PAPER III

Predicting Intended Use of Voluntary HIV Counselling and Testing Services among Tanzanian Teachers Using the Theory of Planned Behaviour

Running head: **Predicting Intended Use of VCT Services**

Deodatus C. Kakoko[1,2]*, Anne N. Åstrøm[3], Wycliffe L. Lugoe[4], Gro T. Lie[1]

[1]Research Centre for Health Promotion, Faculty of Psychology, University of Bergen, Christiesgt 13, N-5015 Bergen, Norway

[2]Department of Behavioural Sciences, School of Public Health and Social Sciences, Muhimbili University College of Health Sciences, P.O. BOX 65015, Dar Es Salaam, Tanzania

[3]Centre for International Health, University of Bergen, Armauer Hansen Building, N-5021, Bergen, Norway

[4]Department of Educational Psychology, Faculty of Education, University of Dar Es Salaam, P.O. BOX 35048, Dar es Salaam, Tanzania

*Address for correspondence

Research Centre for Health Promotion (HEMIL)

Christiesgt 13, N-5015 Bergen, Norway

Tel.: +47 55 58 32 20; Fax: +47 55 58 98 87

E-mail: knkuru@yahoo.com

Abstract

The Theory of Planned Behaviour (TPB) provides a conceptual model for understanding individual cognitions that influence behavioural intentions and enactment of the actual behaviours. This study examined the applicability of the TPB and the additional predictive role of perceived risk in predicting intended use of voluntary HIV counselling and testing (VCT) services. We conducted a cross-sectional questionnaire survey among 918 primary school teachers in Mwanza region, Tanzania between September and November 2003. Analysis was based on 737 teachers (mean age 38.9) who had never tested for HIV. Results of the hierarchical regression analysis indicate that perceived behavioural control (β=0.37, $p<0.001$) and attitude toward using VCT services (β=0.29, $p<0.001$) were significant predictors of intention to use VCT services in the TPB model. Perceived behavioural control added 12% of variance to intention over and above attitudes and subjective norms, while perceived risk added 3% of variance over and above TPB components. Socio-economic status (SES) did not moderate the predictive ability of the TPB components. The present study demonstrated that the TPB is a useful conceptual framework for predicting and explaining intended use of HIV counselling and testing services among Tanzanian Teachers. A theory-based VCT intervention programmme among Tanzanian teachers should mainly focus on alleviating their social-psychosocial barriers related to the use of VCT services.

KEY WORDS: HIV/AIDS, counselling, testing, theory of planned behaviour, intention, Tanzania

INTRODUCTION

HIV/AIDS presents a major crisis that is increasingly affecting the most productive segments of the population across development sectors in Tanzania. The basic education sector, which is vital to the creation and enhancement of human capital, is equally affected. The loss of skilled and experienced teachers due to HIV/AIDS related deaths and long-term HIV/AIDS related illnesses is increasingly compromising the provision of quality primary education in the country. Indeed, this situation demands appropriate intervention measures that will reverse the current trend on the sector of education. Voluntary HIV counselling and testing (VCT) which has widely been documented as a viable strategy of HIV prevention (Coates, Grinstead, & Gregorich, 2000; Machekano et al., 2000; Sangiwa, Grinstead et al., 2000; Temmerman, Ndiya-Achola, Ambani, & Piot, 1995; UNAIDS, 2004; Voluntary HIV-1 Counselling and Testing Efficacy Study Group, 2000) may represent a plausible commitment towards HIV/AIDS prevention among primary school teachers.

In Tanzania, VCT services are provided by trained counsellors either in public health facilities (integrated VCT) or in separate sites (stand-alone VCT). By the end of the year 2003, there were 255 VCT sites integrated into public health facilities (hospitals, health centres, dispensaries, and clinics which are either government or privately owned) and 34 stand-alone sites which were specifically managed by the ANGAZA VCT programme of the African Medical and Research Foundation (AMREF). Other stand-alone sites were also managed by non-governmental organisations (NGOs), faith based organisations (FBOs), and private institutions. Health facility based sites have largely been accessed by patients suspected to be HIV infected, while the stand-alone sites are largely accessed by apparently healthy members of the general public who are curious to know about their sero-status for various reasons including pre-marital HIV testing (Ministry of Health, 2004). Although VCT may seem “free” from the perspectives of health care providers, there is actually modest payment for the cost incurred to purchase test kits and pay service charges. For instance, a situational analysis conducted in Dar es Salaam, Mwanza and Iringa regions indicated that the charge for VCT was between 1,000 to 3,000 Tanzanian shillings (approximately 0.91 - 2.72 USD) in public and private hospitals (AMREF, 2001). In addition, there are other indirect economic costs particularly among the rural population such as travel expenses, foregone income from working time spent seeking VCT services and other costs that can discourage potential clients to use VCT services.

An extensive body of research has identified the social, psychological and cognitive factors related to the use of VCT services. Factors including perceived susceptibility to HIV infection, perceptions of how VCT service providers handle confidentiality of HIV test results, partner involvement in HIV counselling and testing, perception of health status, age, gender, residential location, and level of education have been found to be statistically significantly associated with the use of VCT services (Crosby, Miller, Staten, & Noland, 2005; de Paoli, Manongi, & Klepp, 2004; Fylkesnes & Siziya, 2004; Gage & Ali, 2005; Holtzman, Rubinson, Bland, & Mcqueen, 1998; Mbago, 2004; Renzi, Zantededeschi, Signorelli, & Osborn, 2001; Wolf et al., 2005). In spite of the endeavour to identify factors associated with the use of VCT services, very few studies have applied theoretical models (de Paoli et al., 2004; Meadows, Catalan, & Gazzard, 2001; Wolf et al., 2005), and none of the previous studies has tested the applicability of the theory of planned behaviour (TPB) in predicting intended use of HIV counselling and testing services. This is an initial effort to test the applicability of the TPB (Ajzen, 1991) in explaining and predicting intended use of VCT services in an African context.

The TPB (Ajzen, 1991) is a social cognition model (SCM) that together with its precursor the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) constitutes a promising framework for understanding and predicting social behaviours in terms of specifying the relationship between potentially modifiable determinants. The TRA posits that people are rational actors who systematically process and use available information before performing behaviour. The TRA predicts enactment of various behaviours which are under the volitional control of the individual. This implies that intention to perform the behaviour which is a function of attitude and subjective norms is the most immediate determinant of behaviour performance (Ajzen, 1985). However, Ajzen and Madden proposed the TPB to account also for behaviours that were not under volitional control (Ajzen & Madden, 1986). In the TPB, perceived behavioural control which is similar to Bandura's concept of self-efficacy (Bandura, 1982) was added on a level with attitude and subjective norms as a predictor of intention so as to measure persons' perceived ability to perform a particular behaviour in different situations (Ajzen, 1991). Attitudes towards performing behaviour reflect a favourable or unfavourable evaluation of the particular behaviour; subjective norms refer to the perceived social pressure towards performing the

behaviour; and perceived behavioural control reflects the perceived ease or difficulty associated with behaviour performance. The three predictors of the TPB influence subsequent behaviour indirectly through behavioural intention. However, perceived behavioural control may influence behaviour directly if it reflects actual control and whenever the behaviour in question is not under complete volitional control by the individual.

The TPB also specifies the determinants of attitudes, subjective norms and perceived behavioural control that are assumed to combine multiplicatively. Attitude towards behaviour is determined by individuals' beliefs about the outcomes of performing the behaviour (behavioural beliefs) weighed by the extent to which these outcomes are valued (belief outcomes). Subjective norms are governed by perceptions of whether significant others think that one should perform the behaviour (normative beliefs) and one's motivation to comply with the wishes of significant others (motivation to comply). Similarly, beliefs about the presence of factors that might hinder the behavioural achievement (control beliefs) and perceived ability to control factors that might hinder the behavioural achievement (power of control) provide the basis for perceived behavioural control.

Although the core components of the TPB model have been successful in predicting behavioural intention and subsequent behaviours, it has been recommended that the TPB is open to the inclusion of other variables if they increase the predictive utility of the model after the theory's core variables have been taken into account (Ajzen, 1991). Consistent with this reasoning about the sufficiency of this theory, the current study extended the TPB by adding a measure of perceived risk. This inclusion of perceived risk was deemed necessary because of the high prevalence of HIV in Tanzania. High levels of the disease in any population might therefore influence risk perception as well as the uptake of VCT services. In addition, perceived HIV risk has been reported to have a significant role in decisions related to HIV prevention in previous studies that were not theory driven (Fylkesnes & Siziya, 2004; Gage & Ali, 2005; Holtzman et al., 1998).

Despite that the origin of the TPB is in industrialized countries, the TPB has been successfully applied across a wide range of health related behaviours in non-industrialized

societies (Kida & Åstrøm, 1998; Lugoe & Rise, 1999; Masalu & Åstrøm, 2002; Wilson, Zenda, McMaster, & Lavelle, 1992). Previous TPB studies conducted in developing countries and focusing on sexual behaviours include intention to use a condom (Bosompra, 2001; Lugoe & Rise, 1999; Wilson et al., 1992), intention to refuse next sexual intercourse request or proposal (Lugoe & Rise, 1999), and intended use of contraception (Fekadu & Kraft, 2001). Thus, the predictive validity and applicability of the TPB in an African setting as shown in previous studies suggest that the TPB may be useful in designing HIV-related interventions. This is noteworthy considering the need for theory based studies to construct effective and evidence based educational programmmes thereby combating the increasing incidence of the HIV infection (Fishbein & Ajzen, 2005; Kok, Schaalma, Ruiter, & Empelen, 2004).

The present study was conducted under the research and competence building co-operation, a joint programme between the University of Dar Es Salaam, Tanzania and the University of Bergen, Norway. Focusing on teachers in primary schools in Mwanza region, Tanzania, the objectives of the present paper were to report the extent to which the three components of the TPB are predictive of the intention to use VCT in terms of their relative contributions and to examine whether perceived risk of being HIV infected would add significantly to the prediction of behavioural intention over and above the components of the TPB.

MATERIALS AND METHODS

Design and sample

This study was of cross sectional design and conducted in Mwanza Region, Tanzania between September and November 2003. Mwanza Region is well supported with respect to health programmes, including the offering of VCT services. The study covered four out of a total of seven districts, namely Mwanza City, Magu, Sengerema and Geita, that had VCT services in the health care facilities and free-standing sites. Fifty-four government-owned primary schools were selected to participate in the study by stratified random sampling i.e. according to location: urban areas (located in Mwanza City), semi-urban areas (located in the main towns in the other three districts) and rural areas (outside the towns). All teachers in the selected schools were invited to participate. About 94% of eligible participants participated

(918 of 977). The non-participants comprised teachers who were absent when the questionnaires were administered.

Elicitation study and pilot test of the instrument

Elicitation procedures are recommended when using the TPB so as to establish the cognitive foundation of the population's salient beliefs (Conner & Sparks, 1995). Such important beliefs for the study population regarding the behavioural consequences of using VCT services and the significant referent and control factors for this behaviour were identified through focused interviews with participants from the target group. They were required to indicate their beliefs regarding 1) advantages and disadvantages following use of VCT services, 2) the people/groups that would approve/disapprove their use of VCT services and 3) factors that would either hinder or facilitate their use of VCT services. The most frequently occurring responses formed the basis for the development of measures of behavioural, normative and control beliefs.

Survey instrument and ethical considerations

The research instrument, originally constructed in English, was translated into Kiswahili (the language spoken widely in Tanzania) and then back-translated into English to ensure validity of questions. As this was a joint Tanzanian-Norwegian study, ethical clearance was sought and obtained from the Regional Committee for Medical Research Ethics in Norway before data collection. Research approval and permission to carry out the study were respectively obtained from the University of Dar Es Salaam and Mwanza Regional Education Authority. Participant teachers also gave their informed consent prior to filling in questionnaires.

The measurement of variables and methodological considerations

The questionnaire solicited respondents' socio-demographic information including school location, sex, age, and marital status. Furthermore, it measured socio-economic status (SES), by asking teachers to provide information about their salary (*scale*) and other material ownership including house, bicycle, radio, motorcycle and car (*yes/no*). Teachers who were in salary-scale 2 to 4 and those who responded *no* to any material possession were categorized as "low SES", whereas those who were in salary-scale 5 or above and those who

responded *yes* to any material ownership were categorized as “high SES”, and then an index was constructed for SES.

Intention (I): was measured by three items, i.e. how likely would respondents 1) be in need of, 2) request for, and 3) accept, HIV counselling and testing services the next time they were to go for health care services. Responses ranged from 'not likely at all' (=1) to 'very likely' (=4).

Behavioural beliefs: We asked respondents to rate the extent to which they thought their use of VCT services the next time they were to go for health care services was likely to: avert their chances of HIV infection, make it possible for them to avoid transmitting HIV to their partners, result in a happy life if test results were negative, help them plan confidently for their future, improve their partners’ trust if test results were negative, and facilitate their seeking of anti-retroviral therapy (ARVs) if test results were positive. Responses ranged from 'not likely at all' (=1) to 'very likely' (=4).

Outcome evaluation: Respondents were asked to evaluate six salient consequences accruing from using VCT services the next time they were to go for health care services. Responses ranged from 'not at all' (=1) to 'very much' (=4)

Attitude (A): We used items of behavioural beliefs together with those of outcome evaluation to compose the attitude scale. However, a three stage hierarchical regression analysis was run to test the expectancy-value assumption (whether a multiplicative attitude construct was better than an additive attitude construct) (Evans, 1991; Fekadu & Kraft, 2001). Behavioural beliefs were first regressed upon intention (stage 1), then belief outcomes were regressed upon intention (stage 2). Finally, the corresponding product terms were regressed on intention (stage 3). The regression analysis revealed a significant increase between stage 1 (behavioural beliefs) and stage 2 (outcome evaluation) i.e. (R^2 change =.10, $p<.001$). No additional significant increase in explained variance was observed between stage 2 and stage 3. This suggested no evidence for the multiplicative assumption regarding attitudes. Accordingly, each behavioural belief item was added to its corresponding outcome evaluation item and the sums were used to compose the attitude scale.

Normative beliefs: We asked participants to indicate the extent to which they thought their spouse/ partner, friends, fellow teachers, employer, neighbours, religious leaders, relatives, own children, pupils, and parents of their pupils were likely to appreciate their use of HIV counselling and testing services the next time they were to go for health care services. Responses ranged from 'not likely at all' (=1) to 'very likely' (=4).

Motivation to comply: was measured by asking the respondents to rate the extent to which they thought it was important for them to comply with the wishes of their ten salient referents. Responses ranged from 'not important at all' (=1) to 'very important' (=4).

Subjective norms (SN): We used normative belief items together with those of motivation to comply to compose the subjective norm scale. An empirical test on the expectancy-value assumption was done following similar procedures as outlined above for attitude. Results of the hierarchical regression analysis revealed a significant increase between stage 1 (normative beliefs) to stage 2 (strength of compliance), i.e. (R^2 change=.06, $p<.001$). However, no statistically significant increase was observed between stage 2 to 3 (for the multiplicative construct of normative beliefs and motivation to comply), i.e. (R^2 change=.01, $p>.05$). Thus, each of the normative belief items was added to its corresponding item of strength of compliance and the sum were used to compose subjective norm scale.

Control beliefs: We asked respondents to indicate the extent to which they thought that their partners were not in favour of their use of VCT services, cost related to VCT services were very high for them, they would die more quickly if they tested for HIV and were informed of a positive result, VCT service providers could not keep their HIV test results confidentially, it was not easy for them to disclose their HIV positive test results, they could be stigmatized if they were known or suspected to be HIV-infected, they could not afford to buy anti-retroviral therapy if their HIV test results were positive. Responses ranged from 'not at all' (=1) to 'very much' (=4).

Power of control: Respondents were asked to indicate how likely it would be for them to use VCT services the next time they were to go for health care services given the 8 control belief statements (presented under control beliefs). Responses ranged from 'not likely at all' (=1) to 'very likely ' (=4).

Perceived behavioural control (PBC): We used control belief items together with those of power of control to compose the subjective norm scale. The empirical test for the expectancy-value assumption (similar to that carried for attitude and subjective norms) revealed a significant increase from stage 1 (control beliefs) to stage 2 (power of control), i.e. (R^2 change=.13, p<.001, but no significant change between stage 2 to 3 i.e. (R^2 change=.01, p>.05). Given these findings, values of the control belief statements were added with the corresponding items of control power, and the sum was computed to compose the perceived behavioural control scale.

Perceived risk (PR): We measured perceived risk by asking respondents to rate the extent to which they agreed that they or their partners were probably already HIV infected (2 items). Similarly, respondents were asked to rate the possibility of becoming HIV infected in the future (2 items). Furthermore, respondents were asked to indicate the extent to which they agreed that AIDS was a dangerous disease in general, in Tanzania, in their communities, among teachers of the same school, and to themselves (5 items). All responses with respect to perceived risk ranged from 'strongly agree' (=1) to 'strongly disagree' (=4).

RESULTS

Sample characteristics

Of 918 primary school teachers who participated in the survey study, 737 (80%) had never tested their HIV status and were included in the present analyses. The mean age of the participants was 38.9 (SD=8.7) and their age ranged from 21 to 59 years. Of these, female teachers constituted 64.9%. The socio-demographic characteristics of the participating teachers by school location are presented in Table 1.

(Insert Table 1 here)

Descriptive statistics

Table 2 depicts the descriptive statistics for the components of the TPB, perceived risk and socio-economic status. The study group had favourable attitudes, perceived normative pressure more positively, felt a high level of control and had strong intentions with respect to use of VCT services. However, respondents felt less vulnerable to HIV infection as more than fifty percent perceived no HIV risk. Internal consistency reliability in terms of Cronbach's alpha ranged from 0.94 (subjective norm scale) to 0.75 (Intention and perceived risk scales).

(Insert Table 2 here)

Correlations among the components

The partial correlation coefficients among the TPB variables, perceived risk and socio-economic status are presented in Table 3. All TPB components correlated significantly with behavioural intention. Perceived behavioural control ($r=0.45$, $p<.001$) demonstrated the highest correlation with intention, followed by attitude ($r=0.38$, $p<.001$) and subjective norms ($r=0.34$, $p<.001$). Perceived risk correlated significantly with attitude, subjective norms and intention, while socio-economic status did not correlate statistically significantly with other components.

(Insert Table 3 here)

Prediction of intention from TPB components and perceived risk

Assessment of the applicability of the TPB model in predicting intended use of VCT services was done using hierarchical regression analysis as Ajzen (1991) recommends. Demographic variables (location, sex, age and marital status) were entered in the first step explaining 3% of the variance in behavioural intention. Attitude (A) and subjective norms (SN) were entered in the second step and accounted for 18% of variance in behavioural intention. The third step of the regression model included perceived behavioural control (PBC), which increased the explained variance by 12%. The inclusion of perceived risk in the fourth step increased the explained variance of behavioural intention by 3%. The statistically significant predictors that emerged in the final step were school location

(β=0.20, p<.001), attitude (β=0.25, p<.001), perceived behavioural control (β=0.37, p<.001) and perceived risk (β=0.18, p<.001).

We examined the possible moderating effects of socio-economic status upon the relationships between intention on the one hand and TPB components and perceived risk on the other, multiplicative constructs (e.g. attitude x socio-economic status) were added into separate regression models after controlling for the main effect of the TPB components (Baron & Kenny, 1986). No statistically significant moderation effects were revealed with regard to any of the interaction terms.

(Insert Table 4 here)

DISCUSSION

The results of this study provide support for the applicability of the TPB in predicting teachers' intention to use of HIV counselling and testing services. The simultaneous predictive power of attitudes, subjective norms and perceived behavioural control on intention in terms of the adjusted R squared was 0.30 (i.e., explained 30% of variance). This finding compares favourably with results of previous studies in which the TPB explained 22% of variance in intention to use a condom among Tanzanian secondary school students (Lugoe & Rise, 1999), and 29% of variance in intention to use contraception among adolescent girls in Ethiopia (Fekadu & Kraft, 2001). As judged from the standardized regression coefficients, the results of this study indicate that intended use of HIV counselling and testing in Tanzanian primary school teachers was primarily under perceived control and attitudes while subjective norms had less weight. These findings suggest that the use of VCT services in this sample depended on how teachers perceived social and psychological constraints in using VCT services as well as the beliefs they held in terms of advantages and disadvantages associated with the use of VCT services.

The significant contribution of attitude over subjective norms is likely to be a reflection of the individualistic nature of using VCT services. Despite the finding that VCT services are more beneficial when couples and sexual partners are counselled and tested together

(Sangiwa, Grinstead et al., 2000), many people in Tanzania would prefer to use VCT services when they are alone (de Paoli et al., 2004). Previous studies conducted in African settings focusing on condom use (Bosompra, 2001; Lugoe & Rise, 1999) and contraceptive use (Fekadu & Kraft, 2001) have shown that subjective norms were more important in predicting people's intention than were attitudes. Trafimow & Finlay (1986) in a meta-analysis conducted across thirty different behaviours pointed out that, individuals differ in the relative weights they place on attitudes and subjective norms, and that the weights of these predictors also vary across behaviours and population sub-groups (see also Ajzen, 1991).

An insignificant effect of subjective norm should not be taken for granted as evidence that normative expectations are unimportant when it comes to teachers' decision whether or not to use VCT services. It is possible that the norms with respect to use of VCT services have not yet been well established due to HIV/AIDS-related stigma and discrimination surrounding this behaviour (de Paoli et al., 2004; Lie & Biswalo, 1996). The fact that the relative weight of subjective norm was statistically significant before perceived behavioural control was included in the regression model did indicate that significant others have a role to play in the use of VCT services.

Consistent with the TPB (Ajzen, 1991), the inclusion of the perceived behavioural control improved the prediction of intended use of VCT over and beyond the TRA components. This might be attributed to the fact that the use of HIV counselling and testing is hampered by social-psychological barriers that might play a vital role in teachers' decisions whether or not to use VCT services. Specifically, HIV testing barriers such as fear of stigma and discrimination (Day, Miyamura, & Grant, 2003; Sangiwa, van der Straten, Grinstead, & Group, 2000), women's fear of adverse consequences if HIV test results are positive (Kilewo, Massawe, & Lyamuya, 2001; Maman, Mbwambo, & Hogan, 2002; Maman, Mbwambo, Hogan, Kilonzo, & Sweat, 2001), and suspicion about confidentiality of HIV test results (Biswalo & Lie, 1995; de Paoli et al., 2004; Lie & Biswalo, 1994) are not under individual control but rather operate at the social-cultural level. Further, our findings are consistent with the results of other TPB studies across health behaviours in Tanzanian context (Kida & Åstrøm, 1998; Lugoe & Rise, 1999; Masalu & Åstrøm, 2002) as well as in other African settings (Fekadu & Kraft, 2001).

Our findings support the notion that the inclusion of variables external to the TPB might improve the prediction of intention and behaviour beyond the TPB variables (Ajzen, 1991). In this study, adding a measure of perceived risk contributed significantly to the explained variance in intended use of VCT services. Similar findings have also been reported in HIV/AIDS-related studies that were not theory driven (Fylkesnes & Siziya, 2004; Gage & Ali, 2005; Holtzman et al., 1998). Moreover, the present finding corroborates earlier theory driven studies (Fekadu & Kraft, 2001; Norman, Conner, & Bell, 1999; Sutton, Mc Vey, & Glans, 1999) that have confirmed perceived risk to have a substantial independent effect over and above the components of the TPB model.

The present analyses revealed no significant effect of socio-economic status upon intended use of VCT services nor were SES variables found to be effective modifiers of the relationships within the TPB model. This implies that the prediction of attitude, subjective norm and perceived behavioural control do not differ significantly among various categories of socioeconomic status of the studied group. It is possible that primary school teachers in Tanzania do not differ much in terms of income and social status, though there may be slight variations based on the income and social status of teachers' own families as well as their extended families.

As for methodological concerns, the findings support the importance of testing the expectancy value assumption prior to the construction of scales for the TPB components (Evans, 1991; Fekadu & Kraft, 2001). Results of the hierarchical regression affirm the importance of including belief evaluations in the construction of attitude, subjective norms and perceived behavioural control scales. However, consistent with the findings of previous studies (Armitage, Conner, Loach, & Willets, 1999; Fekadu & Kraft, 2001) the multiplicative assumption as in the case of expectancy value model failed to account for additional variance in the TPB components and hence we adopted additive term.

The first potential limitation of the present study is that there was no prospective study that could establish the actual use of VCT services. However, results of this study provide an avenue for collection of longitudinal data in the future. In their recent study, Fishbein and

Ajzen (2005) argue that the TPB is basically a theory of intention formation and that reporting on the predictive ability of attitudes, subjective norms, and perceived behavioural control constitutes the major part of TPB studies. Moreover, reviews of pertinent literature suggest that measures of behavioural intention account for 20-40% of the variance in corresponding behaviour of prospective studies (Ajzen, 1991; Arbraham, Sheeran, & Orbell, 1998; Corner & Armitage, 1998). Second, from a measurement perspective, scaling beliefs and evaluations such as the Likert scale may weaken the results. It is, thus important for future studies to consider using a wider range of scales to study intended use of VCT services. Equally important, future research ought to conduct an optimal scaling analysis (Ajzen, 1991) to test whether the belief scales should be conducted in a bipolar or unipolar fashion. Third, one scale (socio-economic status) had marginal reliability (α=0.51). This might have had some impact on the nature of the results with regard to effect moderation. Nevertheless, these considerations do not invalidate our results, which clearly indicate that the TPB model contains variables that are important for understanding the use of VCT services among primary school teachers in Tanzania.

In conclusion, the present study demonstrated that the TPB is a useful conceptual framework for predicting and explaining intended use of VCT services. It suggests that in order to promote the use of VCT services among primary school teachers in Tanzania, attention should be paid to enhancing perception of control so as to strengthen behavioural intentions. Specifically, VCT related interventions should seek to alleviate psychosocial barriers related to use of HIV counselling and testing services. Likewise, VCT-related messages should target augmenting the favourable beliefs people hold about the consequences of using VCT services.

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Table 1: Socio-demographic characteristics of never-tested sample of teachers according to rural, semi-urban and urban areas (N = 737)

Variable	Rural† (n= 269)		Semi-urban† (n= 220)		Urban (n= 247)		All (n=737)	
	n	(%)	n	(%)	n	(%)	n	(%)
Gender								
Male	147	(56.8)	44	(17.0)	68	(26.2)	259	(35.1)
Female	122	(25.5)	176	(36.8)	180	(37.7)	478	(64.9)
Age (in years)								
21–30	51	(31.9)	39	(24.4)	70	(43.7)	160	(21.8)
31–40	85	(33.1)	72	(28.0)	100	(38.9)	257	(35.0)
41–50	96	(40.0)	80	(33.3)	64	(26.7)	240	(32.7)
51–60	36	(46.7)	27	(35.1)	14	(18.2)	77	(10.5)
Marital status								
Unmarried	27	(31.1)	13	(14.9)	47	(54.0)	87	(11.8)
Married	205	(36.0)	193	(33.9)	172	(30.1)	570	(77.6)
Divorced/separated	26	(63.4)	7	(17.1)	8	(19.5)	41	(5.6)
Widowed	9	(24.3)	7	(18.9)	21	(56.8)	37	(5.0)
Socio-economic status								
Low	114	(39.3)	93	(35.2)	164	(56.6)	387	(56.9)
High	176	(60.7)	171	(64.8)	126	(43.4)	293	(43.1)

Gender $\chi^2 = 73.52$ (1); p< .001. Age $\chi^2 = 24.22$ (3); p< .001. Marital status: $\chi^2 = 44.70$ (3); p<.001. SES: $\chi^2 = 12.33$ (1); p<.001

Columns for urban, semi-urban and rural add to 100% horizontally while the column for all adds to 100% vertically

†Missing cases are excluded from the analysis

Table 2: Descriptive statistics for the components of the theory of planned behaviour, perceived risk, socio-economic status and intention (N=737)

Component	Descriptive statistics					
	N[†]	Items	Scale range	Mean	SD	α
Attitude	730	6	12 - 48	44.97	4.40	.87
Subjective norms	718	10	20 - 80	69.83	8.68	.94
Perceived control	730	8	16 - 64	42.05	8.02	.84
Perceived risk	731	10	10 - 40	32.65	3.71	.75
Intention	722	3	3 - 12	9.99	2.23	.75

SD=Standard Deviation; α= Cronbach alpha

[†]Do not add to 737 due to cases with missing information

Table 3: Partial correlations (Pearson's r) among the components of the theory of planned behaviour, perceived risk, socio-economic status and intention ([†]N=657)

Component	ATT	SN	PBC	PR
Attitude (ATT)	-			
Subjective norms (SN)	.51***	-		
Perceived behavioural control (PBC)	.17***	.34***	-	
Perceived risk (PR)	.20***	.10*	-.03	-
Intention (INT)	.38***	.34***	.45***	.23***

Significant at: *p<.05; ***p<.001; Controlled for: location, gender, age and marital status.

[†]Do not add to 737 because of cases with missing information

Table 4: Intention to use of voluntary HIV counselling and testing services regressed upon attitude (A), subjective norms (SN), perceived behavioural control (PBC) and perceived risk (PR) (N=737)

Components entered	Adj. R^2	R^2 change	F-change	p-value	Standardized regression coefficients			
					β_A	β_{SN}	β_{PBC}	β_{PR}
#Demographic variables	0.04	0.04	6.21	0.000	-	-	-	-
A + SN	0.21	0.18	73.50	0.000	.28***	.20***	-	-
A + SN + PBC	0.33	0.12	112.68	0.000	.29***	.07 (ns)	.36***	-
A + SN + PBC + PR	0.36	0.03	29.689	0.000	.25***	.07 (ns)	.37***	.18***

Significance at: ***p<.001; ns= not significant; β=Standardized regression coefficients

#Include: location, age, gender, marital status and socio-economic status.