Effect of brief social contact video compared with expert information video in changing knowledge and attitude towards psychosis patients among medical students

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Abstract

Objective: Direct contact interventions are known to reduce stigma. Effects of both filmed and direct social contact were found similar in reducing stigma. This study aims to understand the effect of video intervention, especially the effects between patient-sharing video and expert information video, among the medical students.

Methods: Seventy-two medical students were recruited from two consecutive clinical study periods. Students from one period were in the patient sharing group, watching a 7-minute patient-sharing video. The others were in expert information group watching a 5-minute psychosis video. Subject's desire of social distance (Reported and Intended Behaviour Scale) knowledge (The Social Contact Intended Learning Outcome) attitude towards mental illness (Clinicians Attitudes Scales version 4) and emotional reactions (the Emotional Reactions to Mental illness Scales) were measured. Assessments were done at baseline, immediately after video watching and at 1-2 weeks follow-up. Within-group ANOVA was used to assess the difference between time points. Group by time effect was explored.

Results: Significant improvement in knowledge level was found with a significant group by time effect (F=6.261,p=0.004) for PS group, and was maintained at follow-up. Post-intervention attitude was significantly improved in PS group but not maintained. Only social distance was improved significantly in EX group (F=8.093, p=0.003). Both groups had a significant reduction in fear sub-score.

Conclusion: This study provided evidence on the effect of patient-sharing video in improving the attitude and knowledge of medical students. Expert information video about psychosis can improve social proximity. Combining these approaches may improve stigma and knowledge among medical students.

Keywords: psychosis, social contact, video, stigma

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1. Introduction

Psychotic disorders affect up to 3% of the population and are regarded as one of the most challenging and costly illnesses worldwide (WHO, 2014; Knapp et al., 2014; Rössler et al., 2005). Psychotic disorders or schizophrenia were found to be more stigmatizing than other mental illness (Pescosolido et al.,2010). About half of patients with psychosis experienced significant levels of stigma and two-third reported perceived discrimination (Brohan et al.,2010). Stigma is often a key barrier to help-seeking leading to a longer duration of untreated psychosis (DUP), poor medication adherence, increases relapse and hospitalization rates of patients with psychosis and probably early mortality (Gulliver et al.,2010; Andrews et al., 2002; Sirey et al.,2001 McCann et al., 2008).

The attitude of healthcare professionals towards patients with psychosis may impact on the clinical care of patients directly. It has been suggested that primary care physicians in the US may make fewer investigations and are less likely to make a specialist referral for physical problems for people known to have a mental disorder (Grabver et al., 2000). Studies have also shown that healthcare professionals (nurses, social workers, physicians) have the highest levels of stigmatizing attitude towards people with mental illnesses compared to other professional groups (Lauber et al., 2006; Björkman et al., 2008; Hori et al., 2011; Ihalainen-Tamlander et al., 2016). Therefore, developing effective anti-stigma intervention for the health-care professionals, particularly during the training stage, would be crucial. However, very few studies of anti-stigma intervention on attitude toward psychosis for this group have been carried out (Henderson et al.,2013).

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Social contact is one of the core components of many of the public anti-stigma campaigns and has been shown to have a better effect than education in reducing stigma (Corrigan et al.,2012; Yamaguchi et al., 2011). It has been suggested that interpersonal contact is associated with a possible change of attitude towards perceived outgroup members (such as people with mental illness) (Couture et al., 2003). A study among health care providers by the Mental Health Commission of Canada suggested that using multiple types of social contacts are important for maximizing the effectiveness of the anti-stigma programs (Knaak et al., 2014). In the undergraduate psychiatry teaching in Hong Kong, students often interact with patients in the institutional settings where most of the patients were having acute or chronic conditions. Such contacts are professional in nature with an aim to acquire clinical skills. Social sharing from patients and caregivers is often not part of the curriculum.

A randomized controlled trial in the UK compared the effectiveness of video-based social contact, direct social contact with patients and a lecture by a professional in reducing stigma towards people with mental illness in a group of university general nursing students. This suggested that use of video-based social contact had a similar effect in reducing stigma as that of a direct social contact intervention (Clement et al., 2011). Most previous studies using the video approach for social contact involve longer video presentation of around one hour. The increasing use of short videos on the internet suggested that this could be a potential form of anti-stigma intervention (Benevenuto. Et al., 2009).

The medical education at the University of Hong Kong is six year with the last two years

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as clinical specialty clerkship. During the clinical specialty clerkship, students are randomly assigned into smaller groups, about 30-40 students each group, rotating between different clinical specialties. In this study, we aimed to develop and evaluate the effectiveness of a brief video-based social contact in changing attitude towards patients with psychosis among medical students during psychiatry specialty clerkship in Hong Kong. Results of the study can provide evidence on the use of short video as an intervention modality for clinicians in training and potentially wider population.

2. Methods

Medical students attending the six-week psychiatric clinical rotation at the Department of Psychiatry, the University of Hong Kong were invited for the study. The first week of the rotation was lecture based and then students will be attached to different psychiatric units of the hospital. Students attending the consecutive clinical rotation were invited for the study. Informed consent was obtained from all students participating the study. Consented students of the first rotation watched brief video clips (7 minutes) about a patient and a carer sharing their experience (patients sharing (PS) group) and students of the second rotation watched a 5-minute video about psychosis in general and research on exercise, presented by a mental health professional (expert information (EX) group). All students watched the video at the start of the rotation in a group setting. Data was collected at three-time points: baseline, immediately after watching video and at 1-2 weeks after that. The last follow-up time was designed just before or at the beginning of the clinical attachment to minimize the influence of the clinical encounter.

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Baseline questionnaires containing socio-demographic information including age, gender and previous personal contact of people with psychosis/schizophrenia. At each of the three-time points, participants were required to complete a set of questionnaires. This included measurement of knowledge about psychosis, related behaviour, attitude and emotional reaction towards people with psychosis. In the currently study, attitude towards people with psychosis was considered as the primary outcome.

2.1 Sample

Only participants who understood the nature of the present study and gave an informed written consent were included. Subjects who self-reported a history of mental illness was excluded from the study to reduce bias. Seventy-two participants were recruited and 36 from each rotation group.

2.2 Experimental video content

All consented participants watched the video at the start of their clinical clerkship. Baseline assessment was conducted before the video watching.

2.2.1 Social contact video (PS)

The video had two parts: in the first part, two recovered Mental Health Service users shared their personal stories about psychosis - how it affected their lives and what they did to overcome their difficulties. In the second part, a carer shared his personal experience about what he wished he

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had done to make a difference to the care of his family members.

2.2.2 Expert information group video (EX)

The video contained an educational talk about psychosis conducted by Mental Health Service workers without specialized knowledge of stigma.

2.3 Measurements

Social Contact Intended Learning Outcome (SCILO) was used to measure knowledge about people with psychosis (Clement et al., 2011). The SCILO is a knowledge-related measure, which consists of five items with true/false response categories. One point was scored for one correct answer, giving a range of 0-5.

Clinician Attitudes Scales version 4 (MICA) was used for the measurement of attitude towards mental illness (Gabbidon et al., 2013). It is a 16-item scale self-rated questionnaire assessing attitudes of students or staff in any health discipline towards people with mental illness. Each item requires a response on a 6-point Likert scale. An overall score was calculated by summing each individual item to give a possible range of 16–96. A higher score indicates more negative stigmatizing attitude. Previous research reported a reliability of $\alpha = 0.76$ (Kassam et al., 2010). In the present study, the internal reliability was $\alpha = 0.63$. This was considered as the measurements for the primary outcome of the study. Apart from MICA, one open-ended question assessing participants' view on the video and one single item question "Do you feel that your attitude towards people with psychosis and schizophrenia has changed?" (1, yes, more negative; 2, no, same; 3, yes, more positive) were also included.

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Reported and Intended Behaviour Scale (RIBS) is a simplified scale for report contact and measure social distance (Evans-Lacko et al., 2011). The RIBS is an 8-item scale measuring the future intention of social interaction to people with psychosis. The first four items evaluate reported (past and current) contact with people who have psychosis, and the last four statements require participants to indicate how strongly they agree or disagree with it on a 6-point scale. Only the last four items were scored. A high score on the RIBS scale indicates increased intentional social proximity towards people who are suffering from psychosis. The scale was adjusted to be specific for measuring psychosis. Previous research reported a reliability of $\alpha =$ 0.75 (Evans-Lacko et al., 2013). The internal reliability in the present study was $\alpha = 0.72$.

Emotional Reactions to Mental Illness Scale (ERMIS) was used to measure the emotional reaction of the subject towards people with psychosis (Angermeyer et al., 2003). It consists of a vignette about a person experiencing psychosis. Participants were presented with nine statements assessing their feelings towards the person in the vignette. The nine statements can be grouped into three subscales: anger, fear and prosocial emotions. Each statement requires a response on a 5-point scale. The scale was adjusted to be specific for psychosis. A previous study reported the α-value for the three subscales: anger, fear and prosocial were 0.34, 0.75 and 0.47 respectively (Clement et al., 2011). In the present study, the α-value the three subscales were 0.70, 0.88 and 0.49 respectively.

Standard translation procedure was applied to all measurements and no significant differences were found in the meaning between the back-translated version and the original one.

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2.4 Sample size and power

A pilot study was conducted and found a mean MICA score of 46.67 (s.d =4.546). In order to detect an effect size of 0.5 on the MICA score with 80% power and a 0.05 % significance level when comparing the two brief video groups, 30 participants per group (total n= 60) were needed.

2.5 Statistical Analysis

Data was analyzed using SPSS 23.0 (Windows). Initial analysis was carried out to assess the data normality, sample mean and standard deviation for each assessment scale: SCILO, MICA, ERMIS and RIBS of each time point. Principal component analysis (PCA) was performed for ERMIS data at baseline to confirm the reported factor structure with the original validation study (Angermeyer et al., 2010). Within group repeated measure ANOVA was performed for all measurements of both groups and between group repeated measure ANOVA was performed to explore the group by time interaction for all measurements. Post hoc test with Bonferroni correction was conducted between each time point for each measurement of each group.

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3.Results

A total of 72 medical students participated in the study and 65 subjects completed all three time-points (Figure 1). There were no significant difference in gender and age between the two groups (Table 1). Post-intervention data was collected for all participants (100%) and the response rate

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at 1-2 weeks follow-up was 89%. The pre-intervention and post-intervention mean scores for each measurement and each group was reported in Table 2.

3.1 Improvement in Knowledge about people with psychosis

There was a significant within group difference on the knowledge measurement for the PS group (Table 2). Post hoc analysis found the main improvement was at post intervention (Time point 1) (Figure 2). There was no significant difference for the EX group between any time points. The time by group effect was significant (Table 2).

3.2 Attitudes toward psychosis

There was no significant within group difference on the change of attitude measured with MICA over three time points for both groups (Table 2). However, post hoc analysis suggested that there was a significant reduction of MICA score post intervention compared with the baseline for the PS group signifying an improvement of attitude (Figure 2). The score remained the same at follow up. The post hoc analysis did not find any significant differences for the EX group.

More participants in the PS group expressed a subjective feeling of positive attitude after watching the video compared to the EX group in the single item asking for subject change of attitude and the difference between groups was significant (χ^2=16.086, p=0.001).

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3.3 Social Distance and behavioral changes

Only three people self-reported previous contact with people who have psychosis (Item 1-4). Item 5-8 was used to analyze social distance. The within group repeated ANOVA analysis found a significant difference among the three time points for the RIBS score of the EX group but not the PS group (Table 2). The difference was mainly between the post-intervention and the baseline. The improvement of the score was of the same pattern for the PS group but there was only a trend significance between the follow-up time point and the baseline (Figure 2).

3.4 Emotional Reactions

Results of factor analysis of data of the current sample suggested that the ERMIS has the same factor structure as in the original validation study (Angermeyer et al., 2010). Three subscales (Fear, Anger, and Pro-social) according to the literature was then used for analysis.

For the Fear subscale, the within group repeated ANOVA analysis found the difference among the three time points were significant for both the PS and EX group but the time by group interactions were not significant (Table 2). The post hoc analysis suggested that there was a significant difference between the post-intervention and the baseline score for both the PS and EX group. The improvement continued for the PS group leading a significant difference between the baseline and the follow-up time score but not for the EX group (Figure 2).

There was no significant difference for the Pro-social score among the three time points

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for both groups though there was a trend significance for the PS group (Table 2). There was no significant changes in sore of anger subscale for both groups (Table 2 and Figure 2).

4.Discussion

This study assessed the impact of short video sharing by patients compared with short expert information video about psychosis on the change of knowledge, attitude, social distance and emotional response to people with psychotic disorders in medical students at the beginning of the formal psychiatry clinical clerkship teaching. In summary, the results suggested that a short video of patient sharing demonstrated greater improvement in medical students' knowledge about psychosis than the expert information group. The patient sharing group also had significant improvement in attitude and the expert information group had significant improvement in social distance score. Both groups had significantly less fear towards patients with psychosis and the beneficial effect of the patient-sharing group sustained at the follow up.

Most of the previous studies suggested that as the knowledge of the biological nature of psychosis improved, there was a deterioration of attitude towards the patients with psychosis (Angermeyer et al., 2010; Chan et al., 2017). The biological understanding may relate to the view that there is a lack of controllable etiology, which then contributing to the development of fear towards the illness. Biological understanding of psychosis is one of the key components of the curriculum of undergraduate teaching of psychiatry. The current study found that narrative video sharing from the patients and caregivers can improve the knowledge and the attitude towards patients with psychosis of the medical student more than expert sharing group. Furthermore, the reduction of fear in the patient sharing group was found to be maintained at the

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follow up but not the expert sharing group. It is possible that personal sharing from patient and caregivers can convey their personal experience and challenges of living with a mental disorder, generating a stronger sense of empathy from the recipient and reduce fear. A previous study suggested that patient sharing could improve the dimension of the perception of likely violence as well as the self-reflection score of subjects (Clement et al., 2011). ==This is one of the items of the SCILO questionnaire. This questionnaire measures the knowledge about people with psychosis such as whether they are violent and if they could be recovered instead of knowledge about the illness. This may explain the that difference was seen in the PS group but not the EX group.==

RIBS primarily measures the subjects intended behavior on social distance from subjects suffering from a psychotic disorder. The pattern of improvement on the RIBS score was similar between the PS and EX group, though it was significant for the EX group and not the PS group. ==The lack of statistical significance in the PS group may be because of the lack of power of the study==. The post hoc analysis found the change was significant between the post-intervention and baseline for the EX group. This suggested that short video of expert information on psychosis can improve the intended behavior and social distance among the medical students.

A previous study suggested that both lectures and a testimony from caregivers or patients could be effective in improving knowledge, attitude and behavior towards patients of mental illness among a large group of medical students (Friedrich et al., 2013). This current study provides further evidence that a short video of patient sharing can improve knowledge and attitude of medical students and that a short video of expert information can improve the social

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distance. Therefore, a combination of these two may be an effective strategy for improving knowledge and reducing stigma among the medical students. However, further study will be needed to explore the effectiveness of the combination of the information delivering approaches. The evidence on the effective of short videos in improving knowledge and stigma about psychosis open up a possibility to develop and provide effective intervention that can reach a wider population.

As only medical students from two rotations at the University of Hong Kong was included, this may not be generalizable to other settings. Though the participants were not randomized by the researcher, the grouping of the students were arranged randomly by the University administration. This reduce the sample selection bias. A short follow up time (1-2 weeks) was used in the current study to minimize the impact of their exposure to the psychiatric teaching curriculum. On the other hand, longer-term effect of the intervention was not able to be assessed. Furthermore, our measure of "behavioural" change is not a direct measure of observable behavior, instead, it is a measure of a set of social proximity measures, which are supposed to be closely related to actual behavior (Friedrich et al., 2013). The small sample size might also have limited the power of the study.

Despite of the limitations stated, this was the first study on the effect of a brief video in improving knowledge and attitudes of psychosis in medical students. Compared to previous designs a short film of expert information was used as the control group to allow better comparison (Thornicroft et al., 2009). Results of current study suggested that combining these two approaches may be an effective strategy to improve knowledge, attitude, levels of fear and

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social proximity in medical students. Further research will be needed to explore these two approaches of patient sharing and expert information with larger populations at different setting.

Conflict of interests

The authors of this manuscript certify that they have NO affiliations with or involvement in any organization or entity with any financial interest (such as honoraria; educational grants; participation in speakers' bureaus; membership, employment, consultancies, stock ownership, or other equity interest; and expert testimony or patent-licensing arrangements), or non-financial interest (such as personal or professional relationships, affiliations, knowledge or beliefs) in the subject matter or materials discussed in this manuscript.

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Table 1. Demographics of the study population.

	Ex Group[1] N=35	PS Group [2] N=37	t/x^2	p
Age(year), mean	21.94	22.17	-.661	.511
Gender, N (%)				
Female	14 (40%)	12 (32.4%)	.446	.504
Male	21 (60%)	25 67.6%)		

[1]Expert Information Group; [2.] Patient Sharing Group; t: independent sample t test; x^2: Chi square

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Table 2. Comparison of outcomes by group at three different time points with within group and between group repeated measures ANOVA

| Concept (scale, possible range)	EX group[1]			F	p	PS group[2]			F	p	Significance of time x group Interaction (p-value)***
	Baseline N=35	Post Video N=35	Follow Up N=32			Baseline N=37	Post Video N=37	Follow Up N=33			
	Mean (s.d)[3]	Mean (s.d)	Mean (s.d)			Mean (s.d)	Mean (s.d)	Mean (s.d)			
Knowledge (SCILO, 0-5)[4]	3.91 (0.919)	3.94 (0.838)	4.13 (0.751)	1.671	.202	3.68 (0.944)	4.11 (0.906)	4.09 (0.843)	6.261	*.004*	*.046*
Stigmatising Attitude (MICA, 15-90)[5]	47.11 (5.551)	45.83 (6.595)	45.31 (7.24)	1.025	0.363	48.11 (7.256)	45.46 (7.358)	45.79 (7.783)	2.179	.137	.579
Intended Social Proximity(RIBS, 4-20)[6]	13.43 (2.279)	13.91 (2.106)	14.75 (2.155)	8.096	*.003*	13.68 (2.122)	14.16 (2.949)	15.00 (1.904)	2.551	.097	.927
Emotion (ERMIS,3-15)[7]											
Fear	8.97 (2.332)	10.34 (2.656)	10.03 (2.694)	5.519	*.007*	9.62 (2.442)	10.65 (2.598)	11.39 (2.015)	7.293	*.004*	.305
Prosocial Emotions	5.66 (1.282)	5.31 (2.125)	5.75 (1.524)	.359	.641	5.49 (1.521)	5.14 (1.619)	5.70 (1.591)	2.949	.061	.751
Anger	12.34 (2.071)	12.60 (2.872)	12.47 (1.796)	.036	.948	12.30 (1.956)	12.57 (1.937)	12.70 (1.704)	.136	.841	.867

[1].Expert Information Group; [2]. Patient Sharing Group; [3]. Standard Deviation; [4]. Social Contact Intended Learning Outcome; [5].Clinicians Attitudes Scales version 4; [6].Reported and Intended Behaviour Scale; [7].Emotional Reactions to Mental Illness Scales; F: Within group repeated measures ANOVA between the 3 time points

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Running head : Effects of short videos on stigma and knowledge

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Fig.1. Flowchart of the recruitment and intervention process of the study
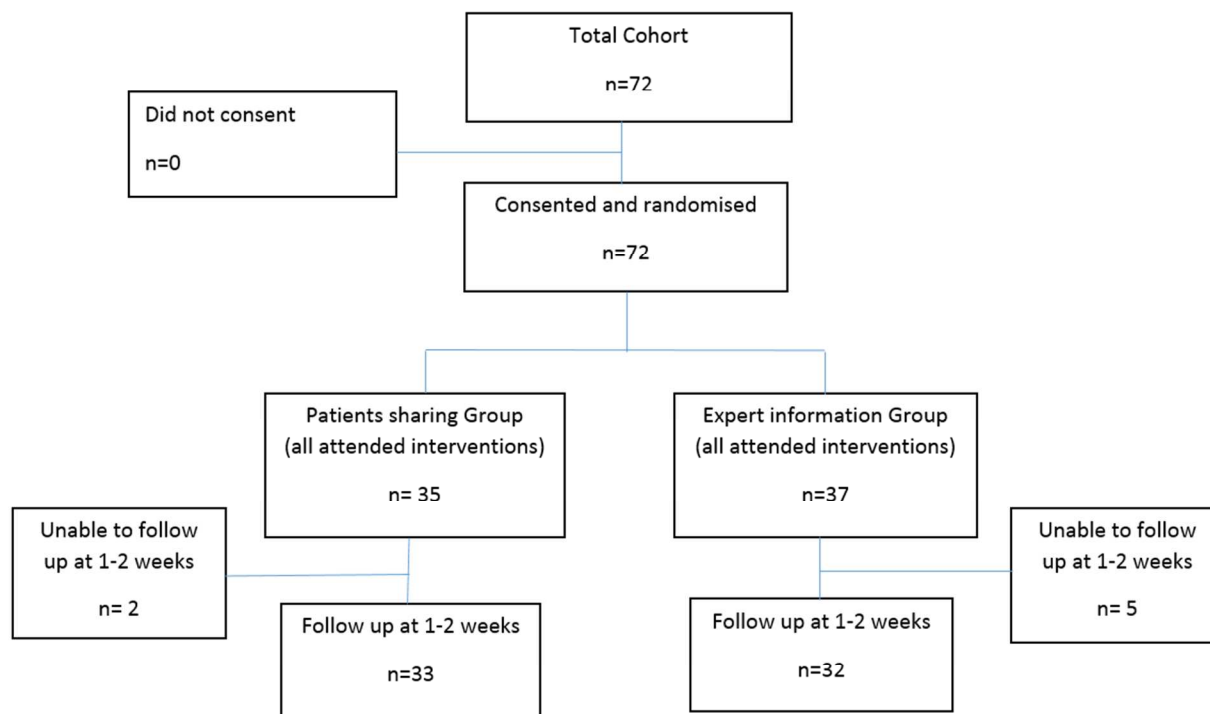
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Fig 2. Graphs of Post Hoc tests of different scales at three different time points
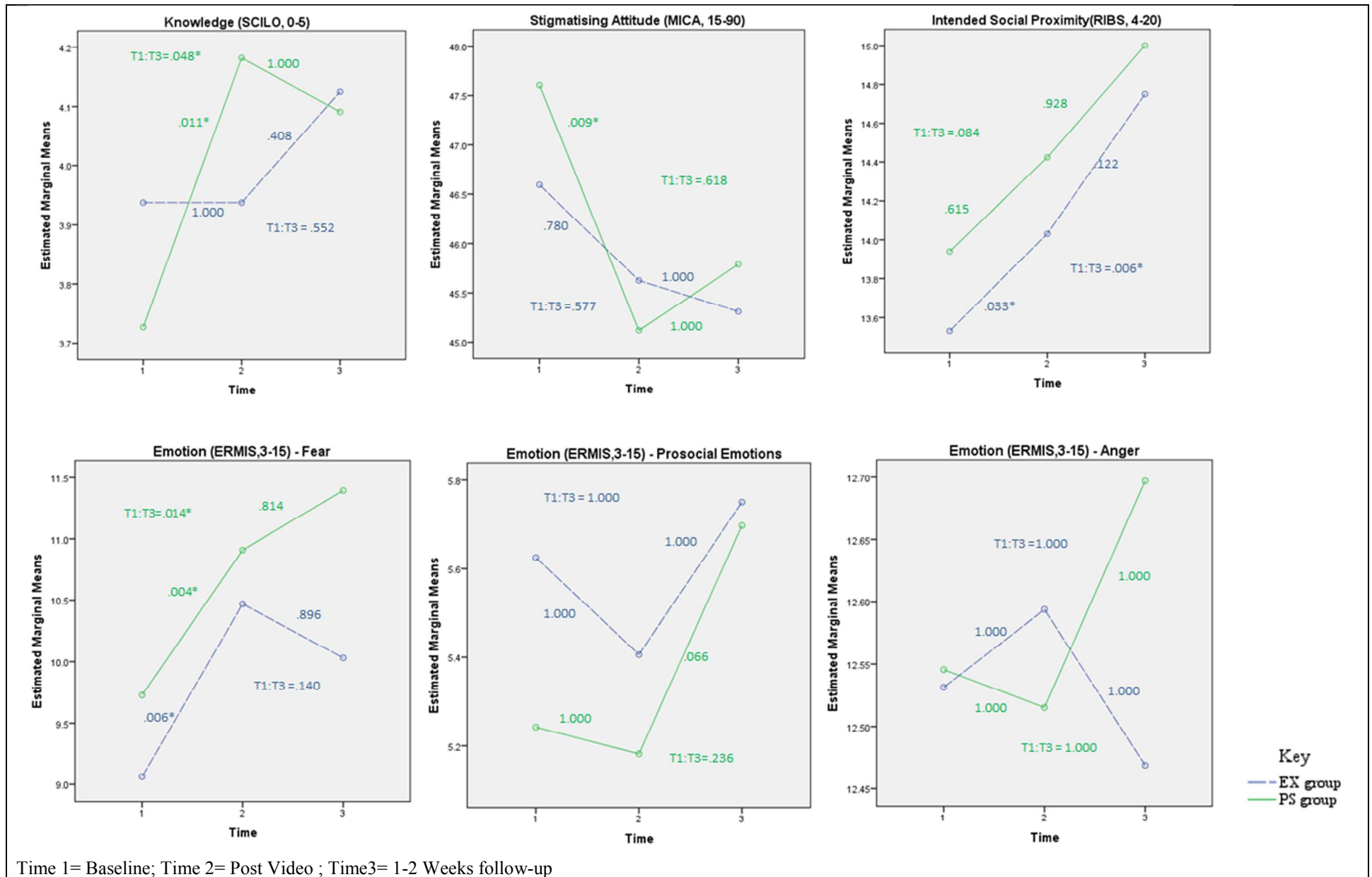
Time 1= Baseline; Time 2= Post Video ; Time3= 1-2 Weeks follow-up

Post hoc analysis for repeated measures ANOVA was carried out. *p* values of the comparison between each time point were reported above. SILOS:Social Contact Intended Learning Outcome; MICA:Clinicians Attitudes Scales version 4;RIBS:Reported and Intended Behaviour Scale; ERMIS: Emotional Reactions to Mental Illness Scales.