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Evolution of Unmet Need for Contraception: Appreciating Husbands' Effect in the Conceptualization

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**Evolution of Unmet Need for Contraception:
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Conceptualization**

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Abstract

Purpose: Uniquely, reproductive-age women will develop contraception needs pursuant to variation between contraceptive prevalence and fertility preferences. Among contraception needs, unmet need is the desire to reduce fertility by delaying or limiting childbirth besides abstaining contraception use among exposed reproductive-age women. With dearth of consolidated literature on conceptualization and ideation of unmet need for contraception, this paper synthesizes sparse findings from cogent fertility literature and generates single intelligible script.

Methodology: Conceptualizing unmet need preceded 1970s, evolving into current understanding pursuant to incorporation of multifarious assumptions and estimations. Initial conceptualization and documentation of contraception need and demand used data from knowledge, attitude and preference survey conducted in 1970s' that identified pool of women in "irrational situation". Incorporating evidence from fertility surveys and psychology literature, irrational women evolved into displaying "discrepant behaviour", having "KAP-gap" and then unmet need for contraception. Further refinements incorporated "wantedness" of current pregnancy/ last childbirth, protection status and "intendendness" of current pregnancy/ last childbirth.

Findings: Continued omission of husbands' effect prompted cogent Authors to suggest existence of a pool of reproductive age women classified as having unmet need but genuinely have "no unmet" need. This study supports this argument by proffering that exposed reproductive-age women whose husband has virility loss attendant to genetic, health, social and lifestyle factors could assume superficial protection due to diminished conception risk oblivious of coital interaction.

Unique Contribution to Theory, Practice and Policy: This study corroboratively incorporates husband issue of virility loss, and attendant dissertation helps reclassify such pool from having "unmet need" to "no unmet need" besides adducing evidence of overestimation.

Keywords: *Contraception, Evolution, Conceptualization, Husbands*

JEL Codes: *J13, J11*

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INTRODUCTION

Between 1990 and 2021, the number of reproductive age women increased by 46 percent from 1.3 to 1.9 billion, consequently increasing family planning needs and demand by 62 percent from 0.7 to 1.1 billion (UNDESA, 2022). Assuredly, these fecund reproductive age women are; sexually active, exposed to conception, and will once in a lifetime develop a contraception need pursuant to their fertility preferences of wanting to delay or stop childbearing irrespective of contraceptive behavior (Bongaarts, 2017a). In this backdrop, Governments have incessantly instituted fervent interventions targeting women aged 15 to 49 years to satiate their family planning needs, whose ripple effect is a known factor that supports fertility decline, therefore reducing accelerated population growth. Corroborating fertility literature, explicitly defines and delineates family planning needs among the reproductive age women into four distinct categories of met need, unmet need, no unmet need and infecund/ menopausal (Bradley et al., 2012). Specifically, this study delves on unmet need for contraception, which is summarized as the difference between fertility preferences and nonuse of either traditional, folkloric or modern birth control methods among exposed fecund women of reproductive age (Bongaarts, 2014; Bradley & Casterline, 2014).

The definition and conceptualization of unmet need for contraception, though inexplicit, preceded 1970s and has universally crystalized to include amongst all married fecund reproductive age women, those who are consciously contraceptive nonusers but are willing to limit or space childbearing. In addition to this definition, the following characteristics of exposed fecund women of reproductive age are taken into account: At risk of becoming pregnant, want no more children, or want children but do not want to become pregnant within the next two years, or are unsure if or when they want to become pregnant; pregnant which was mistimed (not in opportune time) or unwanted (not desired) at time of conception; or postpartum amenorrheic (not on contraceptives and whose last childbirth was unwanted or mistimed), for up to two years following an unwanted or mistimed childbirth and not using contraception; and, not pregnant or not postpartum amenorrheic and want to limit or space childbirths, but are not using any birth control methods (Bongaarts, 2014; Bradley et al., 2012; Bradley & Casterline, 2014; Staveteig, 2017).

This notwithstanding, the precise conceptualisation and attendant measurement procedure of this seemingly straightforward definition has undergone multifarious explanations owing to the complexity occasioned by doubtful assumptions, imprecisions and scepticism. An assumption is made when, a pregnant or amenorrheic woman is considered to have unmet need for contraception if she saliently indicated that the current or last pregnancy was unintended (Bradley & Casterline, 2014). Secondly, imprecision may arise by classifying women who are on lactational amenorrhea method as being protected for a period of 6 to 23 months oblivious of the clinical guidelines which recommend protection not exceeding six months (Bradley & Casterline, 2014). Thirdly, scepticism arises from the context itself since it has been argued that due to lack of explicit expression on “need for contraception” by survey respondents during fertility survey administration, the computed “need” has always been imposed by the researcher or analyst (Cleland et al., 2014). Other attendant complexities are manifest when applying inclusion and exclusion criteria which considers; “current” contraception status, omitting unmarried women oblivious of coital interaction, and fertility desires and preferences (Bongaarts, 2014).

Cognizant, that women who beget a live child within one year is a good enough proof of fecundity and a failure to use contraception (Bradley & Casterline, 2014), the sensitivity of

women's desires of delaying or stopping childbearing is paramount. In the conceptualization, the aspect of coital interaction has not been wholly embraced despite the known fact that close to 30 percent of women who cite no coitus as reason for contraceptive nonuse are less likely to report sexual interaction in their last 90 days (Bradley & Casterline, 2014). Additionally, there is no known frequency of coital interaction that satiates conception as complemented by (Punab et al., 2017) who documented that 15 percent of exposed couples within the reproductive age have failed to procure pregnancy for a period greater than one year. In these latter instances, such exposed fecund women of reproductive age may feel as being in an "oblivion" state since they cannot attach their inability to conceive to their physicality or lack of elixir of life from spousal ejaculate.

In the convolution of conceptual complexities and rarity of consolidated fertility literature on unmet need for contraception, this study intends to detail pertinent issues in the ambit of conceptualization and evolution from onset to current standing. This is achieved by reviewing and articulating sparse findings and submissions from fertility discourses by cogent demographers, scholars and family planning practitioners and consolidating them into this single intelligible script. Further, this paper proffers inclusion of husbands' virility issues as reason for contraceptive nonuse, an omission always done when estimating unmet need for contraception, whose consideration quantifies overestimation and thus, adding more evidence towards modification of the "Revised" algorithm. Notably, the "Revised" algorithm takes cognizant of husbands' influence in the use or nonuse of contraception by consideration husbands' opposition to use. This notwithstanding, this study corroborates other scholars who argued omission of husband who have absent from home for extended period and now the aspect of virility issues where both have been overlooked. In this study, the term virility is defined as power of "elixir of life" in the ejaculate unlike the masculinity aspect of manhood.

Evolution of Unmet Need for Contraception

In the premise of understanding and quantifying family planning preferences and contraceptive use, Knowledge Attitudes and Preferences (KAP) surveys were conducted in 1960s especially in developing Countries. These KAP surveys evaluated demand for contraception by documenting disconnect between women's knowledge of, attitudes toward, and practice of birth control as well as family size preferences. The major conclusion was identification of subset of women who were termed as being in an "irrational situation" because they were ostensibly receptive to contraception since they indicated a desire to stop or delay childbearing but were not using any contraceptive method (Freedman et al., 1972). Analysis of the KAP survey data revealed that, the national percentage of those women who wanted no more children and were contraceptive nonusers decreased from 35.3 percent in 1965, to 26.2 percent in 1967 and finally to 21.8 percent in 1970. Further analysis indicated that, there was a decrease in women who were in irrational situation "those who wanted no more children who were doing nothing about it" from 61.6 percent in 1965 to 47.2 percent in 1967 and 35.7 percent in 1970. This additional analysis allowed the insinuation that despite existence of a pool of women being in an "irrational situation", they were ostensibly receptive to contraception use since they indicated a desire to stop childbearing despite not using any contraceptive method.

These findings initiated an idea that was first suggested by (Freedman et al., 1972) through a corollary prediction that there was a possibility of existence of women who were in the reproductive age, may have wanted no more children but were not using any contraception.

Using more data from other KAP¹ surveys conducted in Taiwan, (Freedman et al., 1974) documented and quantified the divergence between reproductive behavior (wanted no more children) and contraceptive nonuse (were doing nothing to control childbirth) among this pool of women, hence displaying discrepant behavior. The resulting estimation, indicated that between 1965 and 1970 among women over 30 years, the percent among those who wanted no additional births and were not practicing contraception decreased by half (from 60 to 33 percent). This culminated in decrease of discrepant behavior (wanted no more children who are not using contraception) from 48 to 28 percent. Similarly, women under 30 years had a decline in proportion of women who wanted no more children and were contraceptive nonusers from 67 to 45 percent resulting into decline in proportion of discrepant behavior from 20 to 14 percent. Drawing from psychology literature, which cherishes the difference between demand and need, this resulting discrepancy was termed as “KAP-gap”(Freedman et al., 1974).

The subsequent fertility discourses on unfulfilled demand for contraception, bore the concept of unmet need for contraception that was first introduced by (Stokes, 1977) who noted that globally, there was a possibility of between two-thirds and three-quarters of women facing unintended pregnancy. Such a pool of reproductive age women faced explicated situations by the fact that a substantial proportion were not using contraception, a conventionally known practice that circumvents unintended (mistimed or unwanted) pregnancy outcomes. Paradoxically, this pool of women had a tendency of seeking illegal termination of their pregnancy despite consciously knowing that the longer a pregnancy is delayed the less likely it occurs. Based on these allusions, (Stokes, 1977) indicated that there was extensive over-reliance on induced abortion which was evidently, a clear indication of existence of unmet need for contraception and a proof of rarity of measures aimed at eliminating unintended fertility.

With enthusiasm to refine the conceptualization of discrepancy between fertility preference and contraceptive use, (Westoff, 1978) was the forerunner to substitute from “KAP-Gap” to “unmet need for contraception”. This was supported by evidence adduced from performing further analysis through extraction of information from the First Country Reports (FCR) developed from data collected using World Fertility Surveys (WFS) that were conducted in five countries between 1972 to 1984. From the analysis, the estimates of unmet need for contraception in descending order was 26 percent in Pakistan, 25 percent in Korea, 21 percent in Nepal, 20 percent in Thailand and 17 percent in Malaysia. A major drawback to these results was the exclusion of women who were using or were intending to use contraception for child spacing. These results indicated a relative uniformity that could be attributed to the interaction effects of fertility control interventions on fertility intentions. Therefore, a corollary prediction was made such that as fertility control measures increases, the aspiration for more children decreases. This was construed to mean that occurrence of unsatisfied demand for contraception was attributed to diffusion of smaller family norms and family planning program services within the five Asian countries.

Further (Westoff & Pebley, 1981), added that unmet need for contraception is a function of two joint variables of wanting a child and use of any birth control methods. These two variables counterbalance each other in the sense that there would be “no unmet need” if all women wanted a child/ more children or if all women wanted no child/ more children besides being regular and strict contraceptive users. The enthusiasm to thoroughly, and exhaustively understand the concept of unmet need for contraception resulted into introduction of 12 different aspects in the measure that included; fecundity, breastfeeding, type of contraceptive

¹ 1965 (KAP-I), 1967 (KAP-II) and 1970 (KAP-III)

method, and desire to cease childbearing. To justify this concept, the WFS data from 18 countries was analyzed and the results are shown in Table 1.

Table 1: Different Measures for Estimating Unmet Need for Contraception

Variable	Measures for different definitions											
	1	2	3	4	4a	5	6	7	8	9	10	11
Wants no more children	X	X	X	X	X	X	X	X	X	X	X	X
Desired number less than actual			X					X		X	X	X
Fecund, not pregnant				X	X*	X	X	X	X	X	X	X
Not breastfeeding							X		X	X		X
Not using effective method	X					X	X				X	X
Not using any method		X	X	X	X			X	X	X		
Denominator: MWRA	X	X	X	X	X	X	X	X	X	X	X	X
Mean	40.3	34.7	24.3	14.1	18.2	18.9	13.4	11.2	9.0	7.2	15.1	10.6
Standard deviation	9.9	7.2	7.3	4.9	5.8	7.1	5.3	4.3	3.2	2.8	6.3	4.6

Source: Westoff & Pebley, 1981)

* Standard subjective measure of fecundity (Others use combined subjective and behavioral)

The results of the WFS data from 18 countries as shown in Table 1, indicate that the simplest estimate of unmet need using measure 1 averaged to 40.3 percent and with measure 9 which had more constrictions averaged to 7.2 percent. While recommending measure 4 and 9 as most subtle and coherent estimates, the authors concluded that there was no best measure for unmet need for contraception. Further, they recommended that existence of confounding factors such as program nature, implementation fidelity and funding levels must be considered when deciding which measure to adopt.

Further refinements were proposed by (Nortman, 1982) who noted that pregnant and breastfeeding women were more often than not ignored as they were perceived as being in a “protection status”. Using this perspective, evidently the risk of exposure to unintended fertility is not constant since pregnancy is a temporal status and breastfeeding is only a reliable protection during postpartum period prior to ovulation. This implies that unmet need for contraception should allow these women to transit in and out of exposed group since they will require protection once their “protection status” elapses. Concurrence with this context hence “dynamic model”, allowed for modification and segregation of unmet need for contraception into either for spacing or limiting childbearing. Using data from Contraceptive Prevalence Surveys (CPS) conducted between 1978 and 1984, this proposition indicated that Bangladesh had 67 percent (30 percent stopping and 37 percent spacing), Mexico with 58 percent (31 percent stopping and 27 percent spacing), Colombia had 39 percent (28 percent stopping and

11 percent spacing), Thailand had 34 percent (21 percent stopping and 13 percent spacing), Korea with 29 percent (22 percent stopping and 7 percent spacing), and Costa Rica with 22 percent (10 percent stopping and 12 percent spacing). This dynamic model widened the applicability of the measurement of unmet need for contraception through inclusion of birth spacers and method failure as prime cause of “unwanted” pregnancy leading to women giving birth each year. Further, these findings implied that, there existed a substantial unexploited potential demand for contraception, which could not be accounted for by birth spacers.

An improvement was made by (Westoff, 1988) on the operational concept of unmet need for contraception by incorporating previous conceptual frameworks as suggested by other cogent demographers. This refinement classified women according to pregnancy planning strategy (intentional or unintentional), whether using contraceptive at time of conception and behavioral index on fecundity. At issue was the status of unintended pregnancy whose occurrence is classified as mistimed pregnancy if it occurred at inadvertent or inopportune time, or unwanted pregnancy that happens when parents had no desire for a child/ more children. By combining the “current status” and the “dynamic” models, the “Original” algorithm was developed which classified women into 10 categories. These subsets included: using contraception to space; using contraception to limit; unmet need to space; unmet need to limit; spacing failure; limiting failure; desires a birth within two years; never had sex; no sex/ want to wait; or infecund. Using the “Original” algorithm on CPS data for the five Latin American countries delineated into spacing and limiting, unmet need for limiting was higher (median=22) than for spacing childbearing (median=13). The results for individual countries were: Brazil had 14.9 percent (6.5 percent spacing and 8.4 percent stopping), Colombia had 16 percent (6.6 percent spacing and 9.3 percent stopping), Dominican Republic had 20.8 percent (11.0 percent spacing and 9.8 percent stopping), Ecuador had 25 percent (11.8 percent spacing and 13.1 percent stopping) and Peru had 29.4 percent (8.9 percent spacing and 20.5 percent stopping). The distinct improvement, of this “Original” algorithm was that it was a “current status” measure, which delineated potential demand for contraception into spacing or limiting. Secondly, it categorized women according to planning of current pregnancy or recent amenorrheic status since those who were unintentional were classified as spacing or limiting unlike being omitted in previous measures and, omission of abortion as contraceptive method. A recommendation was made for further improvement to consider inclusion of method failure, sexual activity and behavioral index on infecundability.

Building on the “Original” algorithm, the Technical Expert Working Group (TEWG) led by (Bradley et al., 2012) made revisions and modifications culminating into the “Revised” algorithm which classified the previous 10 categories into four: Met need; unmet need; no unmet need, and menopausal/ infecund. This “Revised” algorithm improved ease of use, precision, reliability and comparability across countries and over time thereby earning accolades from demographers. This “Revised” algorithm which is currently in use since 2012, has been applauded as sturdy and produces consistent, comparable and nationally representative hypothetical estimates of family planning needs and demand (Bradley & Casterline, 2014). The revision encompassed: Removing inconsistently collected data; avoided categorizing women with missing data as having unmet need; simplified classification of unmet need for spacing and limiting by inclusion of “wantedness” of current pregnancy/ last childbirth; shortened duration for consideration of postpartum amenorrheic from five to two years; standardized calculation of infecundity; and, explicitly provided directions on handling inconsistencies during DHS exercise. Using the “Revised” algorithm, the estimates for unmet need of contraception from 169 DHS conducted in 70 countries worldwide were compared

with those of the Original algorithm. This comparison showed that overall there was a 1.7 percentage point (mean difference from -1.3 to 6.3) increment from 21.4 to 23.1 percent for unmet need for contraception. Specifically for Kenya, there was a decrease by 0.2 percentage points in 1993, an increase by 4.1 and 2.8 percentage points in 1998 and 2003 and no change for 2008/09 DHS. Bringing to the fore, a consensus was to adopt the 'Revised' algorithm as the accepted standard approach for estimating unmet need for contraception since 2012, though issues of husbands' aspect of coital interaction (Bradley & Casterline, 2014) and classification issues (Westoff & Bankole, 1996) had not been wholly scrutinized.

This paper therefore, proposes further investigation of husband's virility issues that are hardly considered during estimation of unmet need for contraception leading to classifying a pool of women with "no unmet need" to "unmet need" for contraception. Genuinely some women may abstain from contraception use with a notion of reduced conception risk occasioned by their husbands' loss of virility possibly emanating from genetic, health, social or lifestyle factors. The genetic factors include; (azoospermia- No measurable sperm from the fluid ejaculated during orgasm (semen) and this is prevalent in one percent of all men (Gudeloglu & Parekattil, 2013), aspermia - complete absence of semen from ejaculate – dry ejaculate (Mehta & Sigman, 2015), undescended testicles, and other genetic defects); Health problems (diabetes, testicular or prostate cancer, sexually transmitted infections, chronic disease); Social problems (stress, depression, hormonal imbalance) or Lifestyle factors - habituation, asexual, trauma (Bogaert, 2015; Call et al., 1995; Punab et al., 2017). Such reasons exuded by reproductive age women as a justification for contraceptive nonuse, are often analyzed using the "Revised" algorithm" as "unmet need" for contraception but they should be analyzed as "no unmet need" for contraception. This is informed by the fact that such a reproductive age woman is genuinely not in need of contraception, because despite exposure to pregnancy there is minimal risk of conception based on husbands' virility loss. When the aspect of husband's virility issue is overlooked, there is a high likelihood of generating estimates of unmet need for contraception that are overestimated as proven in a separate manuscript by this Author.

Discussion of Evolution of Unmet Need for Contraception

Unmet need for contraception is an invaluable and widely used concept for measuring how populations' contraception needs are met, and reveals the size of potential unfulfilled demand for contraception. The concept of unmet need for contraception may seem spurious and inexplicable owing to women's unique and ambivalent behavior in fertility preference and contraceptive use. This concept thus, has attracted various contextual interpretation that may include connotations such as failure by a woman to translate pregnancy protection behavior into practice; women's low opinion on pregnancy risk; contraceptive use does not predict subsequent fertility behavior in the expected direction (Bongaarts, 2014, 2017a; Bradley & Casterline, 2014; Casterline & El-Zeini, 2014; Cleland et al., 2014) and issues attendant to complexities in conceptual, methodological and measurement frameworks.

This inexplicit conceptualization did elevate unmet need for contraception into the same platform of the fertility discussion with contraceptive prevalence rate, which is conventionally known to accelerate fertility decline and therefore may serve as proxy indicator. Cognizant that unmet need for contraception identifies unfulfilled contraception demand, these invaluable estimates are used globally as justification for increased resource allocation for family planning programs; evaluating Country's family planning policies and programs on meeting populations' contraception felt needs and demand; monitoring achievement of United Nations sustainable development goal 3.7.1; a hypothetical link between population growth concerns

and women's ability to practice reproductive rights at own volition; and, a valuable link between human rights and feminist approach on matters fertility regulation and demographic dividends (Bongaarts, 2014; Bradley & Casterline, 2014; Cleland et al., 2014; UNDESA, 2015).

Recognizing that, unmet need is a key indicator of fertility decline, this serves as backdrop for a rigorous review of revised algorithm to provide more refined and reliable estimates. For example, (Bongaarts, 2017b), documented some errors attendant to measurement of unmet need for contraception which included: Delayed impact of contraception; exposure to risk of pregnancy; overlap of postpartum infecundability; contraceptive effectiveness, and confounding effects of variations in the age structure of women. In addition to identified challenges, the reviewed literature regarding the concept of unmet need for contraception has consistently and exhaustively addressed associated variables for contraceptive nonuse save for the critical issue of coital interaction. As noted by (Bradley et al., 2012), even the "Revised" algorithm was skeptical on addressing coital interaction issues owing to its spurious nature including sensitivity, preserve of couples' confidentiality, liable to under-reporting especially among pubescent, and complexities concomitant with inability to measure intensity or frequency that satiates conception.

While the main reason for using birth control methods is to circumvent the risk of getting pregnant specifically among married women who are highly susceptible due to coital interaction, some may abstain cognizant of reduced risk of conception. In the same vein, such married women may opt out of contraception in full conscience of diminished risk of conception due to spousal virility loss that diminishes the elixir of life of ejaculate to fertilize. During estimation of unmet need for contraception using the "Revised" algorithm, such pool of women within this unique situation, are considered as having unmet need but in reality they have "no unmet" need for family planning. Concurring with argument by (Westoff & Bankole, 1996) that not all women classified as having unmet need for contraception are so, and considering re-categorization of this pool of women, there is need to modify "Revised" algorithm and quantify resultant overestimation.

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