East African Medical Journal Vol. 89 No. 5 May 2012
PERSPECTIVE ON OPPORTUNITIES FOR RESEARCH AND INTERVENTIONS PROVIDED BY COMMUNITY BASED HEALTH INFORMATION SYSTEM ILLUSTRATED BY THE POTENTIAL USE OF MOTIVATIONAL INTERVIEWING INTERVENTION

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PERSPECTIVE ON OPPORTUNITIES FOR RESEARCH AND INTERVENTIONS PROVIDED BY COMMUNITY BASED HEALTH INFORMATION SYSTEM ILLUSTRATED BY THE POTENTIAL USE OF MOTIVATIONAL INTERVIEWING INTERVENTION

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ABSTRACT

***Background*:With the growth of Community-Based Health Information (CBHIS) for decision making and service provision in the low income settings, innovative models of addressing Maternal and Newborn Health (MNH) morbidity and mortality are necessary. World Health Organization (WHO) estimates that five hundred thousand mothers and about three million newborns die each year in middle and low income countries.**

***Objectives: To* stimulate interest in utilisation CBHIS for research and interventions, with an illustration of potential using on Motivational Interviewing intervention.**

***Data Source*:Literature searched electronically, discussion with behavioural experts, health system researchers, and maternal and Newborn Health (MNH) experts, and book reviews.**

***Study Selection*:Broad selection criteria including all current literature relevantsubjects including CBHIS, behaviour change methods and Community MNH.**

***Data Extraction*: A checklist for relevance was used to identify the relevant behaviour change intervention to use in the illustration.**

***Data Synthesis*: A method that met the criteria was identified, and based on a discussion with behavioural experts, the decision to use it the illustration was reached.**

***Conclusion*: Motivational Interviewing Intervention (MII) should be considered for implementation and study on near-term Pregnant women in a setting where these mothers can be identified and a targeted intervention instituted.**

INTRODUCTION

Community based Health Information System:Use of health information at all levels is recognised by World Health Organisation as one of the six key building blocks of a health system that needs strengthening to have better health outcomes (1). Health Information Systems (HIS) Research and its application in developing intervention and policies has been done for many years in the developed countries. This is in contrast to developing countries, where its potential role of reducing morbidity and mortality is yet to be fully realised (2). Within the low resource settings, a large gap exists between the development and use of the District HIS compared to Information System Based at the Community Level (CBHIS). At community level, Community Health Workers (CHWs) are used to collect health information.

Most Low Income Countries (LIC) are seeking context specific approaches for using their equivalent of CHWs effectively. Usuallycommunity own resource persons are the only available human resource at this level (3). Kenya defined their role in its health strategic plan of 2005 to 2010, where they were expected to provide the first level health care at the community. How to ensure CHWs worked as envision became challenging, including their use of Health Information for providing services. On recognisingthis problem,the Ministry of Public Health and Sanitation turned to the potential and promise of

Health Systems Research, and partnered with research Institutions to find solutions. One such partnership between Great Lakes University of Kisumu (GLUK) and the Ministry of Public Health, was the context in which this paper was written.

In the case of GLUK, the partnership was funded by Centre of National Health Research (CNHR) and African Health Systems Initiative (AHSI) to identify solutions for scaling up health services at community level in the context Community Health Strategy. Three separate components were studied, Task Shifting, Cost Effectiveness and Linking Community Based Health Information System (CBHIS) to the District Health Information system for effective decision making. This paper is a report on potential novel interventions directed at near-term pregnant women at community level once CBHIS is established.

Mortality of Mothers and Newborn in the Community: Approaches to delivery of services to address Maternal and Newborn Health (MNH) outcomes at Community level is desirable, since the deaths of mothers and their newly-born infants are still unacceptably high in developing countries. Five hundred thousand (500,000) mothers and three (3) million newborns die each year in middle and low income countries. Majority die in rural and peri-urban settings, among economically disadvantaged people and to mothers with poor health (4-6). In sub-Saharan Africa (SSA), one point two million babies died within the first 28 days of life (7). A birth in sub-Saharan Africa (SSA) is more likely to end up with a dead newborn than any other part of the world (8). Majority of these newborns die within the first week of life (9). In Kenya, Newborn deaths was 34 per 1000 live births in 2005 and has remained high, at 31 per 1000 live births in 2008 (10,11).

Current Community-Based Interventions for improving MNH outcomes: While the most effective approach to get better MNH results is to ensure quality health facility-based care for all the 50,000,000 births occurring at home annually, this is unlikely in the short term due to insufficient resources. In addition to financial barriers to access health care, there are physical and social barriers in addition to low demand that vary with context (1). The alternatives of using approaches that could prevent majority of these deaths have been well defined, and many stakeholders now refer to it as 'High Impact Interventions(HII)'. While these have been known for the last ten years, successful scale up has remained a challenge in many low-and-middle income countries (LMIC). Many factors affecting scale up have been identified ranging from the lack of sufficient information on the target population to little knowledge on the appropriate sustainable approach for delivering them in the community Dutta *et al*, 2009. The community Health Strategy adopted by Kenya has not sufficiently improved services community level for the last ten years.

The models of healthcare service delivery at community level that utilise CBHIS to identify the target population and use HII as pillars for educating individual women on birth planning and screening them and their newly-born infants for high risk conditions with rapid transport to a facility for life–saving care have been studied (Pasha,2010). However, even in research conditions with these models, a large proportion of mothers still deliver at home with an unskilled birth attendant. One such programme focusing on individual mother-infant pair is the Care of the Mother and Newborn at Home Programme (CMNH). This programme is based on a perinatal care package, recommended jointly by World Health Organization (WHO) and United Nations Children's Fund (UNICEF), where CHWs visit pregnant mothers twice before birth and three times in the first week after birth. By using picture cards, and delivering a validated participatory message for danger signs for her and baby, birth planning, CMNH programme informs an individual pregnant mother of her options for care in the perinatal period, and thus make informed choices.

Improving on current approaches to MNH interventions:To improve on the current approaches to MNH outcomes an intervention need to have the following characteristics:
Its use results in behaviour change, can be adopted for behaviour change in any field of healthcare and outside healthcare. Can be done on individuals, crosses professional barriers such that anyone can learn to use it. Can be used briefly and remain effective. and can be used in any setting.

MATERIALS AND METHODS

Identifying the counselling technique: In consultation with a researcher, who understood behavioural techniques and the following characteristics:
Its use results in behaviour change.
Can be adopted for behaviour change in any field of healthcare and outside healthcare.
Can be done on individuals.
Crosses professional barriers such that anyone can learn to use it.
Can be used briefly and remain effective.
Can be used in any setting.

Exploration of Motivational Interviewing Intervention: The following approach was used.
An endnoteX4 search using pubmed (NLM) search engine and key words behaviour change counselling.

A discussion with a behavioural scientist on the behaviour change technique.
Reading of the texbooks, ' Motivational Interviewing, preparing people for change by William Miller and Stephen Rollnick, Second Edition'
Reviewing the Motivational Interviewing website. Detailed review of the published systematic reviews.

RESULTS

The discussion between the two researchers resulted in consensus that the technique likely to have the six characteristics is motivational interviewing intervention**.** An endnoteX4 search using pubmed (NLM) search engine and key words 'behaviour change counselling' yielded 2040 results of which 191 had direct reference to Motivational Interviewing intervention. All the 191 references referred to one or other of the features above. In these references, there were seven systematic reviews with strengthening of recommendation of the techniques as the years advance.

The Clinical Psychologist agreed that this technique is applicable for behaviour change and has been noted to contain the characteristics of interest. The Book' Motivational Interviewing: preparing people for change, by William Miller and Stephen Rollnick, Second Edition agreed with the discussions with the clinical psychologist.

The Motivational Interviewing website and systematic reviews demonstrated the increasing number of publication and the diffusion of the technique across numerous medical and non- medical field.

DISCUSSION

Social Sciences and Health Disciplines accept the relationship between behaviour and poor health outcomes (12,13). In Maternal and Child Health, there is an assumption that (a) what the mother chooses, affects her and the newborn (b), her choices can change.The Social Science Models of individual Behaviour are drawn from the Standard Economic Theory, which assumes rational behaviour or decision making process with maximum benefit.

Motivational Interviewing intervention was first described by William Miller in 1983 (14). Earlier, Carl Rogers' had described Non-Directive Counselling technique, that believes in Patient Centred Therapy earlier (15).The apparent success of the method drew researchers to studying its theoretical base and effectiveness in diverse fields, and it has now become a counselling method on its own (16). It was found to fit into the Theory of Self Perception (TSP), (17), which suggests that when a person defends an action verbally, he persuades himself to commit to the action he has defended. Thus, the desire, ability, reasons and need for change, are explored through the clients own argument, in the listening presence of the interviewer. The interviewer is trained to assist clients realise their current and potential problems, resolving reluctance or ambivalence to change behaviour. Tim Anstiss says, "until now, MII has been passively diffusing through the system, as a result of the innovation and early uptake, by insightful individuals and organisations. If healthcare systems want breakthroughs to higher levels of performance, the investment in the conscious and deliberate implementation of MI into front-line settings may be helpful…… Publications evaluating MII have been doubling every three years" (18).

A recent systematic reviews documented that MII has been applied in Health at Workplaces (19), Sexual Health (20) child health (21), domestic violence(22), self-care (23), chronic pain(24), stroke rehabilitation (25), vascular risk (26), criminal justice (27), chronic leg ulceration (28), tissue disorders (29), Medication adherence (30), diabetes (31) and Mental Health (32). In the sexual health, maternal and newborn health, a few studies (33-36) have targeted prevention of smoking during and immediately after pregnancy, and sustaining breastfeeding in vulnerable populations. One study has documented lessons learnt by taking it into the general care setting (37). MII has been successfully applied by Psychologist, Medical Doctors, Nurses, Midwives, Dieticians, Lay Care Providers and other health care providers (38).

Therein is opportunity for frontline application of MET. As a stand-alone intervention, it has been tested and found to be effective in addressing addictive behaviour (39).

The effectiveness of MET, even when done for a short period of time (brief intervention), sets it aside from all other counselling programmes. This advantage has strengthened its use by people of any level of training and skill. It thus has the potential to be cross the professional barriers and diffuse in to the entire community.

CONCLUSION

Potential of MII: The MII for care of patients has potential that is not been fully utilised , and in Low income settings it is not well introduced. For mothers and their infants, it might have the potential to cost-effectively improve outcomes.

Implication for research:The potential of Motivational Interviewing Intervention should be evaluated in the context of maternal and newbornHealth, at all levels in the Low Income Settings.

Implication for programmes and training: Including MII principles in care training is likely to benefit the patients and the health system.

ACKNOWLEDGEMENTS

To African Health Sytems Research for funding, Ministry of Health and Great Lakes University Health System Research Partnership.

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