

APPENDIX 1: Development of the senses (adapted from Einon, 1989 p.11)

Age	Vision	Hearing	Smell	Taste	Touch
Birth	<ul style="list-style-type: none"> Baby sees at 25-30 cm Can bring eyes to look at a point. Cannot follow movement very well Sees a mouth, nose or an eye rather than a whole face 	<ul style="list-style-type: none"> Responds to sounds; especially pitch and loudness in human voices Can tell the difference between some sounds Can locate sounds in front of him Will turn roughly in the direction of a sound from either side 	<ul style="list-style-type: none"> Reacts strongly to smell 	<ul style="list-style-type: none"> Can tell salt from sweet and bitter Prefers sweet by one week 	<ul style="list-style-type: none"> Sensitive to touch all over body - hands and mouth especially sensitive Closes hand over anything felt in hand – curls toes in same way Turns head and opens mouth if cheek is touched Senses hot and cold
2 Weeks	<ul style="list-style-type: none"> Can discriminate between colours Sees moving objects more easily than stationary ones 	<ul style="list-style-type: none"> Locates sounds more easily than things seen 	<ul style="list-style-type: none"> Can recognise mother's smell May smell mother's anxiety 	<ul style="list-style-type: none"> Accepts a bottle even if breast-fed 	
6 Weeks	<ul style="list-style-type: none"> Is able to focus at any distance but does not see much detail is 		<ul style="list-style-type: none"> Likes smells we like Turns away from foul smells 		<ul style="list-style-type: none"> May soon begin to enjoy the 'feel' of water and kicking against cot bumper
6 Months	<ul style="list-style-type: none"> Watches hands Sees depth Sees detail more clearly but still short-sighted 	<ul style="list-style-type: none"> Locates sound easily Distinguishes between speech sounds Enjoys making sounds by banging and shouting 		<ul style="list-style-type: none"> Develops individual preferences 	<ul style="list-style-type: none"> Will not automatically close hand over objects Takes things to mouth to explore
8 Months	<ul style="list-style-type: none"> Can look up from what he is doing and back Can follow things that are dropped with hid eyes 	<ul style="list-style-type: none"> May understand a few words May respond to name 		<ul style="list-style-type: none"> Might have clear likes and dislikes 	<ul style="list-style-type: none"> Begins to manipulate objects in hands, by touching and stroking rather than grabbing Lets go by opening hand. Passes things hand to hand
1 Year	<ul style="list-style-type: none"> Looks for things that are hidden 	<ul style="list-style-type: none"> Responds to simple instructions 			<ul style="list-style-type: none"> Will be poking, prodding and pointing by now. Uses hands to explore Deliberately lets go of objects

APPENDIX 2: Cognitive approach: Jean Piaget

Piaget's biologically based theory of cognitive development describes adaptation through assimilation (when the child performs activities that are already in his repertoire) and accommodation (when the child changes his activities in response to environmental demands). Development is described in four major stages: sensorimotor (thought is focused on the world of here and now; see also **Table B**); preoperational (thought is egocentric; perception-dominated; intuitive rather than logical); concrete operational (thought is more logical but tied to real objects and events); and formal operational (thought is potentially logical: hypothetical, idealistic reasoning). **Table A** (adapted from Cunningham, 1993 p.21) gives a description of each of the cognitive developmental stages according to Piaget and Table B gives a description of the first stage, namely sensorimotor development.

Table A: Piaget's stages of cognitive development

Stage	Approximate age	Description
Sensorimotor	Birth to 2 years	The child lacks language and does not use symbols or mental representations of objects in the environment. Simple responses to the environment (through reflexes) draws to an end, and intentional behaviour - such as making interesting sights last - begins.
Preoperational	2 to 7 years	The child begins to represent the world mentally through the use of symbols such as words and drawings, but logical mental actions - called operations - are absent
Concrete operational	7 to 12 years	The child performs logical mental actions when dealing with concrete objects
Formal operational	12 years and older	Mature, adult thought emerges. Thinking is characterised by deductive logic, consideration of various possibilities before acting to solve a problem (mental trial and error), abstract thought (e.g. philosophical weighing of moral principles), and the formation and testing of hypotheses

Table B: Jean Piaget's stages of sensorimotor development

Approximate age (in months)	Stage	Description
0-1	I. Reflexes	Exercising innate motor patterns, such as sucking and crying
1-4	II. Primary circular reactions	Repetition of behaviour patterns that have been associated accidentally with interesting results using the baby's own body
4-8	III. Secondary circular reactions	Beginning separation of means from ends, attention shifting from own body to object, purposeful action, coordination of sensory modalities, brief search behaviour
8-12	IV. Coordination of secondary circular reactions	Further separation of means from ends, intentional behaviour, interest in qualities of objects, exploration, search for hidden objects, anticipation of events, tool use
12-18	V. Tertiary circular reactions	Back-and-forth exchanges with environment, variations of means to produce desired ends, active experimentation to produce novel effects, systematic search for hidden objects, complex imitation
18-24	VI. Invention of new means	Internalised thought and mental problem solving, symbolic representation, language, symbolic play, deferred imitation

Source: Adapted from Fogel (1984 p300).

APPENDIX 3: Psychoanalytic approaches: Freud and Erikson

Freud's theory assumes that among the important causes of behaviour are deep-seated, unconscious forces that can be discovered through dream analysis, hypnosis, free association and the analysis of childhood experiences. Chief among these forces are sexual urges (libido), which define the first level of personality, the *id*. The second level is the *ego* (reality-based and typically in conflict with the *id*); the third is the *superego* (conscience; social and cultural taboos).

Freud describes five developmental stages (oral, anal, phallic, latency and genital) differentiated from each other in terms of the area of the child's body which is the main source of sexual gratification at that stage.

Erikson's psychosocial theory of child development describes conflict-driven progress through stages that require increasing social competence (*trust versus mistrust, autonomy versus shame and doubt, initiative versus guilt, industry versus inferiority and identity versus identity diffusion*).

Freud hypothesises that five stages of psychosexual development during childhood and adolescence exist. Erikson focusses more on social relationships and he therefore speaks of psychosocial development. Erikson adds three more stages to Freud's five to include development into adulthood (see **Table C**).

Table C: Freud's Psychosexual and Erikson's Psychosocial stages compared

Age	Freud's Psychosexual stages	Erikson's Psychosocial stages
Birth to 1 year	Oral stage Satisfaction centres on oral activities such as sucking	Trust vs. Mistrust Comes to trust caregivers, or fails to do so if caregivers are neglectful or rejecting
1-3 years	Anal stage Satisfaction centres on elimination activities	Autonomy vs. Shame and Doubt Develops control over body functions and motor activities, or doubts his ability to develop control if shamed or humiliated
3-6 years	Phallic stage Satisfaction centres on genital area. Oedipal and Electra complexes emerge and are resolved	Initiative vs. Guilt Begins to develop independence from parents and initiate behaviours, or experiences guilt if punished for overstepping boundaries
6-12 years	Latency stage Suppression of sexual urges and development of social skills	Industry vs. Inferiority Masters tasks and feels competent, or fails to do so and feels inferior
Adolescence	Genital stage Reappearance of sexuality in more mature form	Identity vs. Identity Diffusion Forms a sense of self, including occupational and gender roles, or feels confused about who he is
Young adulthood		Intimacy vs. Isolation Forms intimate ties to others, including a sexual partner, or fails to do so and feels isolated
Middle adulthood		Generativity vs. Stagnation Guides and encourages the younger generation, or becomes self-absorbed and stagnates
Late adulthood		Integrity vs. Despair Accepts his life with satisfaction and dignity, or despairs over life's disappointments

APPENDIX 4: The development of locomotion in babies

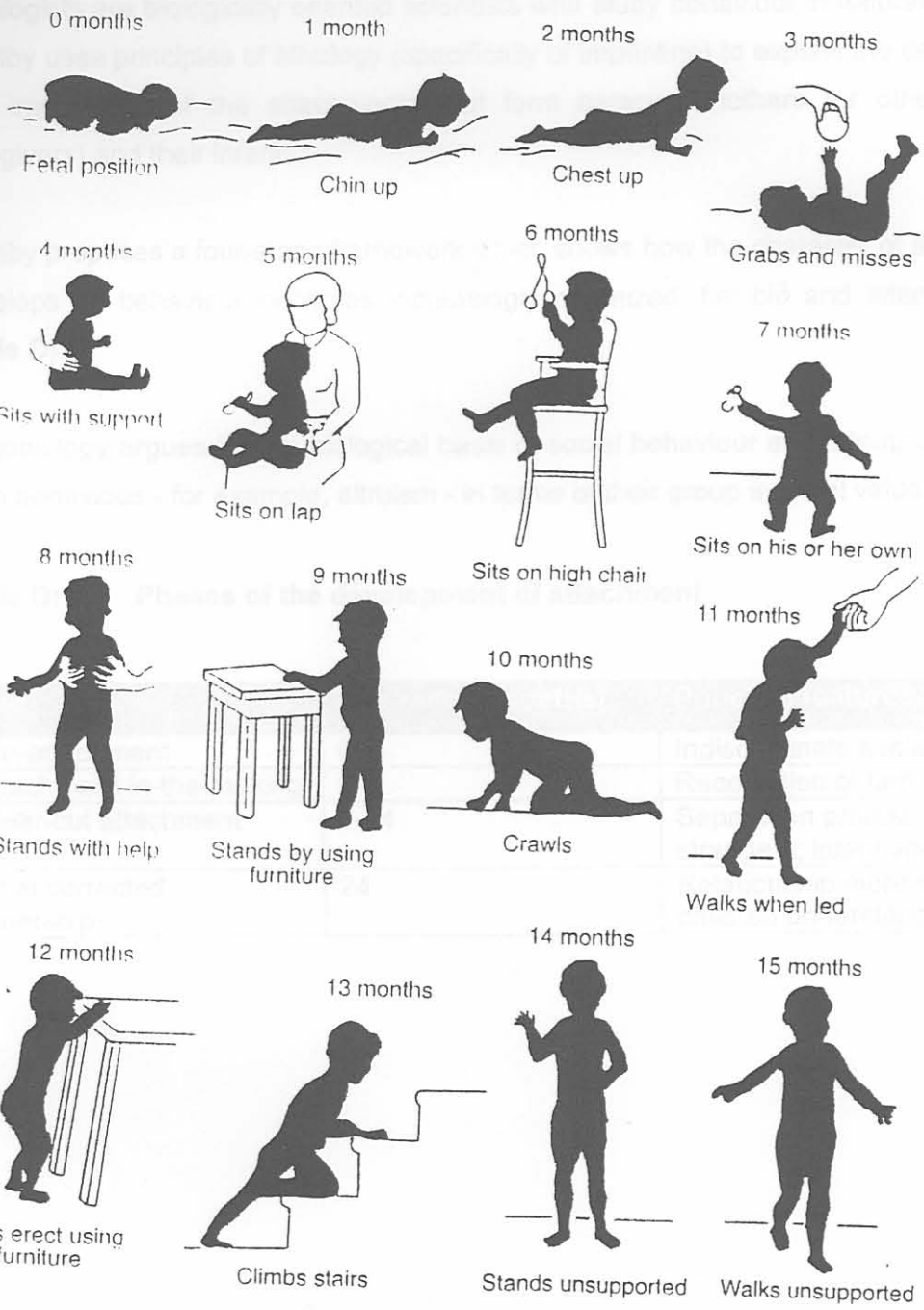
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Biological approaches to development look at the role of biology (heredity) and the ecological approaches emphasise the importance of interaction in changing contexts

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APPENDIX 5: Biological and ecological approaches: Bowlby, Vygotsky and Bronfenbrenner

Biological approaches to development look at the role of biology (heredity) and the ecological approaches emphasise the importance of interaction in changing contexts. Ethologists are biologically oriented scientists who study behaviour in natural situations. Bowlby uses principles of ethology (specifically of imprinting) to explain the development and importance of the attachments that form between mothers (or other principal caregivers) and their infants.

Bowlby proposes a four-stage framework which shows how the character of attachments develops as behaviour becomes increasingly organized, flexible and intentional (see **Table D**).

Sociobiology argues for the biological basis of social behaviour and attempts to explain such behaviour - for example, altruism - in terms of their group survival value.

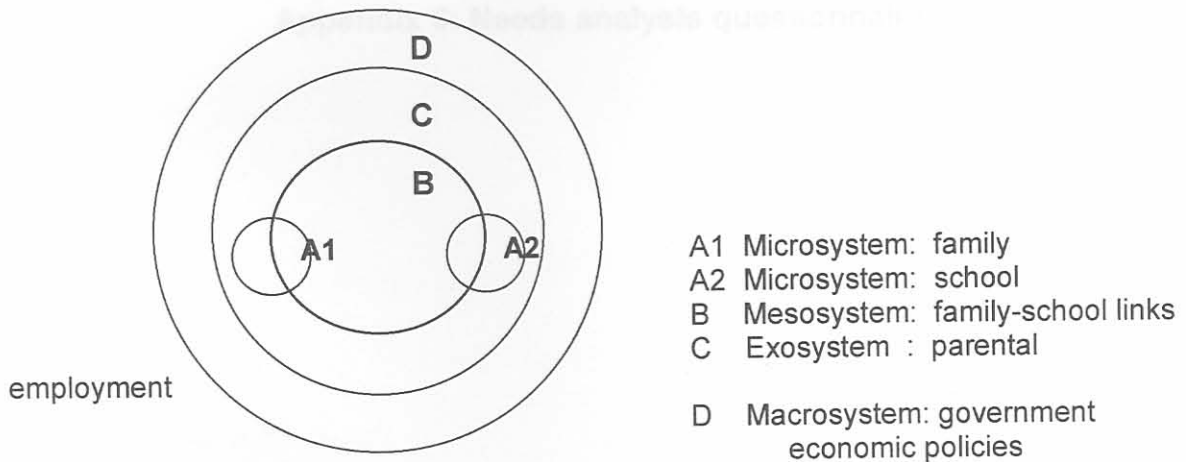
Table D: Phases of the development of attachment

Name	Age range (months)	Principal features
1 Pre-attachment	0-2	Indiscriminate social responsiveness
2 Attachment-in-the-making	2-7	Recognition of familiar people
3 Clear-cut attachment	7-24	Separation protest; wariness of strangers; intentional communication
4. Goal-corrected partnership	24	Relationship more two-sided: children understand parents' needs

Vygotsky's cultural-historical approach emphasises the importance of culture, especially language. The zone of proximal growth, an expression of Vygotsky's belief in the interdependence of development and environment, is a child's potential for development in a given context.

Bronfenbrenner's ecological systems theory looks at the interaction between the growing child and environmental contexts. It describes four levels of context: the microsystem (the child's face-to-face interaction); the mesosystem (interactions among elements of the child's microsystem); the exosystem (interactions between one of the child's microsystems and another context with which the child does not ordinarily interact); and the macrosystem (the totality of all contexts relevant to the child's life).

Figure A: Bronfenbrenner's model of ecological systems



NEEDS ANALYSIS QUESTIONNAIRE

for parents of LBW premature babies

How long is this questionnaire? V1 1-2

How old is the baby's mother? V2 3-4

How old is the baby's father? V3 5-8

Level of education

Level of education	Mother(V4)	Father(V5)
Can not read or write	<input type="checkbox"/> V4	<input type="checkbox"/> V5
Primary schooling	<input type="checkbox"/>	<input type="checkbox"/>
Secondary /tertiary schooling	<input type="checkbox"/>	<input type="checkbox"/>

Appendix 6: Needs analysis questionnaire

What is the gender of your baby? V6 V7

How heavy was your baby's weight at birth? V8 V9

How many weeks was your baby born? V10 V11

How old is your baby now? V12 V13

What is this baby's position in your family? 1/2/3/4/5/6/ V14 V15

Did you have any previous LBW premature babies?

Yes <input type="checkbox"/>	How many? (V13) <input type="checkbox"/>	<input type="checkbox"/> V17 <input type="checkbox"/> 20
No <input type="checkbox"/>		<input type="checkbox"/> V18 <input type="checkbox"/> 21

Did you receive any information or support about LBW premature babies before?

Source	Yes (1)	No (2)	
Family	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> V14 <input type="checkbox"/> 22
Friend	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> V15 <input type="checkbox"/> 23
Clinic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> V16 <input type="checkbox"/> 24
Hospital	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> V17 <input type="checkbox"/> 25
Doctor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> V18 <input type="checkbox"/> 26
Read	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> V19 <input type="checkbox"/> 27
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> V20 <input type="checkbox"/> 28



NEEDS ANALYSIS QUESTIONNAIRE for parents of LBW premature babies

Number of questionnaire

1. How old is the baby's mother? _____ years V1 1-2
 2. How old is the baby's father? _____ years V2 3-4
 3. Level of education V3 5-6

Level of education	Mother(V4)	Father(V5)
Can not read or write		
Primary schooling		
Secondary /tertiary schooling		

V4 7
 V5 8

4. What is your monthly income?

<input type="text"/> < R1500 p.m.	<input type="text"/>
<input type="text"/> R1500-R3000 p.m.	<input type="text"/>
<input type="text"/> > R3000 p.m.	<input type="text"/>

V6 9

5. What is the gender of your baby?

<input type="text"/> Boy	<input type="text"/>
<input type="text"/> Girl	<input type="text"/>

V7 10

6. What was your baby's weight at birth? _____ kg

V8 . 11-14

7. At how many weeks was your baby born? _____ weeks

V9 15-16

8. How old is your baby now? _____ days

V10 17-18

9. What is this baby's position in your family? 1/2/3/4/5/6/___

V11 19

10. Did you have any previous LBW premature babies?

<input type="text"/> Yes	<input type="text"/>	How many?(V13)	<input type="text"/>
<input type="text"/> No	<input type="text"/>		

V12 20

V13 21

11. Did you receive any information or support about LBW premature babies before?

Source	Yes (1)	No (2)
Family		
Friend		
Clinic		
Hospital		
Doctor		
Read		
Other		

V14 22

V15 23

V16 24

V17 25

V18 26

V19 27

V20 28

12. Do you have a need to share your experience or feelings with people that you trust or people that went through a similar situation?

Immediately	Maybe later	No
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V21 29
13. Do you have a need to know more about ways to touch your baby?

Yes	Unsure	No
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V22 30
14. Do you need information on the special needs and care of LBW premature babies?

Yes	Unsure	No
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V23 31
15. Do you know how to stimulate your baby appropriate to his developmental age?

Yes	Unsure	No
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V24 32
16. Would you need information and support to enable you to take this baby home after discharge?

Yes	Unsure	No
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V25 33
17. Do you understand when the doctor or nurses explain to you why your baby is in the NICU?

Always	Sometimes	Never
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V26 34
18. Do you know how to inform your family or children about your baby's situation?

Yes	Unsure	No	Not applicable
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V27 35
19. Do you have a need to gain knowledge and skills on disciplining your children?

Yes	Unsure	No
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V28 36
20. Do you have a need to learn skills to help you solve daily problems more effectively?

Yes	Unsure	No
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V29 37
21. Would you like to know more about routine and ways to establish it?

Yes	Unsure	No
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V30 38
22. Do you have the need to be provided with a list of institutions, professional people, books, videos, and programs which you can use/consult whenever you experience a problem with your baby?

Yes	Unsure	No
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V31 39
23. Would you like to add any other comments, suggestions, or needs?