they are supposed to be referred to SCGC. The expert team at SCGC will confirm the diagnosis, detect other related problems and prepare the management plan. Then they will be referred back to the PCGC.

At PCGC the MOH and team will implement management instructions given by SCGC, empower parents, and teachers to manage the children with ADHD. The PHMs will ensure the follow up of the management of these children in the community.

Figure 4: Screening protocol for children for behavioral and emotional disorders with onset usually occurring in childhood and adolescence
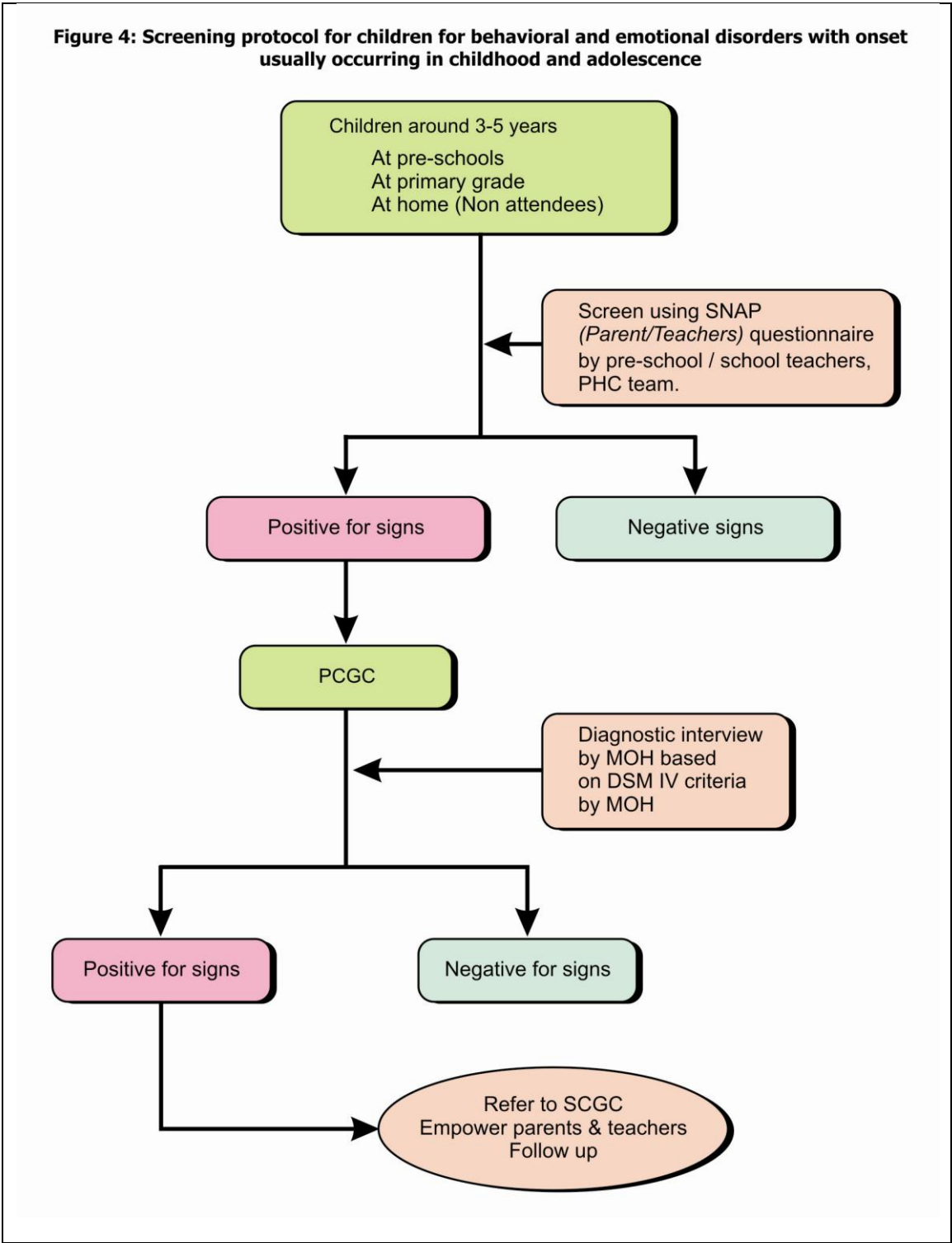
3.2.3   Learnning activity three: group work

Please divide in to 3 groups. Each group will receive one of 3 checklists (SNAP rating scales, ICD 10 criteria for ADHD/ODD/CD, DSM IV criteria for ADHD/ODD/CD). Study the lists and conduct role plays to practice the use of these checklists.

3.3 Training session three: Management of children with ADHD

Methods	Reading exercise , group exercise , role plays
Duration	60 Minutes

3.3.1. Learnning activity one: Reading exercise

Management of children with ADHD

Any management plan should recognize that ADHD is a chronic condition. Arrangements should be made to support the child, parents and other care takers such as teachers on long term basis.

There are two main treatment modalities for ADHD. These include stimulant medication and/or behavioral therapy. Irrespective of combination of therapy, the treatment should be aimed to achieve stipulated target outcomes for individual child. These target outcomes should be formulated to overcome specific behavioral and emotional deficits of the child.

Studies indicate positive impacts of both types of interventions while stimulant medications showing relatively better efficacy.

Stimulant medication

Stimulant medication is proven to improve core symptoms of ADHD (attention deficit, hyperactivity and impulsivity) and function in number of domains. These domains includes child's ability to follow rules, decreased emotional overactivity that improves relationships with peers and parents leading to observable positive social and classroom behaviors. In addition modest effects on intelligence and achievements tests were also observed.

The most recommended stimulant medications include; Methylphenidate (short-, intermediate-, and long-acting) and Dextroamphetamine (short-, intermediate-, and long- acting). Studies indicate more or less similar efficacies in both drugs. However, there may be individual differences in the effect of treatment in different children. Therefore when there is no response seen to one treatment the other should be tried. Use of these stimulants does not require no serologic, hematologic, electro cardiologic monitoring.

In addition to stimulant drugs tri-cyclic antidepressants also used for the regalement for ADHD. Clinical trials indicate that stimulant use is slightly better than the use of tri-cyclic anti depressants. Failure of stimulant drugs indicates the use of tri-cyclic antidepressants.

The following table presents the required doses of the above drugs.

Table 01: Medications used in ADHD and their recommended dosage schedules

Brand Name	Daily Dosage Schedule
Stimulants (First – Line treatment) Methylphenidate	
Short acting (Ritalin,Metadate,Methylin)	5 – 20mg twice a day to 3 times a day
Intermediate – acting (Ritalin SR, Metadate ER, Methylin ER)	20 – 40 mg once a day or 40mg in the morning and 20mg early afternoon
Extended Release (Concerta, Metadate CD, Ritalin LA*)	18 – 72 mg once a day
Stimulants (First – Line treatment) Amphetamine	
Short –Acting (Dexedrine, Dextrostat)	5 – 15mg twice a day or 5 – 10mg 3 times a day
Intermediate – Acting (Adderall,Dexedrine spansule)	5 – 30mg Once a day or 5 – 15mg twice a day
Extended Release (Adderall – XR*)	10 – 30 mg once a day
Antidepressants (Second – Line Treatment)	
Tricyclics (TCAs) Imipramine, Desipramine	2 – 5 mg/kg/day+
Bupropin (Wellbutrin) (Wellbutrin SR)	50 – 100 mg 3 times a day 100-150 mg twice a day

* - Not FDA approved at a time of publication; + - Prescribing and monitoring information in   Physicians' Desk Reference

It is important to notice that the dosages of stimulant drugs are not weight dependant. The treatment should be started with lower dosage margins and titrated upwards until the child shows response. The minimum dosage at which the response is seen may not be the best dosage level. The clinician should continue to raise the dose to achieve the better responses. The titration is stopped when side effects

appear or no further improvement of symptoms. The best dose for the given child is the one that produces optimal effects with minimal side effects.

The most common side effects of the stimulant medication includes, decreased appetite, stomachache, headache, delayed sleep onset, jitteriness or social withdrawal. 15 to 30 % of children will develop motor tics, most of which are transient while on stimulant medications.

Methylphenidate is contra indicated in children with seizure disorders, a history of seizure disorder, or abnormal encephalograms. Children receive high doses or overly sensitive may become over focused, dull or overly restricted which can be addressed by lowering the dose. Psychotic reactions, mood disturbances or hallucinations are rarely reported with the use of high doses of methylphenidate.

Behaviour therapy

Behavior therapy constitutes a range of interventions that aims to modify *physical and social environment* to alter or change the behavior. These may include variety of changes in child's home, school and environment including more structure, closer attention, and limitation of distractions. Usually these interventions are directed through parents and teachers after training them on how to do it.

Behaviour therapy involves, providing rewards for demonstrating the desired behaviour (eg. positive reinforcement) or consequences for failure to meet the goals (eg. punishment). Repetitive application of rewards and punishments gradually shapes the behaviour. The following table shows effective techniques for managing ADHD. These techniques are usually combined into a comprehensive programme aimed to achieve a set of targets developed for a particular child.

Table 02: Effective behavioral techniques for children with ADHD

Technique	Description	Example
Positive reinforcement	Providing rewards or privileges contingent on the child's performance.	Child completes an assignment and is permitted to play on the computer.
Time - out	Removing access to positive reinforcement contingent on performance of unwanted or problem behavior.	Child hits sibling impulsively and is required to sit for 5 minutes in the corner of the room
Response cost	Withdrawing rewards or privileges contingent on the performance of unwanted or problem behavior	Child loses free time privileges for not completing home work
Token economy	Combining positive reinforcement and response cost. The child earns rewards and privileges contingent on	Child earns stars for completing assignments and loses stars for getting out of seat. The child cashes in the

	performing desired behaviors and loses the rewards and privileges based on undesirable behavior.	sum of stars at the end of the week for a prize.

In addition to use among selected children some of the above interventions could be integrated in to routine class room environment in general as well. For example, increasing structure of activities. Introduction of systematic reward and consequences system.

Selection of targets for children with ADHD

It is important to understand that above discussed treatment modalities are used to achieve specific target outcomes for individual child depending on his or her level of dysfunction. The treating clinician, parents, and the child in collaboration with school teachers should specify appropriate target outcome to be achieved using treatment. The symptoms of ADHD result in multiple areas of dysfunction relating to child's performance in home, school, and community. Therefore, targets will be set to maximize these child's functions and treatment, stimulant, and /or behaviour therapy are used to reach these targets. Target outcome should be determined according to the key symptoms, the child manifests and the specific impairments these symptoms cause. Some examples of targets are as follows.

- To improve the relationships with parents, siblings, , teachers, and peers
- To decrease disruptive behaviors
- To improve academic performance, particularly in volume of work, efficiency, completion, and accuracy
- To increase independence in self care or homework
- To improve self esteem
- To enhance safety in community, such as in crossing streets, or riding bicycles.

Health education

ADHD is a chronic condition. Hence, providing information for those who are involved (parents, child, teachers etc…) is an important management task. Updating and monitoring the family knowledge and their understanding on a periodic basis and counseling about family responses to the condition should be arranged. The child should be educated about his or her condition in developmentally appropriate level and be updated periodically. The teachers should also be educated on child's condition and how to help in the management.

Follow up

The clinician should periodically provide a systematic follow up for children with ADHD. Monitoring should be directed to target outcomes and adverse effects by obtaining specific information from parents, teachers, and the child. When those targets are not met, the clinician should evaluate the use of all appropriate treatments, adherence to treatment plan, original diagnosis, and presence of coexisting conditions.

3.3.2. Learnning activity two: Role play

Divide in to 4 groups. Each group will receive a copy of case studies. Discuss the cases. Conduct role plays. Pay special attention towards educating and informing parents and joint development of behavioral schedules.

CASE STUDY - 01

Sean was a 5 years old boy who was referred for evaluation when his kindergarten found that he was unable to stay on any tasks and he would run around the room disrupting the other children. Sean was also oppositional with the teacher and unable to sit on his seat, although he was good – natured and rarely had a physical quarrel with a peer. Sean was an athletic and active child who appeared to be below most of his classmates in his ability to recognize letters, numbers, and shapes. Although his teacher felt that Sean was rejected by his peers occasionally due to his impulsive nature, Sean felt that nobody liked him. At home, Sean was much more active than his two sisters and his siblings often gave in to him in order to be left alone. He was the middle child with one sister 2 years older and the other sister 1 year younger.

Sean's mother reported that in the third month of her pregnancy with Sean, she had had some bleeding, but otherwise there were no complication. Sean was a full – term baby who seemed robust and went home from the hospital without problems. He was healthy throughout the neonatal period but had been a poor sleeper, never sleeping more than 4 hours without waking. He was usually awake between 5 and 6 O'clock in the morning, and he was just not tired. In preschool Sean was reported to be one of the most active and impulsive children, but his teacher had taken a liking to him, and she gave him a lot of one-to-one attention to keep him under control. In spite of the extra attention, Sean seemed to be a little slower than his classmates in learning new words and his overall use of language. On intellectual testing, Sean had a full-scale intelligence quotient (IQ) of 105 with slightly higher performance than verbal score. Sean was referred for a psychiatric evaluation with a child psychiatrist who made the text revision of the fourth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-IV- TR) diagnoses of ADHD combined type; oppositional –defiant disorder and reading disorder. It was also noted that Sean seemed to be "down on himself 'and felt socially rejected. The initial treatment plan for Sean included a trial of methylphenidate (Concerta), 18mg per day, and a therapeutic social skills group, along with a parent –training component for his parents. On medication, Sean's teacher reported significant improvement in remaining on –task and a diminished activity level.

Over time, Sean sustained his good response to the Concerta with minimal side effects that included a decreased appetite at lunchtime, but increased hunger in the evening. he was unable to benefit from the practice that he had during his social skills group, and within 2 months, he was unable to make friend from school who came to his house to play. Finally Sean's family gained competence in managing his oppositional behaviors and impulsivity by instituting a reward system for listening to them. Sean was able to follow his teacher's instructions and mastered the expected kindergarten curriculum and was recommended for a regular education class for the first grade.

CASE STUDY - 02

Robert, age 7 presented to the consultation –liaison team. He suffered from leukemia and was extremely difficult to manage. He would refuse all necessary blood work and repeatedly ran away from the clinic when asked to cooperate with requests for X – rays, blood tests and so forth. He was sullen, argumentative, and irritable. The behavior was unchanged when his mother was used as a "filter' for the demands. He was

chronically cranky child, although his illness was in remission and he was mostly medication free at the time of consultation. His care was severely compromised. At home, his behavior was very similar and had been so for several months. He urged continuously with his single mother about any kind of request, such as cleaning up his room. Prior to his difficulties at the hospital, he began to exhibit similar problems at school. He was suspended for 1 week for being verbally abusive and out of control with his teacher. His mother had been diagnosed with acquired immune deficiency syndrome (AIDS) 2 years ago, having become infected by her drug-abusing husband who had died about 3 years ago from the effects of AIDS. She seemed dysphoric, passive and extremely permissive with the child. She had no additional help because her own mother was also gravely ill, and she had no current social support network. Robert would often scream at his mother at the top of his voice without her evincing   any reaction or making or making any attempt to contain him. Testing showed him to have normal intelligence without symptoms of attention – deficit/hyperactivity disorder (ADHD) or learning disabilities. He knew of his father's death and his mother's illness. His mood remained dysphoric for many weeks when discussing this. He had never exhibited other reactions to being told about the illnesses of his parents. his mother described his early development as unremarkable except for his tendencies to have irregular sleep and eating patterns and his propensity to be cranky. His mother had intermittently taken drugs while pregnant with him, her only child (Courtesy of Hans Steiner, M.D.)

4. APPENDIX 1 – Development package -1 Screening tools

Cognitive Skill Development

Early Cognitive skills

- Provide toys and bright, colorful objects for your baby to look at and touch.
- Let your baby experience different surroundings by taking him or her for walks and visiting new places.
- Allow your baby to explore different textures and sensations (keeping in mind your child's safety)
- Encourage your child to play and explore- banging pots and pans can be a learning experience.

Knowing Concepts

- Use concept wards (big, little, heavy, soft) often in daily conversations. Concept books can be found at your local library.
- Play games that involve naming opposites (hot-cold, up-down, empty-full).
- Compare objects to show opposites (fast-slow, wet-dry).
- Practice sorting shapes and objects in your home by size.
- Compare objects in your home for length (short or long; long, longer, longest).
- Melt ice to show the concept of liquid and solid.
- Have your child move (fast-slow, lightly-heavily, forwards-backwards).
- Weigh objects on your home scales to see if they are heavy or light.
- Discuss objects by use (shovel-outside, plate-inside).
- Discuss objects by where they may be found (land, sea, sky; library, home, school, store).

Building Memory Skills

- Review the events of the day with your child at bedtime.
- Repeat a simple nursery rhyme daily until your child can say it with you.
- Ask your child what he or she did yesterday.
- Show your child four objects on a tray; cover the tray and remove one object; uncover the tray and ask what is missing.
- Play a concentration game with cards. Pick five sets of matching cards and turn them face down. Try to turn up two cards that match. Increase the number of cards when the child is ready.
- Read predictable books and have your child tell the story back to you.

Developing Critical Thinking Skills

- Whenever possible, ask questions that have many answers.
- Set up choices that involve your child in making decisions.
- Lead your child to discover other ways of performing a task.
- Ask your child's opinions about things and then ask them why they think that way.

Language Skill Development

Birth to 2 Years

- Maintain eye contact and talk to your baby using different patterns and emphasis. For example, raise the pitch of your voice to indicate a question.
- Imitate your baby's laughter and facial expressions.
- Teach your baby to imitate your actions, including clapping your hands, throwing kisses, and playing finger games such as pat-a-cake, peek-a-boo, and the itsy-bitsy-spider.
- Talk as you bathe, feed, and dress your baby. Talk about what you are doing, where you are going, what you will do when you arrive, and who and what you will see.
- Sing to your baby, including lullabies and lively children's songs with rhymes.
- Identify colors.
- Count items while your child watches.
- Use gestures such as waving goodbye to help convey meaning.
- Introduce animal sounds to associate a sound with a specific meaning: "The doggie says woof-woof."
- Acknowledge attempts to communicate.
- Expand on single words your baby uses: "Here is Mama. Mama loves you. Where is the baby? Here is the baby."
- Encourage your baby to make vowel-like sounds and consonant-vowel sounds such as "ma," "da," and "ba."
- Read to your child. Sometimes "reading" is simply describing the pictures in a book without following the written words. Choose books that are sturdy and have large colorful pictures that are not too detailed.
- Ask your child "what is this?" and encourage naming and pointing to familiar objects in a book.

2 to 4 Years

- Use speech that is clear and simple for your child to copy.
- Repeat what your child says, indicating that you understand. Build and expand on what is said: "Want juice? I have juice. I have apple juice. Do you wand apple juice?"
- Make a scrapbook of favorite or familiar things by cutting out pictures. Group them into categories such as things to ride on, things to eat, things for dessert, fruits, and things to play with.
- Create silly pictures by mixing and matching pictures. Glue a picture of a dog behind the wheel of a car. Talk about what is wrong with the picture and ways to "fix" it.
- Help the child count items pictured in a book.
- Help your child understand and ask questions. Play the yes-no game by asking questions: "Are you a boy?" "Can a pig fly?" Encourage your child to make up questions and try to fool you.
- Ask questions that require a choice: "Do you want an apple or an orange?" "Do you want to wear your red or blue shirt?"
- Expand vocabulary. Name body parts, and identify what you do with them: "This is my nose. I can smell flowers, brownies, popcorn, and soap."
- Sing simple songs and recite nursery rhymes to show the rhythm and pattern of speech.
- Place familiar objects in a container. Have your child remove the object and tell you what it is called and how to use it: "This is my ball. I bounce it. I play with it."
- Use photographs of familiar people and places, and retell what happened or make up a new story.

Fine Motor Skill Development

- Have the child roll modeling clay into big balls using the palms of the hands facing each other and with fingers curled slightly towards the palm or roll clay into tiny balls (peas) using only the fingertips.
- Have the child use pegs or toothpicks to make designs in modeling clay.
- Make a pile of objects such as cereal, small marshmallows, or pennies. Give the child a set of large tweezers and have him or her move the objects one by one to a different pile.
- Show the child how to lace or thread objects such as beads, cereal, or macaroni onto string.
- Play games with the "puppet fingers"-the thumb, index, and middle fingers.
- Use a flashlight against the ceiling. Have the child lie on his or her back or tummy and visually follow the moving light.

Gross Motor Skill Development

- Place your baby in different positions to encourage kicking, stretching, and head movement.
- Arrange outdoor and indoor play spaces for gross motor activities.
- Activities to promote gross motor development include climbing jungle gyms, going up and down a slide, kicking and throwing a ball, and playing catch.
- Objects to push, pull, jump off, and jump over, and toys the child can ride on also promote gross motor development.
- Indoors, there are several safe toys for gross motor play such as large boxes to push, pull, crawl through, and sit in; large pillows to jump on; and safe objects to practice throwing and catching.

Social-Emotional Skill Development

- Lean in close to your baby and talk about his or her sparkly eyes, round cheeks, or big smile. Keep your face animated and your voice lively as you slowly move from right to left in order to capture your baby's attention.
- While sitting with your child in a rocking chair or during quiet times when the baby is lying on his or her back, soothingly touch your baby by stroking his or her arms, legs, tummy, back, feet, and hands to help the child relax.
- Entice your baby into breaking into a big smile or other pleased facial expression. Use lively words and/or funny actions to get your child respond happily.
- Create a problem involving your child's favorite toy that he or she needs your help to solve. For example, place the toy on a shelf just out of child's reach, or place a rattle or noisy toy inside a small box that is difficult to open.
- Start by copying your child's sounds and gestures and slowly entice him or her to begin copying your facial expressions, sounds, and movements.

Adaptive Behavior Skill Development

- Allow your child to make simple decisions: "Do you want to play inside or outside?"
- Let your child attempt to complete a task by himself or herself, such as dressing in the morning.
- Try to have consistent rules for hygiene and cleanliness (wash hands before meals; brush teeth after eating; put away toys before going outside to play).
- Let preschool-age children help with completing simple chores around the house.

5. APPENDIX 2 –Screening Questionnaires

M-CHAT

Please fill out the following about how your child **usually** is. Please try to answer every question. If the behavior is rare (e.g., you've seen it once or twice), please answer as if the child does not do it.

Tfí orejdf.a iddudkH yeisÍu ms<snoj my; ioyka m%Yak j,g ms<s;+re imhkak' iEu m%Yakhlgu ms<s;+re oSug W;aidy Irkak' orejd tu yeisÍu I,d;+rlska isÿ Irhs kï ^Wod(Tn oel we;af;a jrla fyda fojrla kï& orejd Mu I%shdj fkdlrk f,ig i,lak&

Item	Translation
1. Does your child enjoy being swung, bounced on your knee, etc.? Yes / No	Tn Tfí orejd fomd u; ;nd TxÑ,s moaok úg" Wv ouk úg orejd Tnf.a uqyqK foi n,d lE .iñka iskdfiñka thg m%;spdr olajkjdo fyda tuÕska orejd i;=gla ,nk nj Tng wÕjdo@ Tõ$ ke;
2. Does your child take an interest in other children? Yes / No	Tfí orejd fjk;a orejkag leue;a,la olajkjdo@ ^Tjqka iuÕ tl;= ùug" Tjqka we,a,Sug W;aidy Irjdo& Tõ$ ke;
3. Does your child like climbing on things, such as up-stairs? Yes / No	Tfí orejd mä fm<j,a jeks Wia ia:dkj,g keÕSug leu;so@ Tõ$ ke;
4. Does your child enjoy playing peek-a-boo/hide-and-seek? Yes / No	Tfí orejd yex.suq;a;ka jeks ieÕù Irk fi,a,ï ^uqyqK jid kej; wßñka Irk I%Svd& Irñka i;=gla ,nkjdo@ Tõ$ ke;
5. Does your child ever pretend, for example, to talk on the phone or take care of dolls, or pretend other things? Yes / No	Tfí orejd flÈkl fyda fi,a,ï lsÍfï§ ienE wjia:djla ksrEmKh jk mßÈ l%shdldr ;sfío@ ^Wodyrk (fndakslalka ke,ùfï§ ks;ru Tjqka yd l;d Irñka" isxÿ lshñka ienE orejka k<jk wjia:djla yefÕk mßÈ Tjqka k,jkjdo& Tõ$ ke;
6. Does your child ever use his/her index finger to point, to ask for something? Yes / No	Tfí orejd flÈkl fyda Tyqf.a$wehf.a onr weÕs,a, È.= lr Tyq$weh wdYd Irk fohla b,a,d isákjdo@ Tõ$ ke;
7. Does your child ever use his/her index finger to point, to indicate interest in something? Yes / No	Tfí orejd flÈkl fyda Tyqf.a$wehf.a onr weÕs,a, È.= lrñka Tyq$weh leu;s foaj,a fmkajkjdo@ Tõ$ ke;
8. Can your child play properly with small toys (e.g. cars or bricks) without just mouthing, fiddling, or dropping them? Yes / No	Tfí orejdg l=vd fi,a,ï nvq iuÕ ksis mßÈ fi,a,ï Irsug yelso@ ^Wodyrk (l=vd ld¾" odf leg jeks tajd IfÜ fkdoud$ iu fkdoud fi,a,ï Irsug yelso& Tõ$ ke;
9. Does your child ever bring objects over to you (parent) to show you something? Yes / No	Tfí orejd flÈkl fyda Tng fmkaùug hï hï foaj,a wrf.k tkjdo@ Tõ$ ke;
10. Does your child look you in the eye for more	Tfí orejd Tfí weia foi ;;amrhlg follg jvd jeä fõ,djla n,d isákjdo@

	than a second or two? Yes / No	Tõ$ ke;
11.	Does your child ever seem oversensitive to noise? (e.g., plugging ears) Yes / No	Tfí orejd flÈkl fyda Yío j,g ixfõ§ njla fmkajkjdo@ ^iuyr Yío wefik úg lka jid .kakjdo@& Tõ$ ke;
12.	Does your child smile in response to your face or your smile? Yes / No	Tn ÿgq úg fyda Tn iskdiqk úgl Tfí orejd Tn iuÕ iskdfikjdo@ Tõ$ ke;
13.	Does your child imitate you? (e.g., you make a face-will your child imitate it?) Yes / No	Tfí orejd Tn Irk foaj,a kej; Irñka Tnj wkqlrKh Irkjdo@ ^WodyrK (Tn Tfí uqyqK fjkia Irk úg orejd;a tfia Irkjdo@& Tõ$ ke;
14.	Does your child respond to his/her name when you call? Yes / No	Tn Tfí orejdf.a ku lshd l;d Irk úg Tyq thg m%;spdr olajkjdo@ Tõ$ ke;
15.	If you point at a toy across the room, does your child look at it? Yes / No	Tn Tfí orejdg hula fmkajQ úg ^weÕs,a, È.= Irñka& orejd tfoi n,kjdo@ Tõ$ ke;
16.	Does your child walk? Yes / No	Tfí orejd weúÈkjdo@ Tõ$ ke;
17.	Does your child look at things you are looking at? Yes / No	Tn hula foi n,k úg orejd;a ta foi n,kjdo@ Tõ$ ke;
18.	Does your child make unusual finger movements near his/her face? Yes / No	orejd Tyqf.a$wehf.a w; uqyqK wi,g <xlr weÕs,s widudkH f,i fid,jkjdo@ Tõ$ ke;
19.	Does your child try to attract your attention to his/her own activity? Yes / No	orejd Tyqf.a jev j,g Tnf.a wjOdkh fhduq lrjd .ekSug W;aidy Irkjdo@ Tõ$ ke;
20.	Have you ever wondered if your child is deaf? Yes / No	Tfí orejd ìysß hehs Tng ljod fyda is;S ;sfío@ ^Tn lshk fyda wik foaj,a j,g m%;spdr fkdolajk wjia:d ;sîu ksid& Tõ$ ke;
21.	Does your child understand what people say? Yes / No	wka wh mjik foaj,a Tfí orejdg f;arkjdo@ Tõ$ ke;
22.	Does your child sometimes stare at nothing or wander with no purpose? Yes / No	Tfí orejd f;areula ke;sj Tfya n,d isákjdo@ wruqKla ke;sj weúÈkjdo@ Tõ$ ke;
23.	Does your child look at your face to check your reaction when faced with something unfamiliar? Yes / No	orejdg kqyqre fohla ÿgq úg§ ta .ek Tfí m%;spdrh úuiSug Tfí uqyqK n,kjdo@ Tõ$ ke;

M- CHAT scoring instructions

A child fails the checklist when 2 or more critical items are failed OR when any three items are failed. Yes/no answers convert to pass/fail responses. Below are listed the failed responses for each item on the M-CHAT. Bold capitalized items are CRITICAL items. Not all children who fail the checklist will meet criteria for a diagnosis on the autism spectrum. However, children who fail the checklist should be evaluated in more depth by the physician or referred for a developmental evaluation with a specialist.

1. No	6. No	11. Yes	16. No	21. No
2. No	**7. No**	12. No	17. No	22. Yes
3. No	8. No	**13. No**	18. Yes	23. No
4. No	**9. No**	**14. No**	19. No	
5. No	10. No	**15. No**	20. Yes	

M – CHAT m%Yakdj,sfha <l=Kq ,nd §fï Wmfoia

fuu m%Yakdj,sfha ´kEu m%Yak 3 lg fyda ;SrKd;aul m%Yak 2lg $ jeä .Kklg wiu;a m%;s;spdr oelaùfuka orejd M – CHAT mĺlaId m%Yakdj,sh

wiu;a jQjl= njg m;afõ Tõ$ke; hk ms<s;=re iu;a/ wiu;a njg olajhs M – CHAT m%Yakdj,sfha tla tla m%Yakh i|yd wiu;a m%;spdr my; oelafõ **;o meyefhka ;SrKd;aul m%Yak olajd we; M – CHAT** m%Yakdj,sh wiu;a ish,a,kau Tgsïÿ frda.S ;;ajh we;s njg fkdi,lk kuq;a Tjqka jevs ÿr we.hSula ^mĺlaIdjdka& i|yd iqÿiq úfYal{jrfhl= fj; fhduq l< hq;=h

1 - ke;	6 - ke;	11 - Tõ	16 - ke;	21 - ke;
2 - ke;	**7 - ke;**	12 - ke;	17 - ke;	22 - Tõ
3 - ke;	8 - ke;	**13 - ke; -**	18 - Tõ	23 - ke;
4 - ke;	**9 - ke;**	**14 - ke;**	19 - ke;	
5 - ke;	10 - ke;	**15 - ke;**	20 - Tõ	