

Applicability of Theory of Planned Behavior in understanding Breastfeeding Intention of Postpartum Women

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Abstract

Background–Health professionals currently use fact-based approaches to promote breastfeeding behaviour amongst women in Kenya. This practice only imposes messages to women without considering their opinions and beliefs posing a challenge to optimal breastfeeding behaviour.

Purpose– The aim of this study was to identify factors that would influence the breastfeeding intention to practise optimal breastfeeding behaviour of postpartum women in maternity wings.

Methodology– A cross-sectional study based on the adapted and modified model from Ajzen's Theory of Planned Behaviour was utilized. Proportionate stratified sampling was used to select 220 respondents out of 1,520 women from the sampled maternity wings. A structured questionnaire was used to collect interview responses from women with one day old infant(s) from the maternity wings.

Findings– Attitude significantly influences breastfeeding intention to practise optimal breastfeeding behaviour ($\beta=0.86$, $p<0.001$, $n=220$); and direct perceived behavioural control slightly influences breastfeeding intention to practise optimal breastfeeding ($\beta=0.07$, $p<0.05$, $n=220$).

Research implications– More variations of results could be gained through a wider coverage of respondents. Other factors such as descriptive characteristics and perceived usefulness should be used to increase the explanatory power of the dependent variable. A comparison of the same study of explanatory power between other intention-based model could give another valuable contribution.

Keywords: Breastfeeding Intention, Optimal Breastfeeding Behaviour, Prenatal Clinic, Postnatal Clinic, Maternity Wing, Developing countries.

Introduction

Breastfeeding in Kenya is nearly universal, however breast milk substitutes are often offered to infants within the first month of birth (WHO, 2007). Based on health records these mothers attend Maternal Child Health clinics on weekly basis but still low breastfeeding prevalence has been documented (UNICEF, 2007). In Western Kenya, initiation of breastfeeding within the first hour after birth has been reported to be at 30.7 percent, exclusive breastfeeding for less than 4 months at 21.7 percent and continued breastfeeding to the second year at 27.5 percent (CBS, MOH & ORC MACRO, 2004). Though evidence shows that the health ministry has trained its workers on strategies of improving breastfeeding behaviour, they have unsuccessfully promoted it. This may be a serious threat to our economy since national resources are being spent to uphold the behaviour within our health care systems but success is not optimal. Health workers could be aware of this health problem yet there is limited documented data on psychosocial factors that

affect mother's certainty as an individual to scrutinize the importance of practicing optimal breastfeeding behaviour. Currently most Maternal Child Health clinics in Western Kenya use fact-based approach to promote optimal breastfeeding behaviour amongst mothers, which only imposes messages to breastfeeding mothers without considering their opinions and beliefs (Mutuli, Walingo & Othuon, 2012). Consequently increasing breastfeeding continuation rates has become a key challenge for health professionals in Kenya (Mutuli, Walingo & Othuon, 2012). The decline in optimal breastfeeding has led to an increase in the prevalence of dual burden of protein energy malnutrition in Western Kenya (Melissa, 2008). Previous research has not explained why sub-optimal breastfeeding is so persuasive amongst women with infants and how this issue can be addressed. Breastfeeding intention is reflected not only from the woman's attitude but also by norms and social expectations communicated by the woman's social networks. Correspondingly the role of attitude, social expectations, self-efficacy and social networks has been

positively associated with predicting breastfeeding intention (Al-Akour *et al.*, 2010; Gross, 2008; Gijsbers *et al.*, 2007) but has not been studied amongst women in the rural Kenya. Factors such as environmental, socio-demographic, behavioural and psychosocial determine the decision to breastfeed, (Gijsbers *et al.*, 2007). However there is limited information on psychosocial factors which include attitude, subjective norm and perceived behavioural control, (Mutuli, Walingo & Othun, 2012). Gaining specific perspective on how women with infants view breastfeeding will provide insight into some of the factors influencing optimal breastfeeding behaviour, in addition to breastfeeding education. This study utilized the Theory of Planned Behaviour so that to identify factors that would influence the breastfeeding intention to practise optimal breastfeeding behaviour of postpartum women in maternity wings. It is very important to identify and address some of the assumptions and factors of breastfeeding at initial stage so that to ensure optimal breastfeeding behaviour in the future. With increase in sub-optimal breastfeeding, the need to predict behavioural intentions of women should be increased. This study will provide information on factors that influence and affect a woman's intention to optimally breastfeed. In addition, the result of this study could serve as a guideline for promoting optimal breastfeeding behaviour in prenatal and postnatal clinics; understand the factors that need to be instilled to enhance optimal breastfeeding amongst primiparous and multiparous women.

Literature Review

Theory of Planned Behaviour

The theoretical model applied in this study is based on Theory of Planned Behaviour (TPB) (Ajzen, 1991). The TPB (Ajzen, 1991) is an expansion of Theory of Reasoned Action (TRA) and that was developed to fill the gap in the TRA (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980). TPB deals with behaviour where people have incomplete control over it (Ajzen, 2002). An extension of TRA, TPB is composed of attitude towards the behaviour, social factor called subjective norm and an added variable which is the degree of perceived behavioural control (PBC) (Ajzen, 1985, 1991 & 2002). PBC is the additional construct that was added to address the limitations in TRA (Ajzen, 1985, 1991 & 2002). The TPB model by Ajzen (1985) is shown in Figure 1.

Hypotheses Development

Attitude: Attitude is the certainty of the likely outcomes of behaviour and evaluation of these outcomes (behavioural beliefs). Attitudes are considered as beliefs about the outcome of the related behaviour weighed by the value of the outcome. In this context attitude was the

psychological tendency of respondents expressed by respondents' value to have a breastfeeding intention to practise optimal breastfeeding behaviour. Attitude has long been identified as a construct that guides future behaviour. In TRA, attitude is referred to as the evaluative effect of positive or negative feeling of individuals in performing a particular behaviour (Fishbein & Ajzen, 1975). In breastfeeding domain, the more positive the attitude a respondent has towards the value, the enhanced breastfeeding intention thus the outcome of optimal breastfeeding behaviour. Research has shown the significant outcome of attitude towards intention (Duckett *et al.*, 1998; Kloebler-Tarver, Thompson & Kathleen, 2002; Ramayah *et al.*, 2005; Dyson *et al.*, 2010). Hence, the proposed hypothesis is:

H1. Attitude towards optimal breastfeeding behaviour will be positively related to breastfeeding intention.

Subjective norm. Subjective norm is an original construct from Theory of Reasoned Action that deals with the influence of social environment or social pressure on the individuals and thus on behavioural intention (Fishbein & Ajzen, 1975). Subjective norm is defined as the person's perception of social pressure to perform or not perform the behaviour under consideration; it deals with perceived normative prescriptions of behaviour (Ajzen, 1988). For the current study subjective norm was defined as the respondent's perception of the likelihood that the potential referent group or individuals will approve or disapprove of her breastfeeding intention to optimally breastfeed; the degree of influence from social referents will affect breastfeeding intention to optimally breastfeed. In TRA subjective norm is shown as a direct determinant of behavioural intention (Fishbein & Ajzen, 1975). The justification to this, under significant social influence and social pressure is that an individual would perform the behaviour under consideration even though the individual is not in favour of performing the behaviour (Venkatesh & Davis, 2000). Studies have shown mixed result regarding subjective norm as a predictor of intention. Some studies have shown no significant relationship between subjective norm and intention (McLachlan & Forster, 2006; Dodgson *et al.*, 2003) while others have shown significant relationship between subjective norm and intention (Wise *et al.*, 2006; Bai, 2007; Stockdale *et al.*, 2008). The model using the TRA and TPB framework has shown subjective norm to have significant relationship with intention. Consequently, it can be suggested, subjective norm have significant effect on breastfeeding intention to optimally breastfeed.

Thus, the hypothesis proposed is:

H2. Subjective norm will be positively related to breastfeeding intention to optimally breastfeed.

Perceived behavioural control. The control belief in TPB is represented by PBC. The construct of PBC was added into the model to fill the gap in TRA (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980), in an effort to deal with

situations where individuals may lack complete volitional control over the behaviour (Ajzen, 1991 & 2002). PBC is defined as, given the presence or absence of requisite resources and opportunities, the individual's perception of the ease or difficulty in performing the behaviour of interest (Ajzen, 1991). In summary, the practise of a given behaviour is correlated to the confidence of the individual in his/her ability of performing the behaviour (Ajzen, 1991). PBC is assumed to reflect on past experiences and partly from second hand information through the exchange of information by family, friends and factors that may control the level of perceived difficulty of performing the behaviour of interest (Ajzen, 1991). In this study, perceived behavioural control was defined as the degree of anticipated ease or difficult of developing a breastfeeding intention to practise optimal breastfeeding behaviour and confidence in the ability to carry out the behaviour. Given the increase in resources (breastfeeding knowledge, breastfeeding support and time) and opportunities, the greater is the perceived control of breastfeeding intention to optimally breastfeed and thus the more likely is the practise of optimal breastfeeding. Studies have shown that PBC accounted for considerable variance in intention and behaviour hence there was a positive relationship between PBC and intention (Jen-Ruei, Cheng-Kiang & Wen-Pin, 2006; Gross, 2008). Therefore with provision of resources and opportunities, the higher the confidence of a woman's ability in developing a breastfeeding intention to optimally breastfeed, the more likely she will optimally breastfeed. Hence, the hypotheses formulated are:

H3. PBC will be positively related to breastfeeding intention to optimally breastfeed.

H4. PBC will influence practise of optimal breastfeeding behaviour.

Behavioural Intention. Intention is an immediate antecedent of behaviour and is defined as the perception of an individual towards performance of a particular behaviour (Fishbein & Ajzen, 1975). In this study breastfeeding intention was defined as the degree of certainty about practising optimal breastfeeding behaviour. In TRA, Fishbein and Ajzen (1975) intention is defined, "as a person's location on a subjective probability dimension involving a relation between herself and some action". In TRA (Fishbein & Ajzen, 1975; Ajzen & Fishbein, 1980), intention is predicted by attitude and subjective norm. In the extension of TRA, the TPB (Ajzen, 2002) the antecedent of intention are attitude towards the behaviour, subjective norm and the degree of PBC. When behaviour is under the individual's control, intention can predict actual behaviour with considerable precision (Ajzen, 1988) but this does not mean that the measure of intention and behaviour is in perfect correlation (Fishbein & Ajzen, 1975). There is always strong biasness for individuals to overestimate the possibility of practising essential behaviour and underestimate the probability of not practising the unessential behaviour. In turn this overestimates and

underestimates is assumed to source inconsistencies between intention and the actual behaviour (Ajzen, Brown & Carvahal, 2004). Behaviour and intention illustrates high correlation if the interval time between the intention and the behaviour is low (Fishbein & Ajzen, 1981). Studies also confirm that the interval period between intention and behaviour correlates with the variance explained by the intention based model, choice of infant feeding method (Mutuli, Walingo & Othuon, 2012) teenager smoking intention (Smith *et al.*, 2007) and condom use (Wise *et al.*, 2006). Intention is acknowledged to change overtime, the greater the interval period between intention and behaviour, the greater the likelihood of changes in intention (Ajzen, 1985). The last hypothesis was formulated as follows:

H5. Breastfeeding Intention towards optimal breastfeeding will lead to actual practise of optimal breastfeeding behaviour.

Behaviour. Behaviour in the intention-based model is referred to as a manifestation which is observable, single-act criterion which is performed (not-performed) with respect to a specific target in a given situation at a given point of time (Fishbein & Ajzen, 1975). How hard individuals are willing to attempt, the effort the individuals are planning to exert to perform the given behaviour is the motivational factor captured in intention that subsequently influence behaviour (Ajzen, 1991). Behaviour leading to the achievement of a goal is made up of transitional targets with its own problem of executions (Ajzen, 2002). As stated previously the precision of behaviour prediction will usually decline with the increase in time that intervenes between measurement of intention and observation of behaviour (Ajzen, 1985). Ajzen and Fishbein (2005) identified four factors that leads to poor correlation between intention and behaviour or the factors that influence the strength of behaviour: low intention-behaviour relation; stability of intention; intention-behaviour compatibility; and factual inconsistency. There would be very low correlation between intention and behaviour, when the time interval (stability of intention) between intention and behaviour is high but there is deficient compatibility between measures of intention and behaviour (intention-behaviour compatibility), when individuals do not act on their stated intention (literal inconsistency) and there is low intention-behaviour relation (Ajzen & Fishbein, 2005).

Research model

Based on the above literature the hypotheses generated for the study are shown in Figure 1.

The Theory of Planned Behaviour states that breastfeeding intention is determined by maternal attitude, which reflects the positive or negative feelings towards developing a breastfeeding intention to practise optimal breastfeeding behaviour; subjective norm which describes respondent's insight that other people desire her

to have a breastfeeding intention to practise optimal breastfeeding behaviour while some desire her to practise sub-optimal breastfeeding behaviour; perceived behavioural control which reveals the internal and external constraints the respondent encounters when she attempts to develop a breastfeeding intention to practise optimal breastfeeding behaviour.

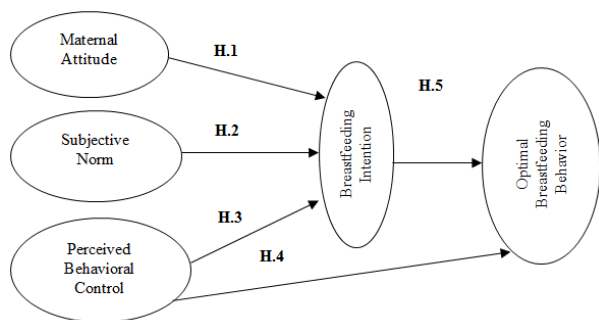


Figure 1: Adapted Breastfeeding Behaviour Model

In this study, it is posited that respondents will be more determined to develop a breastfeeding intention to practise optimal breastfeeding behaviour if they have a positive attitude towards the behaviour, they comply with the wishes of those close to them who desire them to optimally breastfeed and they perceive that they have all the resources required to practise the behaviour.

Methodology

Study Area and Design

The study was conducted within Western Kenya where breastfeeding behaviour is promoted through fact-based approaches which imposes messages to breastfeeding mothers without considering their opinions and beliefs. Five maternity wings from a provincial hospital, district hospital, mission hospital, dispensary and nursing home formed the study site. The maternity wings from which the respondents were selected from had been accredited as a Baby Friendly Hospital Initiative that emphasizes the health benefits of optimal breastfeeding. This cross-sectional study was conducted from April to July 2011 amongst women with one day old infant/s from selected maternity wings of Western Kenya. Permission was obtained from the School of Graduate Studies. Ethical approval was given by National Council for Science and Technology. Research authorization was granted by the Ministry of Public Health and Sanitation. Informed consent was sought from the respondents who were informed on the research procedures, details, and assured of confidentiality.

Sample and procedure

Sampling procedures involved selection of maternity wings and women. Purposive sampling was used to iden-

tify 5 maternity wings for the study with the target that they were accredited as a Baby Friendly Hospital Initiative. Proportionate stratified sampling was used to get the sample size of respondents from each stratum of provincial hospital (105), district hospital (56), mission hospital (28), dispensary (20) and nursing home hospital (11). Random sampling was then employed on each stratum depending on its size to get the final study sample size of N = 220.

Sample criteria included both primiparous and multiparous mothers, those who had been attending prenatal clinics before delivery, and had a healthy term singleton infant with birth weight of more than 2500 grams at birth. The study excluded mothers who had delivered through caesarean, suffered chronic diseases and those on regular medication due to their compromised immunity and metabolic patterning demands owing to afferent signals that indirectly affected breastfeeding unlike the healthy mothers. Participation in the study was voluntary and respondents were not compensated for taking part in the study but were highly appreciated and given a debriefing letter after completion of the interview sessions.

Results

Variables and measurement

All instruments for this study were tailored from diverse literature and were modified to fit the breastfeeding behaviour sphere. The dependent variable which was breastfeeding intention was measured using four items derived from Shih & Fang (2004). Responses were assessed using seven-point Likert scale ranging by “very unlikely” (1) to “very likely” (7) with “neutral” (4) as middle point. Whereas for the independent variable items, seven-point Likert type scale was used to assess, with scale ranging from “strongly disagree” (1) to “strongly agree” (7). Items for attitude, subjective norm, perceived behavioural control and direct perceived behavioural control measurement were derived from Shih & Fang (2004). For the assessment of optimal breastfeeding behaviour the researcher used a dichotomous measure of breastfeeding intention towards optimal breastfeeding behaviour/sub-optimal breastfeeding behaviour.

Prediction of Breastfeeding Intention

Correlation analyses were conducted to explore relationships between breastfeeding intention and each of the measured variables. The results of these analyses were summarized in table 1. The attitude factor produced the most significant correlation with breastfeeding intention for respondents, followed by subjective norm, perceived behavioural control and self-efficacy. These relationships were confirmed in subsequent regression analysis where 68 percent of the variance in breastfeeding intention was explained for the

Table 1: Zero-order correlations between selected Theory of Planned Behaviour

Variables	1	2	3	4	5
Intention	-				
Attitude	0.863**	-			
Subjective norm	0.686**	0.465**	-		
Perceived Behavioural Control	0.576**	0.465**	0.573**	-	
Direct Perceived Behavioural Control	0.261**	0.247**	0.240**	0.232**	-

Table 2: Factor and Reliability Analysis (Antecedents of Behavioural Intention)

Items	Loading	Communality	α
Attitude			
I believe practising optimal breastfeeding is a wise initiative	0.857	0.907	
I believe practising optimal breastfeeding is a good initiative (Eigen value = 0.857; variance =6.827 percent)	0.862	0.920	0.952
Subjective norm			
Health professional (nurses) would think that practising optimal breastfeeding behaviour is a wise initiative	0.683	0.743	
Health professional (nurses) would think I should practise optimal breastfeeding behaviour	0.841	0.836	
My family who are important to me would think that practising optimal breastfeeding behaviour is a wise initiative	0.876	0.857	
My family who are important to me would think that practising optimal breastfeeding behaviour is a good initiative	0.909	0.897	
My family who are important to me would think I should practise optimal breastfeeding behaviour (Eigenvalue = 7.813; variance = 60.242 percent)	0.897	0.863	0.945
Perceived Behavioural Control			
I would be able to practise optimal breastfeeding behaviour	0.849	0.796	
I have the resources that will facilitate practise of optimal breastfeeding behaviour	0.890	0.835	
I have the breastfeeding knowledge that will facilitate practise of optimal breastfeeding behaviour	0.895	0.873	
I have the ability that will facilitate practise of optimal breastfeeding behaviour (Eigen value = 2.831; variance = 19.243 percent)	0.923	0.895	0.941

respondents $\{F(160, 220) = 65.72, P < 0.001; \beta = 0.86$ (attitude), $\beta = 0.68$ (subjective norm), $\beta = 0.58$ (perceived behavioural control), $\beta = 0.26$ (direct perceived behavioural control)}.

Explaining Breastfeeding Intention

To gain insight into the factors influencing the breastfeeding intention making process of women regarding optimal breastfeeding behaviour, the researcher correlated the indirect beliefs of each of the measured constructs (outcome evaluation \times behavioural belief for attitude; normative belief \times motivation to comply for subjective norm; control belief \times self-efficacy for perceived behavioural control) with intention. Consistent with the findings of the respondents, these results suggested that the naturalness of optimal breastfeeding was an important consideration ($r = 0.726, p < 0.001$) as was perceived bonding between the infant and woman, ($r = 0.652, p < 0.001$). The intention to optimally breastfeed was also significantly related with woman's breastfeeding knowledge ($r = 0.614, p < 0.001$) thus this reinforces the finding that optimal breastfeeding behaviour might be more likely practised if knowledge of probable benefits. Respondents appeared to attach much importance to the potential health benefits not just to the baby ($r = 0.682, p < 0.001$) but also to themselves ($r = 0.623, p < 0.001$). Besides social support emerged as a significant concern for all respondents particularly in relation to the family members ($r = 0.832, p < 0.001$) and health professionals (nurses) ($r = 0.824, p < 0.001$).

Goodness of Measure

This study utilized factor analysis which is a data reduction technique that determined if items are tapping into the same construct. During factor analysis, factors with eigen value of less than one would be rejected and factors with eigenvalue of more than one would be retained for further analysis (Hair *et al.*, 2006). During factor analysis, if the eigenvalue is close to 1 then the factor could be considered for inclusion (Hair *et al.*, 2006). For limiting the concern of cross loading, if the differences of loadings of any item across factors were less than 0.10 then items will be deleted (Snell & Dean, 1992). The degree to which measures are free from random errors was determined by reliability tests. Cronbach's reliability analysis was applied to identify how well the items grouped are positively correlated to one another. Cronbach's a value of 0.70 and above is considered to be reliable (Nunnally & Bernstein, 1994). A value of 0.70 and above indicates items are homogenous and assessing similar construct. A value of 0.60 would be deemed the lower value of acceptability (Hair *et al.*, 2006). The result of the factor and reliability analysis is presented in table 2. Factor analysis was conducted on items from attitude, subjective norm and perceived behavioural control. The percentage of variance criterion is an approach based on

attaining a specified cumulative percentage of total variance extracted by successive factors (Hair *et al.*, 2006). The aim is to make certain practical importance for the derived factors by ensuring that they describe at least a specified amount of variance although there is no absolute threshold, in social science research where the measurements are less imprecise solutions that account for 60 percent of the total variance or even less is sometimes considered satisfactory (Hair *et al.*, 2006). Based on the above criterion, from the 13 items, 11 items loaded on three factors. Five items which form subjective norm was loaded in factor 2 with a variance of 60.242 percent, two items from attitude loaded on factor 1 with 6.827 percent and four items from PBC loaded on factor 3 with a variance of 19.243 percent. The total variance achieved is 86.312 percent. Besides, all the Cronbach's values were above 0.90.

Multiple Regression

Multiple regression analysis was conducted to test the relationship between attitude, subjective norm and perceived behavioural control towards breastfeeding intention of practising optimal breastfeeding behaviour. The hypotheses 1, 2, 3 were tested in this first stage of multiple regression analysis. The multiple regression analysis model was significant ($p < 0.01$) with F -value of 62.564. The coefficient of determination (R^2) is 0.602, which indicates that 68 percent of the variation in behavioural intention to practise optimal breastfeeding behaviour is explained by the independent variables (attitude, subjective norm and perceived behavioural control). Meanwhile the adjusted R^2 value was 0.582. The multiple regression analysis in this stage also shows that the tested variables are significant at $p < 0.05$. The β -values (standardized coefficients) for each of the variables are as follows: attitude ($\beta = 0.482$), subjective norm ($\beta = 0.415$) and perceived behavioural control ($\beta = 0.324$), indicating that the independent variables were all positively related to behavioural intention to practise optimal breastfeeding behaviour. Besides from the first stage of the multiple regression analysis, all the hypotheses tested were supported. H3 (PBC is positively related to behaviour intention), H2 (subjective norm is positively related to intention) H1 (attitude is positively related to intention) were supported. Table 3 list the result of the multiple regression.

Discriminant analysis was done to test the association of behavioural intention and perceived behavioural control towards actual practise of optimal breastfeeding. This was done as the measure of breastfeeding behaviour being "optimal/sub-optimal" as such discriminant analysis is the most suitable technique. From the analysis it was found that the model was significant at $p < 0.01$ with the value of χ^2 of 16.459. From the discriminant analysis it was also found that the variance in the actual practise of optimal breastfeeding behaviour can be explained by the both constructs, behavioural intention and perceived

behavioural control. Both the variables (intention and perceived behavioural control) were significant predictors of actual practise of optimal breastfeeding behaviour so H4 and H5 were also supported.

Table 3: Result of Multiple Regression Analysis

Variable	Standardized β
Model Variables	
Attitude	0.482 **
Subjective norm	0.415 **
Perceived Behavioural Control	0.324 **
F	62.564 **
R ²	0.602
Adjusted R ²	0.582

Notes: *p <0.05, **p <0.01

Discussion

According to this study attitude, subjective norm and perceived behavioural control have significant relationship with behavioural intention to practise optimal breastfeeding behaviour. Attitude was found to be the most important factor in predicting breastfeeding intention towards optimal breastfeeding behaviour. Attitude plays a crucial role in determining breastfeeding intention that leads to actual breastfeeding behaviour. A woman's appreciation of optimal breastfeeding and its' perceived benefits are the details that increase the favourable attitude towards optimal breastfeeding intention. By emphasising on the advantages of optimal breastfeeding to the infant and the mother, favourable attitudes are developed. Similarly, with favourable attitude the more likely optimal breastfeeding will be practised. Other studies have also supported maternal attitude to be a significant predictor of breastfeeding behaviour (Bai, 2007; Stockdale *et al.*, 2008). Recently Bai *et al.*, (2010) reported a statistically significant prediction of maternal attitude ($\beta=0.46$, $P=.23$, $n=78$) on exclusive breastfeeding for six months and explained 50.2% ($P < .01$) of variance in mothers' intention. Thus attitude remains an influential construct for breastfeeding intention across the study sample, which emphasizes the importance of breastfeeding education in promotion efforts particularly for public health implication.

Social pressure is accepted as a construct that influences breastfeeding intention towards optimal breastfeeding behaviour in this study. From this study it can be advocated that breastfeeding intention towards optimal breastfeeding could be increased if the women perceive that most of the people who are significant to them want would support there optimal breastfeeding behaviour. This social support is a significant influence towards development of positive breastfeeding intention on the practice of optimal breastfeeding behaviour. Since a woman's decision to optimally breastfeed is influenced by what is socially acceptable, and open to social and cultural influences. With professional support from nurses and motivation from family members and society at large,

societal pressures to sub-optimal breastfeeding will be greatly reduced thus facilitating practise of optimal breastfeeding behaviour.

Perceived behavioural control is also proven to be an antecedent of breastfeeding intention to practise of optimal breastfeeding behaviour. The measure of perceived behavioural control shows that though woman has other obstacles to breastfeeding intention, they are more confident in their ability to practice this behaviour. When a woman has a higher sense of self efficacy regarding breastfeeding, she will react more positively when problems arise, and persist when confronted with those problems (Blyth *et al.*, 2002). Therefore, a significant perceived behavioural control score on breastfeeding behaviour should be associated with lower problem severity perceptions in the practice of optimal breastfeeding (i.e. a positive reaction towards breastfeeding problems). Perceived behavioural control was the belief the woman held over certain factors (work, health status, breastfeeding knowledge, culture, furthering education and career) which may facilitate or impede her practice of optimal breastfeeding. Currently in Kenya, women have access to more education opportunities' consequential in higher possibilities for work outside the home resulting to limited time to optimally breastfeed (Naanyu, 2008). An analysis on the mean duration of breastfeeding in Africa, noted that women with seven or more years of education report shorter duration of breastfeeding than those with none (Witwer, 1993). Like other African women, Kenyan women are increasingly joining the labour force and experiencing changing gender relations, thus inadequate focus on practice of optimal breastfeeding (Cubins, 1991). This challenges breastfeeding promoters particularly health professionals (nurses) in their role of protecting woman's confidence (expectancy to succeed) in breastfeeding with the objective that woman's confidence presides over control factors. Current breastfeeding instructions provided at maternal child health clinics lack the motivational power associated with balancing control factors and expectancy for success (Bai *et al.*, 2010). To support working women' breastfeeding friendly policies and facilities ought to be designed at work places. This incorporates maternity leaves, work shifts, breastfeeding rooms and breastfeeding pumping break. In support of mothers advancing their career, institutions of learning should also initiate baby care centres equipped with breastfeeding rooms and nannies to take care of the infants while the women' study. Generally creation of a supportive environment and boosting a breastfeeding mother's confidence is a key for supporting her to overcome breastfeeding barriers.

Maternal Child Health Implications

Given the importance of attitude in predicting breastfeeding intention towards optimal breastfeeding behaviour, health professionals (nurses) should provide

relevant routine breastfeeding information that can enhance and uphold positive attitude. Health professionals in contact with pregnant women and women with infants can assess their attitudes, reinforce positive findings and offer information to alter negative attitudes and perceptions. Since attitudes contribute to formation of breastfeeding intention that leads to the practise of optimal behaviour. In Kenya breastfeeding mothers value the breastfeeding information from health professionals as compared to any other group of social referents (Mutuli, Walingo & Othuon, 2012). Hence this is an important implication for clinical practice of health professional who should capitalize on this finding; to encourage women attending both prenatal and post-natal clinics to initiate breastfeeding within the first hour of birth; to offer continued support for those who wish to maintain exclusive breastfeeding for recommended periods and continue breastfeeding through the first year. Since social norms formed early, structured and informative on breastfeeding education are appropriate to people close to the breastfeeding woman. Moreover the health professionals (nurses) routine breastfeeding instruction must find the intricate balance between two main motivational components; value for the behaviour and expectancy of success. Since women will only be motivated to engage in optimal breastfeeding if it is perceived to be linked to satisfaction of her need (value aspect) and if there is a positive expectancy for success. Perceived behavioural control also influences breastfeeding intention to practise optimal breastfeeding behaviour. Hence health professionals (nurses) have the responsibility of equipping the women with information and skills that will help uphold their confidence (expectancy to succeed) in breastfeeding with the intention that their confidence will conquer breastfeeding obstacles. Since a woman with a higher sense of self efficacy regarding optimal breastfeeding behaviour will persevere when confronted with breastfeeding barriers.

Limitation and suggestion for future research

The study of breastfeeding intention to practise optimal breastfeeding behaviour is fairly a new knowledge in breastfeeding research especially in Western Kenya. Caution should therefore be exercised in generalizing the implications, findings and the discussion to other studies in breastfeeding behaviour. As the scope of this study is confined to Western Kenya, the sample should not be generalized as the belief and intention towards optimal breastfeeding behaviour to the whole Kenyan population. Apart from that, the sample is taken from women who had just delivered one day (24hours) ago and were still under postpartum fatigue and could not be used to represent women or mothers who were in their normal being. Finally, the findings of this study depend largely on the honesty of the respondents. It is known that individuals would agree more on socially desirable answers and disagree more towards socially undesirable

answers rather than fully and truly express their feelings and the opinions.

Conclusion

The main objective of this study is to identify the factors that are involved in influencing breastfeeding intention to optimally breastfeed. From the findings it has been identified that attitude significantly influences breastfeeding intention to optimally breastfeed.

Competing interests

The authors declare that no conflict of interest exist

Authors' contributions

All authors were involved with the drafting of the research paper, critically reviewed the manuscript and approved the final version submitted for publication.

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References

- [1]. Gross, J. (2008). The Perceived Behavioural Control of Breastfeeding among Pregnant adolescents and its' Relation to Postpartum Breastfeeding Difficulties. *Journal of Paediatric Nursing*, 1: 101- 150.
- [2]. Ajzen, I. (1991). *The Theory of Planned Behaviour. Organizational Behaviour and Human Decision Processes*. 1991; 50:179–211.
- [3]. Naanyu, V. (2008). Young Mothers, First Time Parenthood and Exclusive Breastfeeding in Kenya. *African Journal of Reproductive Health*. 12(3):125-138.
- [4]. Ajzen, I. (1985). *From Intentions to Actions: a Theory of Planned Behaviour* in Kuhi, J. and Beckman, J. (Eds), *Action-control: From Cognition to Behaviour*, Springer, Heidelberg, 30: 11-39.
- [5]. Ajzen, I. (1988). *Attitudes, Personality and Behaviour*, Dorsey Press, Chicago, IL.
- [6]. Ajzen, I. (2002). Perceived Behavioural Control, Self-efficacy, Locus of Control and the Theory of Planned Behaviour. *Journal of Applied Social Psychology*, 32: 1-20.
- [7]. Ajzen, I. and Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behaviour*. Prentice-Hall, Englewood Cliffs, NJ.
- [8]. Ajzen, I., Brown, T.C. and Carvahal, F. (2004). Explaining the Discrepancy between Intentions and Actions: The Case of Hypothetical Bias in Contingent Valuation. *Personality and Social Psychology Bulletin*, 30: 1108-21.
- [9]. Ajzen, I. and Fishbein, M. (2005). The Influence of Attitudes on Behaviour", in Albarracín, D., Johnson, B.T. and Zanna, M.P. (Eds). *The Handbook of Attitudes*, Erlbaum, Mahwah, NJ, pp. 173-221.

- [10]. Al-Akour, N. A. Khassawneh, M.Y. Khader, Y.S. Ababneh, A. A., and Haddad, A. M. (2010). Factors Affecting Intention to Breastfeed among Syrian and Jordanian Mothers: A Comparative Cross-Sectional Study. *International Breastfeeding Journal*, 5:106-15
- [11]. Bai, Y. K. Middlestadt, S. E. Joanne Peng C.Y., and Fly. A. D. (2010). Psychosocial Factors underlying the Mother's Decision to Continue Exclusive Breastfeeding for 6 Months: An Elicitation Study. *Journal of Human Nutrition and Dietetics*, 22: 134–14
- [12]. Blyth, R. Creedy, D. K. Dennis, C. L. Moyle, W. Pratt, J. and De Vries, S. M., (2002). Effect of Maternal Confidence on Breastfeeding Duration: An Application of Breastfeeding Self-efficacy Theory. *Birth*, 229: 278-284
- [13]. Bai, Y. (2007). *Factors Influencing Continuation of Exclusive Breastfeeding for Six Months*. An Application of the Theory of Planned Behaviour. Indiana University, pp. 23-8
- [14]. Central Bureau of Statistics, Ministry of Health and ORC Macro (2004). Kenya Demographic Health Survey Report, World Health Organization Global Data Bank on Infant and Young Child Feeding. Calverton, Maryland: CBS, MOH & ORC Macro
- [15]. Cubins, L. A. (1991). Women Men and the Division of Power: A Study of Gender Stratification in Kenya. *Social Forces*; 69(4): 1063- 108
- [16]. Dodgson, J.E. Henley, S.J. Duckett, L. and Tarrant, M., (2003). Theory of Planned Behaviour Based Models for Breastfeeding Duration among Hong Kong Mothers. *Journal of Nursing Research*, 52 (3): 148-18
- [17]. Duckett, L., Henley, M., Potter, S., Bony, S., and Savik, K. (1998). The Theory of Planned Behaviour Based Structural Model for Breastfeeding. *Journal of Nursing Research*, 47: 125-13
- [18]. Dyson, L. Green, J. M. Mary, J. McMillan, R. B. and Wooldridge, M., (2010). Factors Influencing the Infant Feeding Decision for Socioeconomically Deprived Pregnant Teenagers: The Moral Dimension. *Birth Issues in Prenatal Care*, 37:2
- [19]. Fishbein, M. and Ajzen, I. (1975). *Belief, Attitude, Intention, and Behaviour: An Introduction to Theory and Research*, Addison-Wesley, Reading, MA.
- [20]. Fishbein, M. and Ajzen, I. (1981). Attitudes and Voting Behaviour: An Application of The Theory of Reasoned Action", in Stephenson, G.M. and Davis, J.M. (Eds). *Applied Social Psychology*, 1: 253-313.
- [21]. Gijssbers, B. Mesters, I. André Knottnerus, J. Constant, P. and Schayck, V. (2007). Factors Associated with the Initiation of Breastfeeding in Asthmatic Families: The Attitude Social Influence–Self-Efficacy Model. *Journal of Breastfeeding Medicine*, 1(4):219-23
- [22]. Hair, J.F., Anderson, R.E., Tatham, R.L. and Black, B.C. (2006). *Multivariate Data Analysis*, Pearson Education Inc., Upper Saddle River, NJ.
- [23]. Jen-Ruei, F., Cheng-Kiang, F. and Wen-Pin, C. (2006). Acceptance of electronic tax filing: a study of taxpayer intentions. *Information & Management*, 43: 109-26.
- [24]. Kloeblen-Tarver, A. S. Thompson, N. J. and Kathleen, R. M., (2002). Intent to Breast-Feed: The Impact of Attitudes, Norms, Parity, and Experience. *American Journal of Health Behaviour*, 26(3):182-187
- [25]. McLachlan, H. L. and Forster, D.A., (2006). Initial Breastfeeding Attitudes and Practices of Women born in Turkey, Vietnam and Australia after giving birth in Australia. *International Breastfeeding Journal*, 1:7-5
- [26]. Melissa, C. (2008). Factors Affecting Breastfeeding Cessation among HIV-Positive Mothers in Kisumu, Kenya. *American Journal of Public Health Association*, 28: 859-65
- [27]. Nunnally, J.C. and Bernstein, I.H. (1994), *Psychometric Theory*. McGraw-Hill, New York, NY
- [28]. Smith, B. Bean, M. Mitchell, K. Speizer, I. and Fries, E. (2007). Psychosocial Factors Associated with Non-smoking Adolescents' Intentions to Smoke. *Journal of Health Education Research*, 45:130-15
- [29]. Stockdale, J. Sinclair, M. Kernohan, W. and Keller, J. M., (2008). Exploring the Potential of the Internet to Motivate Breastfeeding. *Evidence Based Midwifery*, 5(2): 10-50
- [30]. Ramayah, T., Ling, C.Y., Norazah, M.S. and Ibrahim, M. (2005). Determinants of Intention to Use an Online Bill Payment System Among MBA Students, *E-Business*, No 9, pp. 80-91.
- [31]. Snell, S.A. and Dean, J.W. (1992). Integrated Manufacturing and Human Resource Management: A Human Capital Perspective, *Academy of Management Journal*, 35(3): 467-504.
- [32]. Shih, Y.Y. and Fang, K. (2004). The Use of Decomposed Theory of Planned Behaviour to Study Internet Banking In Taiwan, *Internet Research*, 14(3): 213-23
- [33]. United Nations Children's Fund (2007). Implementation of the Global Strategy on Infant and Young Child Feeding Towards Child Survival. Growth and Development: Progress, Success Factors and Challenges. Nairobi: UNICE
- [34]. Wise, D. Goggin, K. Gerkovich, M. Metacalf, K. & Kennedy, S. (2006). Predicting Intentions of Condoms: Using Gender, Sexual Experiences and the Theory of Planned Behaviour. *American Journal of Health Education*, 37: 210-22
- [35]. Witwer, M. (1993). Mean Duration of Breast-feeding has risen in Some Developing Countries, Fallen in others since 1970s. *International Family Planning Perspectives*, 19(1): 34-3
- [36]. World Health Report (2007). WHO Collaborative Study Team on the Role of Breastfeeding on the Prevention of Infant mortality. Effect of Breast-Feeding on Infant and Child Mortality due to Infectious Disease In Less Developed Countries: a pooled analysis. *Lancet*, 355: 451–465