

Factors Associated with Menstrual Cognition Development among Menarche, Menstruating, and Menopausal Women in Coimbatore, Tamil nadu, India.

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Abstract: Several decades of research resulted in an abundance of cultural, social, clinical, logical understanding of menstrual practices. From these researches it was understood that the society encompass itself many socio-cultural norms, customs, beliefs, taboos, stigmas and behaviours related to menstruation. Menstrual practices and restrictions have been transmitted through generations. Girls who attain puberty are bound to adopt theses cultural belief systems as it is the nomenclature put forth by the family, friends, religion and other social institutions that shapes the society. According to (Sellers, Machluf, & Bjorklund, 2018) How a person perceives, thinks, and comprehends the world through the interaction of genetic and learning factors is known as cognitive development. Objective: To identify the factors that helped in menstrual cognition development among Menarche, menstruating and menopause women in Coimbatore, Tamil Nadu, India. Methodology: A Cross-sectional study was carried out among 450 women. The samples were divided into 3 categories, 150 women who attains puberty recently (menarche), 150 menstruating women, and 150 menopause women from Coimbatore, Tamilnadu. Results and Analysis: The significance of each factor was assessed using the KMO value of 0.915, and the factors were categorized into four categories namely "Micro system", "Meso system", "Exo system", and "Macro system". The reliability of the data was also assessed using the Cronbach's Alpha with the value of 0.716, 0.790, 0.832 and 0.940 respectively. Understanding these systems and their complex interactions is essential. More insights can be gained by, parents, teachers, institutions, social organizations developers, and policymakers to develop supportive interventions that promote healthy cognitive development among individuals. The identified factors "Micro system", "Meso system", "Exo system" and "Macro system" plays a vital role in acquiring information and knowledge about menstrual practices which helps them to develop their menstrual cognition. This study tries to prove the relationship between the four factors identified by Urie Bronfenbrenner.

Keywords: Cognitive development, Menstrual Cognition, Knowledge accumulation, Menstrual practices, Micro system, Meso system, Exo system, Macro system.

INTRODUCTION

Several decades of research resulted in an abundance of cultural, social, clinical, logical understanding of menstrual practices. From these researches it was understood that the society encompass itself many socio-cultural norms, customs, beliefs, taboos, stigmas and behaviours related to menstruation. Menstrual practices and restrictions have been transmitted through generations. Girls who attain puberty are bound to adopt theses cultural belief systems as it is the nomenclature put forth by the family, friends, religion and other social institutions that shapes the society. According to (Sellers, Machluf, & Bjorklund, 2018) How a person perceives, thinks, and comprehends the world through the interaction of genetic and learning factors is known as cognitive development. So here in this study the researcher intends to identify the factors that helped in menstrual cognition development among Menarche, menstruating and menopause women in Coimbatore district of Tamil Nadu which will help the researchers to collect information from the menstruating girls about where do they collect information on menstruation and how do they develop that into their cultural practices.

Developments in science and medical research have contributed to a significant increase in the amount of information available about menstruation. This information helped the policy makers and the general public to improve their knowledge on menstrual health and hygiene management. This information also helped open up the forum for discussions about menstrual equality, de-stigmatization, and the importance of comprehensive education on menstrual health and hygiene for every woman. Yet there is a need to dig this problem further to understand the source from where these young girls acquire the knowledge on menstruation and develop their menstrual cognition.

Menstrual cognition is all about acquiring information and converting that into knowledge on menstruation which naturally leads into their beliefs and customs. There is a necessity to develop an instrument to collect information from the menstruating girls from where do they collect information on menstruation and how do they develop that into their cultural practices. The reasons for Stigmatizing menstruation and considering menstruation as impure are all the consequences of the menstrual cognition. So, the researcher believed it is important to study the factors associated with development of menstrual cognition.

Keeping in mind this proposed objective the researches pertaining to this topic were reviewed.

REVIEW OF LITERATURE

(Kiera MacLean, 2019) investigates the stigma and taboos surrounding menstruation in Kenya, focusing on the experiences of young women. The study demonstrates how the idea that menstrual blood is dangerous and contaminated has led to restrictive behaviours and limitations on women's reproductive systems. According to the authors, situations in which the individuals lack access to sanitary products are from economically underprivileged. The article explores the connection between gender and material injustices.

(Dana Smiles, 2017) explores the challenges and experiences that Ethiopian girls face during their menstrual cycle. The study found that menstrual taboos, cultural beliefs, and restrictive social expectations related to menstruation and interpersonal interaction have a negative impact on girls' health, education, safety, and independent thinking. The article highlights the significance of menstrual health in promoting girls' rights to health, education, and non-discrimination as well as their overall well-being.

(Bronfenbrenner, 1979) A child's environment is made up of nested structures that are arranged one inside the other, according to Bronfenbrenner. He ranked them in order of how much of an impact they have on children. He named these organizational units as the "macrosystem", "chronosystem", "exosystem", "mesosystem", and "microsystem". These five systems interact with one another and determines child's cognitive development. According to Bronfenbrenner's theory "Micro system" constitutes of Family, Peers, School, Religion, Neighbours followed by the "Meso system" includes Interaction between "Micro system" and the third level is called as "Exo system" where Media, Government, Parent's friends, Extended Family and "Macro system" includes Culture, Social Norms and Economic conditions.

(Blažević, 2016) The author classified theories of cognition development into four namely the theory of social learning by Albert Bandura, Socio-cultural theory by Lev Vygotsky, Bronfenbrenner ecological theory (1979) and Erikson's theory of psychosocial development (1950). This research borrowed the concepts of "micro system", "meso system", "exo system" and "macro system" from Urie Bronfenbrenner ecological theory (1979) for developing the factors related to menstrual cognition.

(Jonathan R. H. Tudge, 2017) This article discusses the significance of the ecologic theory by Urie Bronfenbrenner on children's education. The theory lays an emphasis on how a child's environment shapes his/her cognitive development, particularly the interactions and activities that happen in different contexts such as the home, school, and community.

(Härkönen, 2007) Urie Bronfenbrenner's ecological systems theory of human development and socialization is covered in this article. The study emphasizes the importance of the child's environment and its impact on their cognitive development. The researcher also quoted how different systems such as "micro system", "meso system", "exo system" and "macro system" play pivotal role in the child's cognition development.

(Dr. R. Rama Prabha, 2023) developed a scale to measure menstrual information-seeking attitude among school girls from Coimbatore district Tamil nadu. The study established that there are three important factors were the main sources in disseminating menstrual health information to schoolgirls viz., the mass media, organizations, and interpersonal relationships. The reliability coefficients of the scale were also found to be significant.

Having read the relevant literatures, the objective was developed.

OBJECTIVE OF THE STUDY

To identify the factors that helped in menstrual cognition development among Menarche, menstruating and menopause women in Coimbatore, Tamil Nadu, India.

METHODOLOGY

A Cross-sectional study was carried out among 450 women. The samples were divided into 3 categories, 150 women who attains puberty recently (menarche), 150 menstruating women, and 150 menopause women from Coimbatore, Tamilnadu. The women were given Questionnaire which contains questions about their demographic details and statements regarding their menstrual knowledge accumulation pattern. A 5-point Likert scale was adopted for assessing the statements (5 Strongly Agree, 4 Agree, 3 Neutral, 2 Disagree, and 1 Strongly Disagree).

DATA ANALYSIS

To categorize the factors, a principal axis factor analysis was carried out. Four factors were identified after the exploratory factor analysis. Factor 1 was named as "Micro system", Factor 2 was named as "Meso system", Factor 3 was named as "Exo system", and Factor 4 was named as "Macro system". The names of these factors were borrowed from (Bronfenbrenner, 1979). The statements under each factors were adopted from (Bronfenbrenner, 1979) and (Dr. R. Rama Prabha, 2023) were then modified appropriately for this study. KMO and Bartlett's Test was carried out which proved significant with 0.915 value. Cronbach's alpha coefficients demonstrate a significant value of 0.716, 0.790, 0.832 and 0.940 respectively "Micro system", "Meso system", "Exo system" and "Macro system".

Table.1. (KMO and Bartlett's Test)

| KMO and Bartlett's Test | | |
|--|--------------------|-----------|
| Kaiser-Meyer-Olkin Measure of Sampling Adequacy. | | .915 |
| Bartlett's Test of Sphericity | Approx. Chi-Square | 17271.504 |
| | df | 496 |
| | Sig. | .000 |

Table.2 (Rotated Component Matrix)

| Rotated Component Matrix | | | | |
|---|-----------|------|------|------|
| | Component | | | |
| | 1 | 2 | 3 | 4 |
| I get information about Menstruation from my parents | .628 | | | |
| I get information about Menstruation from my siblings | .616 | | | |
| I get information about menstruation from my friends | .537 | | | |
| I get information about menstruation from my teachers | .883 | | | |
| I learnt information about menstruation from textbooks | .847 | | | |
| I have attended counselling arranged by my school | .843 | | .453 | |
| I get information about menstruation from my neighbors | .496 | | .406 | |
| I learnt about menstrual practices from religious textbooks | .688 | | | |
| I learnt about menstrual practices from our religious belief | .592 | | .497 | |
| I interact about menstruation often with my family members | | .750 | | |
| I interact about menstruation often with my friends | | .640 | .510 | |
| I interact about menstruation often with my teachers | | .854 | | |
| My family's values and expectations influence my understanding and actions about menstrual practices | | .642 | | .438 |
| My friend's values and expectations influence my understanding and actions about menstrual practices | | .590 | | |
| My school's values and expectations influence my understanding and actions about menstrual practices | | .600 | | |
| My community's values and expectations influence my understanding and actions about menstrual practices | | .661 | | .420 |
| My religion's values and expectations influence my understanding and actions about menstrual practices | | .617 | | .547 |
| I get information about menstruation from social media | .464 | | .935 | |
| I get information about menstruation from mass media | | | .943 | |
| I get information about menstrual practices from Google (Search Engines) | | | .940 | |
| I get information about menstruation from Government Websites | .421 | | .868 | |
| I get information about menstruation from newspapers/magazines | | | .862 | |
| I collect information about menstruation from TV | | | .851 | |
| I learnt from government of India advertisement on menstruation | | .441 | .864 | |
| I get information about menstruation from my Parent's friends | | | .613 | |
| I get information about menstruation from my cousins | | | .558 | |
| I get information about menstruation from my Grandparents | | | .593 | |
| I learnt about menstruation from our culture | | | | .807 |
| I learnt about menstrual practices from our cultural beliefs | .493 | | | .860 |
| I learnt about menstruation from our traditional practices | | | | .851 |
| I learnt about menstruation from our social norms | .502 | | | .886 |
| I learnt about menstruation from our society | | | | .832 |
| Rotation converged in 8 iterations. | | | | |

Table.3 (Factor Loadings)

| Items | F1 | F2 | F3 | F4 |
|---|------|------|------|------|
| I get information about Menstruation from my parents | .628 | | | |
| I get information about Menstruation from my siblings | .616 | | | |
| I get information about menstruation from my friends | .537 | | | |
| I get information about menstruation from my teachers | .883 | | | |
| I learnt information about menstruation from textbooks | .847 | | | |
| I have attended counselling arranged by my school | .843 | | | |
| I get information about menstruation from my neighbors | .496 | | | |
| I learnt about menstrual practices from religious textbooks | .688 | | | |
| I learnt about menstrual practices from our religious belief | .592 | | | |
| I interact about menstruation often with my family members | | .750 | | |
| I interact about menstruation often with my friends | | .640 | | |
| I interact about menstruation often with my teachers | | .854 | | |
| My family's values and expectations influence my understanding and actions about menstrual practices | | .642 | | |
| My friend's values and expectations influence my understanding and actions about menstrual practices | | .590 | | |
| My school's values and expectations influence my understanding and actions about menstrual practices | | .600 | | |
| My community's values and expectations influence my understanding and actions about menstrual practices | | .661 | | |
| My religion's values and expectations influence my understanding and actions about menstrual practices | | .617 | | |
| I get information about menstruation from social media | | | .935 | |
| I get information about menstruation from mass media | | | .943 | |
| I get information about menstrual practices from Google (Search Engines) | | | .940 | |
| I get information about menstruation from Government Websites | | | .868 | |
| I get information about menstruation from newspapers/magazines | | | .862 | |
| I collect information about menstruation from TV | | | .851 | |
| I learnt from government of India advertisement on menstruation | | | .864 | |
| I get information about menstruation from my Parent's friends | | | .613 | |
| I get information about menstruation from my cousins | | | .558 | |
| I get information about menstruation from my Grandparents | | | .593 | |
| I learnt about menstruation from our culture | | | | .807 |
| I learnt about menstrual practices from our cultural beliefs | | | | .860 |
| I learnt about menstruation from our traditional practices | | | | .851 |
| I learnt about menstruation from our social norms | | | | .886 |
| I learnt about menstruation from our society | | | | .832 |

The Kaiser-Meyer-Olkin (KMO) test evaluates the reliability of the data for Factor Analysis and the appropriateness of the sampling for each variable. The accepted KMO values are greater than or equal to 0.50. As a result, after carefully examining and eliminating any values that were less than 0.5, the exploratory factor analysis found four factors that correlated with the samples' responses.

Table.4 (Cronbach Alpha)

| Factors | Cronbach Alpha |
|---|----------------|
| Micro system (Family, Peers, School, Religion, Neighbours) | 0.716 |
| Meso system (Interaction between Microsystem) | 0.790 |
| Exo system (Media, Government, Parent's friends, Extended Family) | 0.832 |
| Macro system (Culture, Social Norms, Economic system) | 0.940 |

The reliability of the construct was assessed using the Cronbach alpha test, and the findings for all four factors were considered to be significant.

RESULTS AND ANALYSIS

The factors associated with menstrual cognition development among Menarche, menstruating and menopause women in Coimbatore, Tamil Nadu, India were identified. The results from test and retest method found satisfactory for all items. The study establishes the fact that the following four factors namely "Micro system", "Meso system", "Exo system" and "Macro system" are used to acquire information and knowledge regarding menstrual practices among Menarche, menstruating and menopause women in Coimbatore, Tamil Nadu, India. "Micro system" is getting information from the immediate surrounding such as Family, Peers, School, Religion and Neighbours. "Meso system" comprises of interaction between different micro systems. "Exo system" is getting information from outside environmental elements, such as Media, Government, Parent's friends and Extended Family. "Macro system" includes the larger social and cultural influences such as beliefs, values, and customs that mould a person's growth (Bronfenbrenner, 1979). The Ecological model developed by Urie Bronfenbrenner provides a framework for comprehending the variables influencing an individual's cognitive development. The ecological model not only describes the various domains of influence but also shows how the systems dynamically interact, encompassing the direct relationships at the "Micro system" level to the broader societal, cultural, and historical factors.

It is important to understand these systems and the intricate relationships between them. The study helped parents, teachers, institutions, social organizations developers, and policymakers to gain more insights to develop supportive interventions that promote healthy cognitive development among individuals. The identified factors "Micro system", "Meso system", "Exo system" and "Macro system" plays a vital role in acquiring information and knowledge about menstrual practices which helps them to develop their menstrual cognition. This study tries to prove the relationship between the four factors identified by Urie Bronfenbrenner.

SCOPE FOR FUTURE STUDY

Many people believe that talking about menstruation is a taboo. As a result, there was a dark silence regarding research on this subject. Further research in this area is necessary to identify the issues related to women's reproductive health. The findings of the research would give a clear picture on the factors of cognitive development on menstrual practices amongst the group of menarches, menstruating and menopause women and girls. This would be beneficial for government officials and policymakers to develop and launch programmes and policies aimed at empowering women and girls.

CONFLICT OF INTEREST

There was no conflict of Interest.

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