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Engendering Healthy, Royal Heirs Some Notes on the Rationale behind the 'female' sub-series in *Alamdimmû* and *Sakikkû*

Francesca Minen¹

Introduction

As scholars of Mesopotamian medicine, we came to understand much more of this ancient Near Eastern medical system in the last decades. Individual and collaborative research contributed to deepen our understanding in this difficult but fascinating field. *Le Journal des Médecines Cunéiformes* itself testifies to almost twenty years of research activities, catalyzing attempts at recomposing both individual texts and composite series, providing inedited or revised translations, reconstructing medical theories and practices, as well as discussing methodological approaches. In particular, most recent efforts have been directed towards the publication of the texts collected by Reginald Campbell Thompson (1923) and Franz Köcher (1963-1980). The on-going investigation of these sources have disclosed important aspects pertaining to Babylonian therapy, such as ingredients, their properties, preparation and administration to the patient. As demonstrated by the contributions collected in this issue, crucial aspects need to be further discussed and analyzed.

To the contrary, the Diagnostic Handbook *Sakikkû* has been almost completely edited and reconstructed.² Nonetheless, there are still aspects of this series that still need to be addressed, starting from its relationship with the physiognomic handbook *Alamdimmû*. We may derive crucial information from the *Catalogue of Esagil-kīn-apli*, providing the incipits of the tablets of both reference works and, strikingly enough, a note by Esagil-kīn-apli himself, which is a unicum in the framework of cuneiform sources.³ In fact, it delivers to us the voice of its author, who describes its editorial work on the series, establishes his scholarly authority to do so and provides instructions on the use of both series.⁴ In the light of its contents and significance, previous scholars had difficulties in assessing the nature of such text with a satisfying label: most recently, E. Schmidtchen (2018a-b) adopted the more neutral designation 'editorial note'. Nevertheless, the underlying programmatic intent conferred by the Esagil-kīn-apli himself would justify, in our view, its classification as a proper 'manifesto'.⁵ The final lines of the text read as follows:⁶

'Pay attention! Take care! Do not neglect your knowledge! The one who has not obtained knowledge shall not speak (about) *Sakikkû*, and tell (about) *Alamdimmû*. *Sakikkû* is the compilation concerning disease, depression (and distress), *Alamdimmû* (is about) the features and the (human) shape, the fate of mankind, which Ea and Marduk/Gula (?) established. Regarding both series, their *arrangement* is one. [The exorcists], who makes the decision, who watches over people's lives, who knows *Sakikkû* and *Alamdimmû* in its entirety, shall inspect, check, [ponder], and offer (his) *interpretation* to the king.

This extract is interesting for two reasons. Firstly, Esagil-kīn-apli establishes an affinity between the two scientific disciplines of diagnosis and physiognomy. Secondly, he

⁶ We follow the edition of Schmidtchen 2018a: 147-150, ll. 62-71, including italics.

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² The *editio princeps* of the Diagnostic Handbook *Sakikkû* (Labat 1951) contributed to raise general awareness towards Mesopotamian medicine, while a recent monograph (Heeßel 2000) succeeded in attracting fresh attentions to Assyro-Babylonian diagnostics. A recent updated English translation increased the accessibility towards this almost completely edited work (Scurlock 2014). Worth mentioning are also the most recent monographs of J. Z. Wee on the commentaries of *Sakikkû* from Late Babylonian Uruk (Wee 2019a-b).

³ The text came down to us thanks to the manuscripts ND 4358+ from Nimrud and BM 41237+, possibly from Babylon and edited by Finkel 1988. Schmidtchen (2018a-b) offered a new edition and commentary of the text.

⁴ A detailed analysis of the motifs of the editorial note can be found in Schmidtchen 2018a: 147-150.

⁵ The text has been indicated as 'colophon' by Finkel 1988 (with the related problems discussed by Schmidtchen 2018a: 147-148), 'postscript' by Kinnier Wilson 1956: 136-140, 'manifesto' by Wee 2015: 252-255.

encourages his disciples to ultimately put their knowledge at the service of the king. One may easily understand why *Alamdimmû* and *Sakikkû* may constitute a twin-series: by focusing on the visible signs on healthy and sick bodies respectively, their contents and focus are complementary.

More controversial is the mention of the sovereign and his relationship with the scholars and their knowledge, as exemplified by the different translations proposed by scholars in the past of the ending line *ana* LUGAL ME-*a* ($q\bar{i}ba$) *liš-kun*, which can be translated as "give a prognostication to the king".⁷ According to E. Schmidtchen, "the concluding dedication of the series' use in service of the king should be understood as a political comment rather than a statement about the exclusive use of both series for the king. In any case, it is not unusual that a highly learned scholar such as Esagil-kīn-apli with access to the relevant texts stood in the service of the king and palace"⁸. In fact, as evidenced by Nils P. Heeßel, the king had a crucial role as mediator between deities and humanity. Health and sickness were believed to reflect the state of the relationship between an individual and his personal deity. In the case of the king, they had a significance not only for himself, but also for his subjects and the state as a whole. On the other hand, the physiognomic series *Alamdimmû* has been interpreted as a handbook directed at selecting the most appropriate officials and priests, which ultimately served the king as well.⁹

Interestingly enough, both series featured a sub-series collecting the signs observed on female bodies. In this contribution, we will present both of them and provide a possible explanation for their inclusion in the reference works for diagnosis and physiognomy, adding further insights in the statement of Esagil-kīn-apli connecting these disciplines to the sovereign.

1. The 'female' sub-series in context

1.1. Alamdimmû and Šumma sinništu qaqqada rabât

The physiognomic series consisted originally of 27 tablets (or chapters) and has been edited by Barbara Böck (2000), with the exception of five chapters which have not been preserved.¹⁰ According to Esagil-kīn-apli's catalogue, the chapters have been arranged into five sub-series. The first one, *Šumma alamdimmû* ("If the figure"), gives name to the whole handbook: it consists of twelve tablets dedicated to the appearance of men's bodies.¹¹ The two following sub-series are to be considered physiognomical in the wider sense, as they refer to human behavior: *Šumma nigdimmû* ("If the outward look") collects omens related to conduct, while *Šumma kataduggû* ("If the statement") is concerned with speech.¹² The fourth and fifth subseries are dedicated respectively to the examination of women bodies and skin appearing on a person's body (men and women). The latter consisted (most likely) of nine chapters, examining different dermatological imperfections, starting from *liptu* (hence the title *Šumma liptu* for the sub-series).

The female section, within the scope of our contribution, is known as *Šumma sinništu* qaqqada rabât, "If a woman has a big head".¹³ According to the Catalogue of Esagil-kīn-apli, it consisted originally of two tablets: the current edition by B. Böck (2000) presents seven

¹³ Böck 2000: 148-173.

⁷ Finkel 1988: 148 reads the final sentence as "let him put his diagnosis at the disposal of the king".

⁸ Schmidtchen 2018a: 149.

⁹ Böck 2000: 55-57; Böck 2010: 214.

¹⁰ Böck 2000. On the hypothesis of an original set of thirty chapters linked to divine numerology, see Scurlock 2003: 396 and Böck 2010: 200.

¹¹ An interesting section is *Alamdimmû* 3, 76-133, recently commented in Bilbija 2008, Frahm 2010: 93-142 and Minen 2020 (especially pp. 11-12).

¹² Unfortunately, only a small fragment out of its two tablets is preserved (Böck 2000: 2). It has been argued that $\check{S}umma\ katadugg\hat{u}$ would have been of use to the king thanks to guidance in ruling (Böck 2010: 214).

fragments belonging to the first one.¹⁴ Most of them are very fragmentary, preserving either protases or apodoses.¹⁵ The only manuscript allowing for an extensive content analysis is the fourth (reconstructed on the basis of more testimonies), comprising 265 omens. These are arranged in a head-to-foot order, following the physical traits given in the protases. The bodily appearance is connected in the apodoses with information and predictions related to the inspected woman, namely (positive of negative) behavioral qualities and tendencies; (mis)fortunes for herself, her husband and her household; her fertility, pregnancy and her capability to bring it to term. In this sense, the female omens of Alamdimmû are not completely in line with the general principle by which "all predictions refer exclusively to the person who is object of or subject to visual inspection"¹⁶. In fact, all these information, in one way or the other, had a relevance for men as prospective husbands, explicitly mentioned in some of the omens.¹⁷ The most desirable woman had to be easy to be with and capable to sustain his spouse as well as his households, also through the generation of offspring. In other words, a woman was conceived ideal not depending on her character alone, but ultimately on her potential to become a good wife, where 'good' is to be intended also as 'likely to able to get pregnant and bring a pregnancy to term'.

It is worth noting that these omens display a clear connection between women's generative faculties and the shape of relevant physical traits, such as breasts, nipples, navel, genitals and buttocks.¹⁸ The following omens will suffice to illustrate the point:

- 143. 'If a woman has (var. abnormally) big breasts, she will be rich; she is a 'woman of god'.
- 144. If they are small, she will be treacherous, she will be promiscuous.
- 156. If the breasts of a woman are abnormally big, she is a 'woman of god'.
- 157. If the breasts of a woman are little, there will be losses for her.
- 205. If the buttocks of a woman are very big, she is a 'woman of god'.
- 208. If her labia are very large, she is a 'woman of god'.
- 209. If they are very thin, she is a woman that will have difficulties in childbirth.

Overall, these omens reveal an awareness concerning the size of given anatomical parts and its consequences for the outcome of childbirth. It seems that smaller genitals and pelvic area in general were already responsible for difficult deliveries: according to a set of interesting incantations, these occurred when a baby was literally 'stuck' inside its mother.¹⁹ The prototype of the ideal woman (*ilānītu*, i.e. 'woman of god') conveyed in these omens is characterized by abundant physical features. Such traits remind us of the steatopygous Venus figurines from the Upper Palaeolithic or the 'mother goddesses' from Neolithic Anatolia, together with their association to women's fertility, capability to conceive and bring a pregnancy to term.²⁰

1.2. Sakikkû and Šumma ālittu arâtma

Sakikkû ("Symptoms"), the diagnostical counterpart of Alamdimmû, comprised originally 40 tablets (or chapters), organised into six sub-series. The handbook was also known from the incipit of its first section: Enūma ana bīt marși āšipu (KA.PIRIG) illaku, "When the āšipu

¹⁴ Böck 2000: 16-17 explained that there was no way to identify the material belonging to the second tablet.

¹⁷ See, e.g., ll. 106, 109, 111, 113, 229, 231, 240c, according to Böck 2000: 156-169.

¹⁵ In particular, the remaining protases in the first (BM 134523 = CT 51 153) and second fragment (K 9230) are related to dermatological traits of women, namely complexion and the lesion *halû*. Fragmentary omens on the fifth fragment (K 10511, 14-17) ascribe to *umṣātu*-lesions (especially appearing on a woman's genitals) the possibility of negative outcomes (even becoming a widow).

¹⁶ See Böck 2010: 202-203, stating also that "as compared to predictions referring to king and country compiled in omen handbooks such as *Šumma izbu*, *Šumma ālu*, *Enūma Anu Enlil*, or extispicy, the impact of physiognomical omens was very limited and reduced: whether a man had a black fleck behind or on top of his left ear scarcely concerned anybody else but him, since he would have to cope with the consequences".

¹⁸ Böck 2010: 202.

¹⁹ See Bergmann 2008 (especially 55-56).

²⁰ Leick 1991: 120; Couto-Ferreira 2008: 27-30, Minen 2018: 172-173.

goes [to the house of] a sick man". The omens collected in the two tablets of this sub-series stem from the occurrence of unusual phenomena observed over the healer's itinerary and deemed significant for a prediction of the patient's prognosis.²¹ The heart of the handbook is the second sub-series, *Ana marși ina ţehêka*, 'If you approach the patient', comprising Tablets 3-14. The protases register the symptoms of sickness observed on a (male) patient's body and, as *Alamdimmû*, are arranged from head to foot. The apodoses reduce the wide variety of symptoms into a range of possibilities comprised by the opposing poles of life and death.²² The following sections are guided by different organizing principles. The duration of disease is the focus of *Šumma ūm išten marişma šikin lipti*, 'If he is sick for one day and the appearance of the touch' (Tablets 15-25), while neurological complaints are at the centre of *Šumma miqtu imqussuma sakikkû* AN.TA.ŠUB.BA, 'If *miqtu* befalls him and the symptoms of AN.TA.ŠUB.BA' (Tablets 26-30). The fifth sub-series *Šumma şētu ihmussuma*, 'If *şētu*fever has made him feverish' has not been completely preserved: Tablet 31 is dedicated to fevers, while tablet 33 describes the appearance and the symptoms of different ailments, namely of dermatological nature.

The female sub-series *Šumma ālittu arâtma*, 'If a fertile woman is pregnant', consisted originally of five tablets and concluded the Diagnostic Handbook. Even we have not retrieved half of the section, catalogues and colophons helped us in reconstructing the following arrangement of its contents. Tablet 36 is almost complete, with the exception of some fragmentary lines. It collects 115 omens stemming from the observation of the physical features of a (healthy) pregnant woman, but also includes symptoms descriptions, attitudes and activities during pregnancy, such as sexual intercourse in its closing section.²³ About 20 lines at the beginning of Tablet 37 are preserved. They provide cases of coitus with sick pregnant women,²⁴ but also refer to strange behaviors and symptoms varying from day to night and vice versa. Protases either are followed by a prognosis for the woman (such as death, worry, recovery, and also the future of her household), or report on the (super)natural cause of her symptoms.²⁵ Albeit not preserved, the rest of Tablet 37 may have continued the listing of symptoms experienced by pregnant women.²⁶ The following Tablets 38-39 are not preserved, with the exception of their catch-line. The incipit of the former mentions woman's 'waters', referring either to obstetrical anomalies or the rupture of the amniotic sack and, thus, the onset of labor in childbirth. The mention of a haristu ("a woman in confinement") at the beginning of the latter points to postpartum complications.²⁷ The last chapter of the

²¹ As such, they should be classified as terrestrial omens: some of them are attested also in the *Šumma ālu* series (see Heeßel 2001). This explains why Scurlock 2014 does not include the edition and translation of these first two tablets. Nonetheless, there must have been a reason for their inclusion and their foremost position within the Handbook. Attempts at deciphering their medico-diagnostical relevance have been carried by George 1991, Finkel 2014 and Wee 2019a-b.

²³ On the omens related to intercourse during pregnancy, see Minen 2018: 190-193 and Minen forthcoming.

²⁴ The chapter is known as DIŠ MUNUS.PEŠ₄ GIG-*ma*, "If a pregnant woman is sick". Both Tablets 36-37 have been studied by Stol 2000: 193-203.

²⁵ Such as the *lilû*-demons, in *Sakikkû* 37, 12-14: "If a woman is ill and her affliction always afflicts her during the night, it is an affliction of *lilû*. If a woman is ill and her affliction always afflicts her in the evening and she continually takes her clothes off, it is an affliction of *lilû*. If a woman's illness always afflicts her during the night, it is an affliction of *lilû*" (Scurlock 2014: 256).

²⁶ Heeßel 2019 published a recently discovered fragment from a related commentary.

²⁷ According to Esagil-kīn-apli's catalogue the incipits read, respectively: DIŠ MUNUS A-šá 'ina?' UD 3.KÁM [...], "If a woman – her water flows (for) three days" and DIŠ MUNUS *ha-riš-'ti i'-di-ip u 'i-giš'-šú*, "If a woman in labour is bloated and belches" (Schmidtchen 2018a: 140). Nevertheless, according to CAD H s.v. *harištu* A-B, 103-104, the term could have designated also a (temporarily) impure woman because of her menstruation (see van der Toorn 1989). As such, as we would say these days, she needed to be 'socially distanced'. The treatment of puerperal symptoms is attested in therapeutic ob-gyn texts, such as SpTU IV 153, BM 38624, BAM III 240. See Steinert 2013, Scurlock – Andersen 2005: 281-282, Minen 2018: 197.

²² Labat 1951: xxviii-xxix; Heeßel 2000: 63.

handbook, Tablet 40, collects pediatric symptoms affecting newborn, infants and children up to four years in over 120 lines. The omens show that physicians, when visiting a baby, checked its reflexes, the presence of congenital problems or disorders. Moreover, they monitored its development in length and weight in respect to its appetite or nourishing habits. Related problems were assessed and linked either to the baby's health or the milk it suckled. Interestingly, the symptoms descriptions differentiate among physiological events, such as colic or teething (providing reassurance to the $\bar{a}sipu$ as well as the concerned parents; see § 3, below), and severe pediatric problems connected to witchcraft, demons (such as Lamaštu) or gods²⁸.

Fittingly, scholars identified both women and children as the scope of this sub-series.²⁹ Nevertheless, one is left to wonder why this section has been included in the Diagnostic Handbook and whether it had an implicit relevance, as argued for the physiognomic sub-series. Moreover, a comprehensive study of *Šumma ālittu arâtma* is still lacking, being previous contributions dedicated either to women or children. According to M. É. Couto-Ferreira, the collection of contents referring to gynecology, obstetrics and pediatrics within the same sub-series implies that these realms were deemed connected to one another, as long as written medical knowledge is concerned.³⁰ In our opinion, the argument for such association should be supported by an equal attentiveness to the health of both women and children. Quite the opposite, a critical analysis of the material yields an uneven picture.³¹

The omens from Tablet 36 are difficult to define as a whole. Less than ten apodoses can be classified as diagnostical omens, either stemming from the physical exam of pregnant women or providing prognoses. These refer to their wellbeing, their chances of death from pregnancy or recovery. We present the following examples:³²

77. If the face of a woman of childbearing age changes (for the worse), she will die as a result of her being with child.

81. If a woman of childbearing age continually vomits, she will not bring (her fetus) to term.

82. If (in) a woman of childbearing age, dark blood flows from (the womb)'s mouth, she will not get well from her pregnancy.

83. If (in) a woman of childbearing age pus is continually produced from her (womb)'s mouth, she will die together with her fetus.

103. If a woman of childbearing age is properly respectful of pregnancy, she will get well from her being with child.

104. If a 'woman of childbearing age' is careless of 'pregnancy', she will die from her being with child.³³

108. If a woman of childbearing age is pregnant and at (five) months (and) five days ditto (they approach her), she 'will be sick' with *menstrual bleeding*.

109. If a woman of childbearing age is pregnant and at (five) months (and) six days ditto (they approach her), ditto (she will be sick with *menstrual bleeding*).³⁴

Despite their inclusion in the Diagnostic Handbook, the majority of the attested omens from *Šumma ālittu arâtma* display a physiognomic trend. In Tablet 36 the protases are centered on the appearance of a healthy pregnant women:³⁵ they describe single body parts (such as forehead, temples, breasts, epigastrium, navel, ankles) and other features (e.g., muscles, blood

³⁰ Couto-Ferreira 2017: 23, fn. 17.

- ³² We follow the translation given by Scurlock 2014: 251-253.
- ³³ On ll. 103-104, see comments of Stol 2000: 201.
- ³⁴ Our italics, evidencing the English translation for Akkadian *nahšātu* (cf. Scurlock Andersen 2005: 260,

Biggs 2006: 43, fn. 29, Steinert 2012 and Minen 2018: 186-188).

³⁵ Stol 2000: 193.

²⁸ DIŠ LÚ.TUR la-'-u, "If the suckling". The chapter has been analyzed by Cadelli 1997, Volk 1999, Couto-Ferreira 2017. See also Scurlock 1991 and Wiggermann 2000 for the supernatural agents involved.

²⁹ See, e.g., Labat 1951: xix; Heeßel 2000: 35; Scurlock 2005: 303; Fales 2018: 71; Wee 2019a: 352.

³¹ A first comprehensive study of Tablets 36-37 has been proposed in Stol 2000: 193-204, providing an insightful commentary and recognized also cases of intertextuality with other divinatory series.

vessels, skin lesions or the dimples on breasts' tip), while the apodoses consist of general predictions rather than prognoses. And yet, these omens are intimately directed at foreseeing not the destiny of the pregnant woman per se but her potential to bring a pregnancy to term, face a difficult childbirth and give birth to healthy babies. In particular, most predictions concern the life or death of the fetus, its sex and even remarkable cases, such as the birth of twins or impaired children.³⁶ Interestingly, these physical observations of women provide us with different and (to a certain point) complementary information in comparison to *Alamdimmû*. For example, in the physiognomic handbook the sex of the child appears to be connected only to predictions stemming from the examination of men;³⁷ differently, in *Šumma ālittu arâtma* the same topic is addressed by more than fifty omens. To illustrate the point, we present selected passages from Tablet 36:³⁸

1. If a woman of childbearing age is pregnant and the top of her forehead is greenish, her fetus is male (var. it will be fully formed).

2. If the top of the forehead of a woman of childbearing age is white (and) shines, her fetus is female (var. it will become rich [i.e., fat]).

26. If the tip of a woman of childbearing age's breast is twisted (shut), her fetus will not do well.

27. If it is open, her fetus will do well.

37. If it has four dimples, her fetus will be poor (i.e., thin).

38. If it has five dimples, her fetus will die.

40. It if has six dimples, her fetus will live.

61. If they (= a woman of childbearing age's insides) are packed into her hypogastric region, she will give birth to a deaf/retarded child.

62. If they are poured into her hypogastric region, ditto (she will give birth to a deaf/retarded child).

98. If she steps from to the "right" and "left", she is pregnant with twins.

The given examples clearly show how the physical observation of pregnant women are aimed at disclosing relevant information on their fetuses and their destiny, ultimately intertwined with their mothers. If we reconsider the 'diagnostical' omens from *Šumma alittu arâtma* quoted above, it appears that they also include predictions related to the health of fetuses, as depending on the health of their mothers. In the light of the hypothetical content reconstruction for the whole sub-series, the so-called 'female' sub-section of *Sakikkû* has little to do with women, but rather with children. This is clear in Tablet 40, completely dedicated to pediatric issues, but it can be inferred also from previous tablets. The focus on women is directed implicitly at their fetuses for the mere fact that, as such, they cannot be isolated from the women carrying them. Under this light, the concerns for the mother's wellbeing may be read as well as implicit concerns for the child in her womb.

2. The common rationale behind the 'female' sub-series

Besides not being reconsidered in its whole, Šumma ālittu arâtma has not been compared extensively with its physiognomical counterpart. Previously, M. É. Couto-Ferreira surveyed both sub-sections, arguing that they insist on the risks of pregnancy. In particular, she argued that physiognomical entries offer long-term forecasts, until marriage and conception; differently, diagnostical omens provide short-term forecasts, being the woman already pregnant.³⁹ Our analyses show that these arguments do not reflect the complexities of both sub-series, clearly not limited to the risks of pregnancy. For example, most apodoses in *Alamdimmû* are concerned not only with the woman's fate, but also with her qualities, tendencies and their consequences for her husband and his household. On the other hand, the

³⁶ More than 50 apodoses are concerned with indications of the sex of the fetus. See, e.g., ll. 1-4, 6, 8-15, 19, 22-25, 28-29, 31, 35, 45-46a, 47-53, 57-60, 63-68, 70, 72-76, 90-91, 93, 95-97, 100-101.

³⁷ Scurlock 2003: 396-397.

³⁸ We follow the translation given by Scurlock 2014: 248-252.

³⁹ Couto-Ferreira 2008: 30-34.

focus of the female sub-section of $Sakikk\hat{u}$ is indeed pregnancy, but its risks are somehow secondary.

From our discussions, it rather emerges that the omens centered on the observation of female bodies had specific and complementary purposes. Those from *Alamdimmû* were aimed at an informed choice on a good wife, which had to be fertile and able to procreate children. When, finally, a wife complied with the high expectations through her pregnancy, the omens from *Sakikkû* helped in gathering relevant information related to the desired child, such as its chances of survival, sex, health and destiny. The insertion of these 'female' sub-series in both series confirm the importance of generating offspring in the ancient Near East, as evidenced by a variety of cuneiform sources from different chronological and geographical origin. Children are related to the Akkadian concept of *šumu*, which may be translated in different and apparently unrelated manners. As extensively discusses by Karen Radner (2005), *šumu* indicated not only a simple 'name', but also reputation and fame (e.g., the 'good' name). Moreover, the term designated also 'sons', especially if paired with *zēru* ('male descendance')⁴⁰ and is strongly related to our notion of 'memory'.⁴¹ Therefore, *šumu* embodied roughly all possible means by which someone could achieve a form of immortality according to Mesopotamian beliefs.

Children played a crucial role in the ancestors' cult, where the eldest son, in his function of *zakir šumi*, had the duty to call by name the spirits of his dead relatives. In this manner, their share in the ritual offerings brought by all the members of the family was ensured. They were deemed important also for the simple fact that they were alive: by being on earth, they reminded others of the name and the past existence of their ancestors.⁴² The crucial role of offspring for spiritual immortality is represented in an interesting section of *Gilgamesh*, *Enkidu and the Netherworld*, where the number of sons is directly proportional to the status of the dead soul:⁴³

"Did [you see the man with one son?]" "I saw (him). [A peg is] fixed [in his wall] and he weeps over [it bitterly.]"

"[Did you see the man with two sons?" "I] saw (him). [He sits on two bricks] eating a bread-loaf."

"[Did you see the man with three sons?]" "I saw (him). He drinks water [from a waterskin slung on the saddle.]"

"Did [you see the man with four sons?]" "I saw (him). [Like the owner of a donkey]-team his heart rejoyces."

"Did you see [the man with five sons?]" "I saw (him). [Like a] fine [scribe] his hand is deft, he enters the palace [with ease.]"

"Did you see the [man with six sons?]" "I saw (him). [Like a ploughman his heart rejoyces.]"

"[Did you see the man with seven sons?" "I saw (him).] [Among the junior deities he sits on a throne and listens to the proceedings.]"

Nevertheless, ensuring an offspring was no easy task in the ancient Near East. Laws, rituals, incantations and therapeutic recipes display a complex system to counteract barrenness and fertility issues, spontaneous or induced miscarriages, intentional abortions, difficult childbirths and high rates of neonatal death.⁴⁴ Keeping this composite picture in mind, one

⁴⁴ Minen 2018: 171-172.

 $^{^{40}}$ As such, both terms are attested in Akkadian onomastics, in phrase names mirroring the gratitude of the parents to the gods for granting a child (see Stamm 1939: 136-160), but also curse formulas, wishing the complete annihilation of someone's family, as in Codex Hammurabi col. XLIX, ll. 18-44 and col. LI, ll. 40-49 (Roth 1997: 136 and 139) or the *adê* of Esarhaddon (SAA II 6, ll. 138-141, 160-161, 315, 435-436, 524-525, 660-661; Parpola – Watanabe 1988: 28-58).

⁴¹ See CAD s.v. *šumu*.

⁴² Saporetti 1993; Van der Toorn 2014: 81-82.

⁴³ Gilg. XII, 102-116 (George 2003: 732-735). See also Radner 2005: 82-84 and Cooper 2009: 31 for comments on the quoted lines.

could understand more easily why scholars felt the need to gather omens directed at the kaleidoscopic gamut of emotions and fears related to the procreation of children.

3. The 'female' sub-series in practice

After assessing the aim of the 'female' sub-series and the intimate reason and relevance for ancient Near Eastern cultural life, the following issues still need to be addressed: how was such knowledge put concretely into practice? And who could actually benefit from this scholarly material?

Unfortunately, available information is too scanty to reconstruct if and how the bodily inspections of women implied by these omens were carried, if and how the resulting observations were compared to the omens of the reference literature, or how the outcomes of the bodily inspections found use in everyday life. Nonetheless, it is interesting that the physical examination of women may have had actual legal relevance for marriage in neighboring cultures, at least in early rabbinic Judaism. The Mishnah, the foundational work of Jewish legal thinking from Talmudic Israel (ca. 2nd CE), presents us with the following prenuptial agreements (*Ketubot*):⁴⁵

7. (...) [If he has betrothed her] on condition that she has no physical blemishes, and blemishes are found, she is not betrothed. If he married her without conditions and blemishes are discovered, he may divorce her without [paying] her *ketubah*. All those blemishes that disqualify *kohanim* [from serving in the Temple] also disqualify women [in this regard].

8. If she had blemishes [that are discovered] while she is still in her father's house, the father must bring proof that these blemishes had originated after she was betrothed, and [the bridegroom's] field was flooded [i.e., it is unfortunate for him]. [Once] she entered the husband's domain, the husband must prove she had these blemishes before she was betrothed, and his [initial] transaction was in error. These are the words of Rabbi Meir. The Sages say, "[With regard to] what were these words stated? To blemishes that are hidden [out of sight], but with regard to blemishes that are revealed he cannot make a claim. And if there is a bathhouse in that city, he may not make a claim even with regard to blemishes that are hidden, as he [would be expected] to examine her by his female relatives."

The passages provide instructions in the case of engagement and marriage to a (prospective) bride presenting bodily imperfections. Chapter 7 strikingly pairs priests (the *kohanim*) and women, paralleling the arguments gathered by B. Böck in favor of the relevance of physiognomy in religious as well as in secular contexts, such as marriage.⁴⁶ The following chapter enters in the merits of who was responsible for the bodily inspection and who was supposed to conduct it.⁴⁷

We turn to the last issue of our contribution. According to the universal relevance of procreation highlighted above (§ 2), we believe that there is no doubt that both 'female' subseries deal with a matter of primal concern to different strata of society: men and women, the rich and the poor. Nonetheless, the reference to the king in Esagil-kīn-apli's editorial note opens an interesting perspective. In fact, the text mentions the relevance of the practical scholarship related both to diagnosis and physiognomy for the sovereign.⁴⁸ Moreover, the health of the king was a crucial matter for the existence of the realm and should have been cared for as such.⁴⁹ In this light, we may recognize a rationale behind the final sub-section of *Sakikkû* if we conceive it as a summary of all the knowledge deemed relevant to ensure his

⁴⁸ Böck 2010: 214-215.

⁴⁹ Heeßel 2000: 91-92.

⁴⁵ Mishnah Ketubot 7: 7-8. We follow the English translation of D. A. De Sola and M. J. Raphall, *Eighteen Treatises from the Mishnah* (London 1843) according to the online version available on <u>www.sefaria.org</u> (last accessed on 29th September 2020).

⁴⁶ Böck 2010: 218-219. On the physical appearance and blemishes of priests see Van der Toorn 1989; 345-346; Sallaberger – Huber Vulliet 2005: 620-621; Waerzeggers 2008. Cf. Quack 2005: 64 for similar instructions related to ancient Egyptian priests.

⁴⁷ See Secunda 2012: 70-78 for comments on these passages and Iranian parallels.

interests, such as: his chances to engender rightful heirs, ensure their wellbeing and, consequently, the his dynasty and the memory of his 'name'.

In this respect, the analysis of the State Archives of Assyria (SAA X) may be a fruitful case study. The interest of this corpus for historical insights into medical professionals at the court has been assessed before with profit.⁵⁰ We may add that a group of around twenty letters proves that begetting children, keeping them alive and healthy were primal concerns of kings (see Table 1, below). The selected texts reveal a general interest for the king's health and his family involving reports, rites and therapies (nos. 214, 305, 320 and 322). In particular, some reveal a close concern for the health of the princes, whether affected by fevers, teething pains, epilepsy episodes or abscesses (e.g., nos. 193, 302, 309 and 319)⁵¹. Interestingly, in a letter we find also the suggestion of a therapeutic treatment to be offered to the prince only after conducting a preliminary test on 'guinea-pigs' servants (no. 191). The letters display also general interest for the health of the women of the family, namely the Queen Mother (e.g. nos. 200-201). In particular, childbirth is an attested theme (nos. 203 and 316). The learned instructions and technicalities of court physicians disappear when they are faced with the tragedy of the untimely death of a son, as in the case of Adad-šumu-uşur's heartfelt attempt to console his king (no. 187, 11. 6-15):

As to what the king, my lord, wrote to me: "I am feeling very sad; how did we act that I have become so depressed for this little one of mine?" – had it been curable, you would have given half of your kingdom to have it cured! But what can we do? O king, my lord, it is something that cannot be done.⁵²

This material is noteworthy per se but acquires wider relevance for our arguments if we remind the provenance of the material analyzed above. In fact, most manuscripts from both physiognomic and diagnostic series have been retrieved in the Ninevite Royal libraries of 1^{st} millennium BCE; the *Catalogue of Esagil-kīn-apli* – together with his editorial note – are attested also by Neo-Assyrian testimonies.⁵³

⁵⁰ See in particular Geller 2010: 76-88.

⁵¹ Teething, due to its symptoms, appeared worrying to parents. Therefore, both this letter and the Diagnostic Handbook provide reassuring comments on the physiological cause for their manifestation in babies. See SAA X 302, 11-r.3: "The 'burning' wherewith his head, arms and feet were 'burnt' because of his teeth: his teeth were (trying) to come out" (Parpola 1993: 241). Cf. *Sakikkû* 40, 10-12: "If the infant's head holds fever (and) his body (holds) a lukewarm temperature (and) he does not sweat (but) his hands and feet are hot, his saliva flows and he drools, whatever he eats does not rest easy in his stomach and he then pours (it) out, that infant's teeth are coming out. He may suffer for fifteen or twenty days, but he will get well" (Scurlock 2014: 263). ⁵² Parpola 1993: 154.

⁵³ See Böck 2010: 200, Labat 1951: xiv.

No.	Medical relevance for Royal women and or babies
187.	Comforting Esarhaddon upon his son's death
191.	Servants as guinea-pigs for the crown prince
192.	Prince affected by fever
193.	Visiting the prince suffering from fever (ll. 7-8)
200.	Anti-witchcraft rituals for the Queen Mother
201.	Curing the Queen Mother
213.	Baby healed from fever
214.	Health of the Crown prince
223.	Medical reports on sons' health
244.	Recovery of the Queen Mother
293.	Royal childbirth (gone wrong?)
301.	Report on royal baby's health
302.	Teething pains
305.	Royal baby's health
309.	Epilepsy episodes in children
316.	Plants for a woman in labor
319.	Cure for an infant's abscess
320.	Cures for royal babies
321.	Mention of the prince's health (l. 7)
322.	Treatment of Crown prince (ll. 7-14) (followed by critics over a wrongly administered
	tampon for nosebleed (r. 1-17; Geller 2010: 83-85).
323.	Report on Crown prince's health, after personal visit
328.	Health of Šamaš-šumu-ukin
329.	Health of the prince (?)

Table 1. List of the letters from the State Archives of Assyria (SAA X) related to the health of the Royal women and children.

Conclusions

Our contribution aimed at providing new insights on the rationale of the physiognomic and diagnostic handbooks by focusing on their 'female' sub-series. From our analyses, it emerged how a genuine focus on women is somehow limited in both cases. In *Alamdimmû*, *Šumma sinništu qaqqada rabât* provides signs to distinguish among women unsuitable for a happy marriage (promiscuous, barren, unable to bring pregnancy to term) and the good wife *par excellence* (which had to be faithful, fertile, with the proper physical traits easing pregnancy and childbirth).

If this section is concerned with women before marriage, $Sakikk\hat{u}$'s last sub-series is concerned with the underlying reason for marriage, i.e. the fulfillment of such high expectations of feminine procreation. Rather than a chapter concerned with the health of women and children alike, this final sub-series of $Sakikk\hat{u}$ may be viewed as a focus on childbirth and children alone.

Cuneiform sources attest to diagnostical entries directly concerned with women's wellbeing, therapeutic texts collecting remedies for women ailments unrelated to pregnancy or childbirth and even incantations displaying a sincere care towards laboring women. Differently, *Šumma ālittu arâtma* should be viewed as a collection of knowledge aimed at ensuring the procreation of children and their care. In this light, the body of a pregnant

woman would have been considered only a medium to gather useful information for predictions related to the desired baby.

Important questions remain open to discussion, especially practical issues concerning the setting of the observation of women's bodies or who benefitted from such knowledge and services. Nonetheless, the editorial note of Esagil-kīn-apli comes to help in pointing us to the king as the primary beneficiary. This detail should be referred not only to the care of his health, but also of his wider interests, including the fate of his family and dynasty. Letters from the State Archives of Assyria provide corollary evidence to the king's attention to the health of his sons. From this viewpoint, the *raison d'être* of *Šumma ālittu arâtma* would lie in its attention on the medical care of offspring, from within the maternal womb until weaning. By doing this, physicians would ensure the survival of the father's 'name', which was particularly crucial in the case of sovereigns wishing to generate healthy, royal heirs.

Bibliography

Bergmann C. D. 2008. *Childbirth as a Metaphor for Crisis: Evidence from the Ancient Near East, the Hebrew Bible, and 1QH XI*, 1-18, Berlin/New York.

Biggs R. 2006. The Human Body and Sexuality in the Babylonian Medical Texts, in L. Battini, P. Villard (eds.), *Médecine et Médecins au Proche-Orient ancient. Actes du Colloque International organisé à Lyon les 8 et 9 novembre 2002*, Oxford, 39-51.

Bilbija J. 2008. Interpreting the Interpretation. Protasis-Apodosis-Strings in the Physiognomic Omen Series *Šumma alamdimmu* 3.76-132, in R. J. van der Spek (ed.), *Studies in Ancient Near Eastern World View and Society presented to Marten Stol on the Occasion of his 65th Birthday, 10 November 2005, and his Retirement from the Vrije Universiteit Amsterdam*, Bethesda, 19-27.

Böck B. 2000. Die babylonisch-assyrische Morphoskopie, Wien.

Böck B. 2010. Physiognomy in Ancient Mesopotamia and Beyond: From Practice to Handbook, in A. Annus (ed.), *Divination and Interpretation of Signs in the Ancient World*, Chicago, 199-224.

Cadelli D. 1997. Lorsque l'enfant paraît... malade, KTEMA 22, 11-31.

Campbell Thompson R. 1923. Assyrian Medical Texts from the Originals in the British Museum, London.

Cooper J. S. 2009. Wind and Smoke: Giving up the Ghost of Enkidu, Comprehending Enkidu's Ghosts, in M.-C. Poo (ed.), *Rethinking Ghosts in World Religions*, Leiden/Boston, 23-32.

Couto-Ferreira M. É. 2008. «Si una mujer tiene la cabeza grande»: fisionomía y carácter femenino en un texto asiriobabilónico, *Asclepio. Revista de Historia de la Medicina y de la Ciencia* 40 (1), 19-36.

Couto-Ferreira M. É. 2017. Un corpo malato: le malattie dei bambini nella serie assirobabilonese di diagnostici e prognostici (*sakikkû*), in A. M. G. Capomacchia, E. Zocca (eds.), *Il corpo del bambino tra realtà e metafore nelle culture antiche*, Roma, 21-38.

Fales F. M. 2018. Uno sguardo d'insieme alla medicina mesopotamica: i medici, le terapie, il corpo e le malattie, in F. M. Fales (ed.), *La medicina assiro-babilonese*, Roma, 3-77.

Finkel I. L. 1988. Adad-apla-iddina, Esagil-kīn-apli, and the Series SA.GIG, in E. Leichty *et al.* (eds.), *A Scientific Humanist. Studies in Memory Abraham Sachs*, Philadelphia, 143-159. **Finkel I. L. 2014.** *The Ark Before Noah*, London.

Frahm E. 2010. Reading the Tablet, the Exta, and the Body: The Hermeneutics of Cuneiform Signs in Babylonian and Assyrian Text Commentaries and Divinatory Texts, in A. Annus (ed.), *Divination and Interpretation of Signs in the Ancient World*, Chicago, 93-142.

Geller M. J. 2010. Ancient Babylonian Medicine. Theory and Practice, Chichester.

George A. R. 1991 Babylonian Texts from the Folios of Sidney Smith. Part Two: Prognostic and Diagnostic Omens, Tablet 1. *Revue d'Assyriologie* 95, 137-167.

George A. R. 2003. The Babylonian Gilgamesh Epic. Introduction, Critical Edition and Cuneiform Texts, 2 vols, Oxford.

Heeßel N. P. 2000. Babylonisch-assyrische Diagnostik, Münster.

Heeßel N. P. 2001. "Wenn ein Mann zum Haus des Kranken geht …" Intertextuelle Bezüge zwischen der Serie *Šumma ālu* und der zweiten Tafel der Serie SA.GIG. *Archiv für Orientforschung* 48-49, 24-49.

Heeßel N. P. 2019. K. 11939 : fragment d'un commentaire de SA.GIG 37 en provenance de Ninive, *JMC* 34, 1-3.

Kinnier Wilson J. V. 1956. Two Medical Texts from Nimrud, Iraq 18, 130-146.

Köcher F. 1963-1980. *Die babylonisch-assyrische Medizin in Texten und Untersuchungen*, 6 vols., Berlin.

Labat R. 1951. Traité akkadien de diagnostics et pronostics médicaux, Paris.

Leick G. 1994. Sex and Eroticism in Mesopotamian Literature, London/New York.

Minen F. 2018. Discendenza, gravidanza e nascita nella Mesopotamia antica: i testi ostetricoginecologici, in F. M. Fales (ed.), *La medicina assiro-babilonese*, Roma, 167-203.

Minen F. 2020. Ancient Mesopotamian views on human skin and body: a cultural–historical analysis of dermatological data from cuneiform sources. *Notes and Records. The Royal Society Journal of the History of Medicine* 74 (1), 119-130.

Minen F. forthcoming. « Dans les eaux de l'acte conjugal, l'ossature s'est faite ». Fluides corporels et procréation dans la Mésopotamie ancienne, in C. Audouit, B. Mathieu, E. Panaite (eds.), *Les fluides corporels en Égypte et au Proche-Orient anciens, Université Paul Valéry Montpellier, 5-7 septembre 2019*, Leuven.

Parpola S., Watanabe K., 1988. Neo-Assyrian Treaties and Loyalty Oaths, SAA II, Helsinki.

Parpola S. 1993. Letters from Assyrian and Babylonian Scholars, SAA X, Helsinki.

Quack J. 2005. Tabuisierte und ausgegrenzte Kranke nach dem ,Buch vom Tempel⁴, in H.-W. Fischer-Elfert (ed.), *Papyrus Ebers und die antike Heilkunde. Akten der Tagung vom 15.-16. 3. 2002 in der Albertina/UB der Universität Leipzig*, Wiesbaden, 63-80.

Radner K. 2005. Die Macht des Namens. Altorientalische Strategien zur Selbsterhaltung, Wiesbaden.

Roth M. T. 1997. Law Collections from Mesopotamia and Asia Minor, Atlanta.

Sallaberger W., Huber Vulliet F. 2005. Priester I.A. Mesopotamien, *RlA* 10, 617-640.

Saporetti C. 1993. Abolire le nascite: il problema nella Mesopotamia antica, Roma.

Schmidtchen E. 2018a. Esagil-kīn-apli's Catalogue of *Sakikkû* and *Alamdimmû*, in U. Steinert (ed.), *Assyrian and Babylonian Scholarly Texts and Catalogues*, Boston/Berlin, 137-157.

Schmidtchen E. 2018b. The Edition of Esagil-kīn-apli's Catalogue of *Sakikkû* (SA.GIG) and *Alamdimmû*, in U. Steinert (ed.), *Assyrian and Babylonian Scholarly Texts and Catalogues*, Boston/Berlin, 313–347.

Scurlock J.A. 1991. Baby-Snatching Demons, Restless Souls and the Dangers of Childbirth: Medico-Magical Means of Dealing with some of the Perils of Motherhood in ancient Mesopotamia, *Incognita* 2, 137-185.

Scurlock J.A. 2003. Review of *Die Babylonisch-Assyrische Morphoskopie* by Barbara Böck, *JAOS* 123 (2), 395-399.

Scurlock J.A. 2005. Ancient Mesopotamian Medicine, in D. Snell (ed.), *A Companion to the Ancient Near East*, Oxford, 302-315.

Scurlock J.A. 2014. Sourcebook for Ancient Mesopotamian Medicine, Atlanta.

Scurlock J.A., Andersen B. R. 2005. Diagnoses in Assyrian and Babylonian Medicine. Ancient Sources, Translations, and Modern Medical Analyses, Urbana/Chicago.

Secunda S. 2012. The Construction, Composition and Idealization of the Female Body in Rabbinic Literature and Parallel Iranian Texts: Three Excursuses, *Nashim: A Journal of Jewish Women's Studies & Gender Issues* 23, 60-86.

Stamm J. J. 1939. Die akkadische Namengebung, Leipzig.

Steinert U. 2012. K. 263+10934: A Tablet with Recipes Against the Abnormal Flow of a Woman's Blood, *Sudhoffs Archiv* 96, 1, 64-94.

Steinert U. 2013. Fluids, Rivers, and Vessels: Metaphors and Body Concepts in Mesopotamian Gynaecological Texts, JMC 22, 1-23.

Stol M. 2000. Birth in Babylonia and the Bible. Its Mediterranean Setting, Groningen.

Van der Toorn K. 1989. La pureté rituelle au Proche-Orient ancien. *Revue de l'histoire des religions* 206 (4), 339-356.

Van der Toorn K. 2014. Dead are slow to depart: Evidence for Ancestor Rituals in Mesopotamia, in V. R. Herrmann, J. D. Schloen (eds.), *In Remembrance of Me. Feasting with the Dead in the Ancient Middle East*, Chicago, 81-84.

Volk K. 1999. Kinderkrankheiten nach der Darstellung babylonisch-assyrischer Keilschrifttexte, *OrNS* 68, 1-30.

Waerzeggers C. 2008. On the Initiation of Babylonian Priests (with a contribution by Michael Jursa), Zeitschrift für Altorientalische und Biblische Rechtsgeschichte 14, 1-38.

Wee J. Z. 2015. Phenomena in Writing. Creating and Interpreting Variants of the Diagnostic Series Sa-gig, in J. C. Johnson (ed.), *In the Wake of the Compendia. Infrastructural Contexts and the Licensing of Empiricism in Ancient and Medieval Mesopotamia*, Boston/Berlin, 247-287.

Wee J. Z. 2019a. Knowledge and Rhetoric in Medical Commentary, Leiden/Boston.

Wee J. Z. 2019b. Mesopotamian Commentaries on the Diagnostic Handbook Sa-gig, Leiden/Boston.

Wiggermann F. A. M. 2000. Lamaštu, daughter of Anu. A profile, in M. Stol, *Birth in Babylonia and the Bible. Its Mediterranean Setting*, Groningen, 217-252.

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