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Adherence issues to antipsychotic medication in schizophrenia: results from a Hong Kong survey targeted for psychiatrists and case managers

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Abstract

Objective: The overall level of adherence of Hong Kong patients with schizophrenia is relatively unknown, and this report therefore aims to investigate the attitude of local patients towards antipsychotics, to hopefully assist future development of

potential strategies to address adherence problems.
Methods: A survey consisting of adherence-related questions in schizophrenia was given to 71 psychiatrists and 143 case managers in Hong Kong. Survey results were summarised descriptively, and percentages for each multiple choice answer picked for each question were calculated.
Results: Over half of the surveyees estimated that their patients were either partially or non-adherent with their anti-psychotic medication during the past month. The three major barriers to patient recovery and improved functioning were "medication non-adherence" (93%), followed by "loss of insight into illness" (85%), and "lack of integrated psychosocial support" (45%). A large proportion of patients did not understand the risk of relapse due to non-adherence and showed lack of insight into illness.
Conclusion: Our findings provide a glimpse of the adherence issues and perceptions of local healthcare providers regarding medication taking behaviours of local patients with schizophrenia. Further studies are required to examine the factors behind treatment non-adherence.

Keywords: Schizophrenia, adherence, antipsychotics, psychiatrists, case managers, survey, Hong Kong

Introduction:

Non-adherence is a major issue in the management of schizophrenia (Masand, Roca, Turner, & Kane, 2009). It has been estimated that about 40% of patients with schizophrenia are non-adherent to antipsychotic medication (Freudenreich & Cather, 2012), and according to the Clinical Antipsychotic Trials of Intervention Effectiveness (CATIE) study, about three-fourths of schizophrenic patients had discontinued medication within 18 months (Higashi et al., 2013). Non-adherence to treatment can have a negative impact on clinical outcome due to prolonged time to remission, and increase in the risk of relapse, hospitalisation and attempted suicide (Higashi et al., 2013). Reports estimated that the risk of relapse due to non-adherence could be increased by a factor of three to ten, and the risk of suicide and hospitalisation is nearly four times higher in those who are poorly adherent (Gibson, Brand, Burt, Boden, & Benson, 2013, Potkin, Bera, Zubek, & Lau, 2013).

Furthermore, non-adherence can aggravate patients' social and occupational functioning, resulting in reduced quality of life and increased use of healthcare resources of the society (Dilla, Ciudad, & Álvarez, 2013). A study demonstrated that the 6-month direct cost of care for relapsed patients with schizophrenia was four times higher than for those without relapse (Munro et al., 2011), indicating that non-adherence can have significant economic consequences since it is strongly associated with relapse of schizophrenia (Dilla et al., 2013).

Reasons for non-adherence are complex, including personal factors such as poor insight, health beliefs such as refusal of medication, and drug factors such as poor efficacy, drug-related side effects, medication interference with life goals, complicated treatment regimen, as well as social factors such as embarrassment/stigma over illness and lack of social support (Potkin et al., 2013, Smeraldi et al., 2013). Identifying determinants and risk factors of non-adherence in schizophrenia helps address the adherence issues, and is essential in improving patient welfare and reducing utilisation of social resources and cost of care. In Hong Kong, patient attitude towards antipsychotics and the overall level of adherence are rarely reported, and these topics therefore warrant investigation in order to provide insights on how to improve the overall management of schizophrenia.

In view of this, the Hong Kong Association of Psychosocial Rehabilitation (HKAPR) conducted a survey to gather opinions from local healthcare professionals (HCPs) including psychiatrists and case managers regarding the adherence issues in the local management of schizophrenia. The survey was based on the one developed by the Spanish Adherencia Terapéutica en la Esquizofrenia (ADHES) program (translated as: therapeutic adherence in schizophrenia), which was first conducted in Spain, and was later adopted in the rest of Europe, Middle East and Africa (Olivares et al., 2013). The goal of the current study was to make use of the survey results to advise a list of follow-up actions in order to improve local services for patients with schizophrenia.

Method

Sampling

ADHES (Activities, Delivering Hope, Empowerment & Success) is a large international initiative to assess patients' adherence to treatment, with an aim to raise awareness of partial/non-adherence issues in treating mental illness (Olivares et al., 2013). The current study adopted the ADHES survey but was modified for the local context. In brief, the ADHES survey targets HCPs and consists of questions relating to their perceptions of reasons/factors that affect the level of adherence of their patients (Olivares et al., 2013). The survey together with a letter explaining its objectives was handed out individually to local psychiatrists and case managers in Hong Kong through convenient sampling during January to April 2014, and each completed survey was collected later for data analysis.

Data collection and analysis

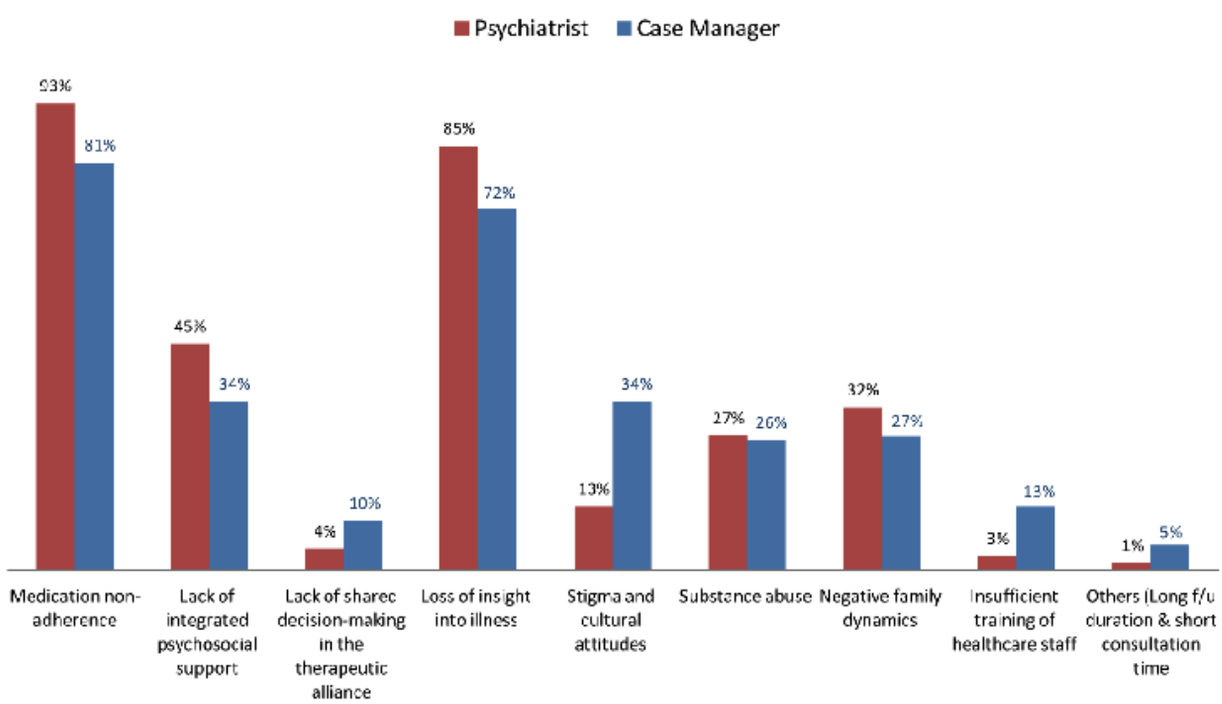
The completion of the survey was anonymous and voluntary. All raw data collected were kept confidential and patients' personal information was not collected. The survey consisted of one question regarding the professional qualification of the surveyee (Table 1; Q1), and 9 multiple choice questions related to the adherence issues of schizophrenia (Table 1; Q2-Q10). Level of adherence of patients was assessed by estimating the percentage of prescribed doses that they took during the past month: adherent, partially adherent, and non-adherent was defined as taking ≥90% of prescribed doses, taking ≥30 to <90% of prescribed doses, and taking <30% of prescribed doses respectively (Olivares et al., 2013). Regarding factors contributing to partial or non-adherence, surveyees were instructed to estimate some responses based on the percentage of patients falling into each of three groupings (i.e. <20%, 20%–50%, and >50% of patients) (Olivares et al., 2013).

After collection of the completed surveys, the survey response data were summarised descriptively, and percentages for each multiple choice answer picked for each question were calculated. No other statistical testing was performed, and the data were not weighted.

Results

A total of 71 psychiatrists and 143 case managers completed and returned the survey, representing a sizeable proportion of overall personnel in the field of psychiatry in Hong Kong. According to the responses from psychiatrists, the three major barriers to patient recovery and improved functioning were "medication non-adherence" (93%), followed by "loss of insight into illness" (85%), and "lack of integrated psychosocial support" (45%). Although case managers also agreed with the aforementioned three factors as major barriers (81%, 72% and 34%, respectively), they also considered "stigma and cultural attitudes" as one of the major barriers to clinical outcome (34%). On the other hand, 13% of psychiatrists agreed that "stigma and cultural attitudes" was impeding clinical outcome (Figure 1).

Figure 1. Survey results: Barriers to patient recovery and improved functioning.



The difference in valuing "stigma and cultural attitudes" between psychiatrists and case managers may be due to the notion that patients are more willing to share their daily experience with case managers, allowing case managers to have a better grasp of patients' attitude and thoughts towards their illness. Nonetheless, further studies are required to elucidate the major barriers to patient recovery and improved functioning.

Respectively, over half of the surveyees (Psychiatrists: 60%; Case managers: 52%) estimated that their patients with schizophrenia were either partially (took at least 30% but no more than 90% of prescribed doses) or non-adherent (took <30% of prescribed doses) with their antipsychotic medication during the past month (Figure 2). Adherence remains an important issue that needs to be addressed in the management of schizophrenia. HCPs are advised to emphasise the importance of adherence to their patients.
For assessing medication adherence, most surveyees adopted the direct inquiry method such as "ask the patient explicitly" (Psychiatrists: 76%; Case managers: 61%) or "ask an informant (e.g. relative, friend, caregiver)" (Psychiatrists: 19%; Case managers: 24%). Results reflected that up to about two thirds of surveyees had adopted objective approaches such as drug plasma levels or pill counting to assess adherence (Figure 3), but these objective approaches were not as frequently used as compared with subjective approaches. While pill counting represented the most used objective approach for case managers (10%), only 1% of psychiatrists frequently adopted this method to assess adherence.

Figure 2. Survey results: adherence profile of patients during past month.

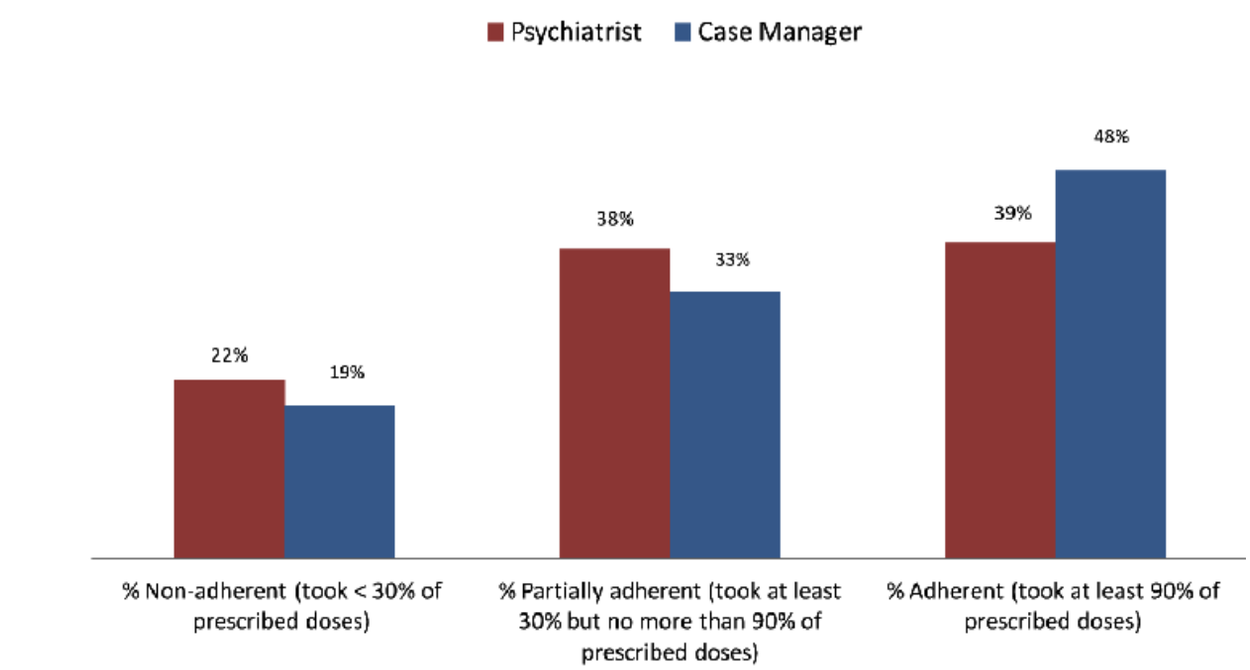
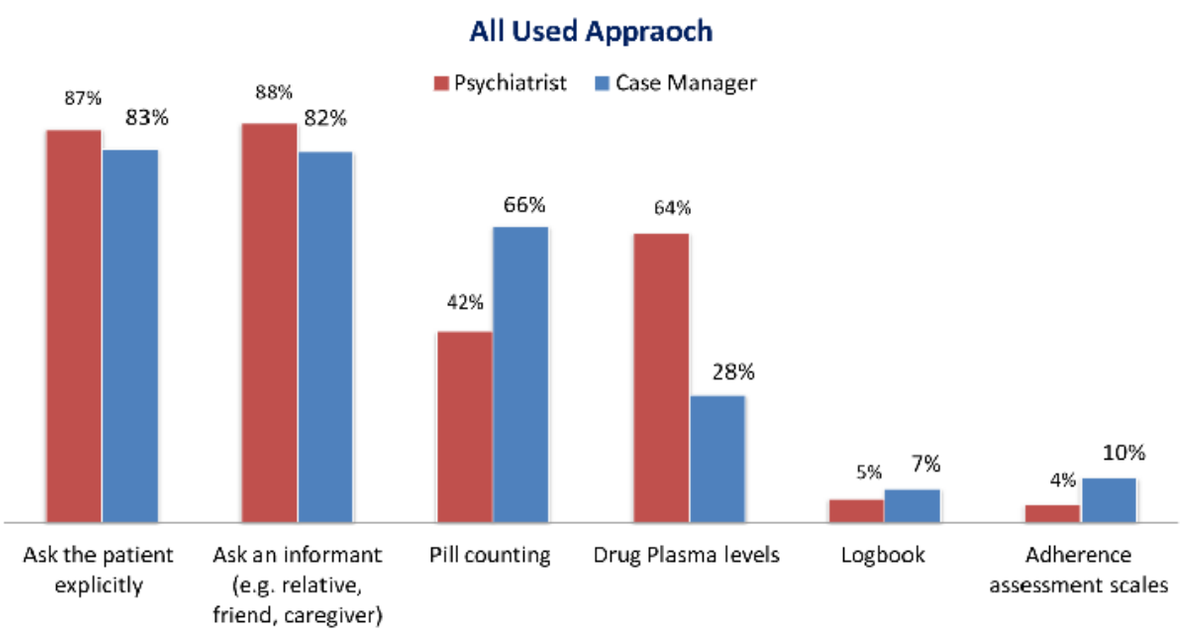


Figure 3. Survey results: Methods of assessing adherence



The more frequent use of pill counting by case managers suggests that they rely on practical means to assess adherence, as they may not be as experienced/knowledgeable as psychiatrists who can depend on other means to assess adherence.

Ninety two percent of psychiatrists versus 66% of case managers assessed adherence at every visit, while 27% of case managers versus 6% of psychiatrists assessed adherence every 2-3 visits (Figure 4). More than half of the surveyees (Psychiatrists: 58%; Case managers: 51%) spent 10-25% of their time staying with patients on reminding/ensuring them to take their medication as prescribed (Figure 5). Adherence is assessed in almost all patients although the frequency of assessment can vary among HCPs. HCPs should be reminded that not all patients show great insight into their illness, and therefore it is necessary for them to spend more time to remind their patients to take medication.

Figure 4. Survey results: frequency of assessing adherence.

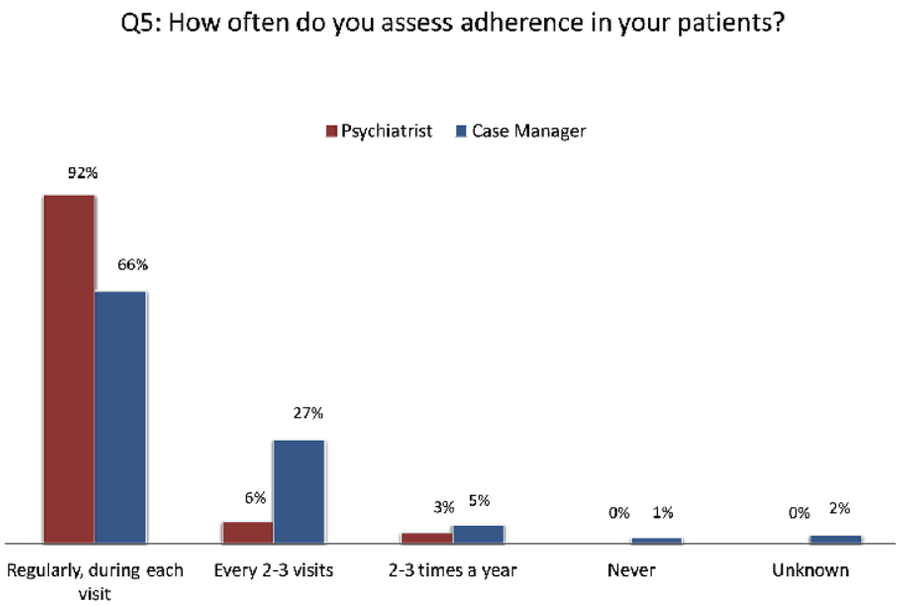
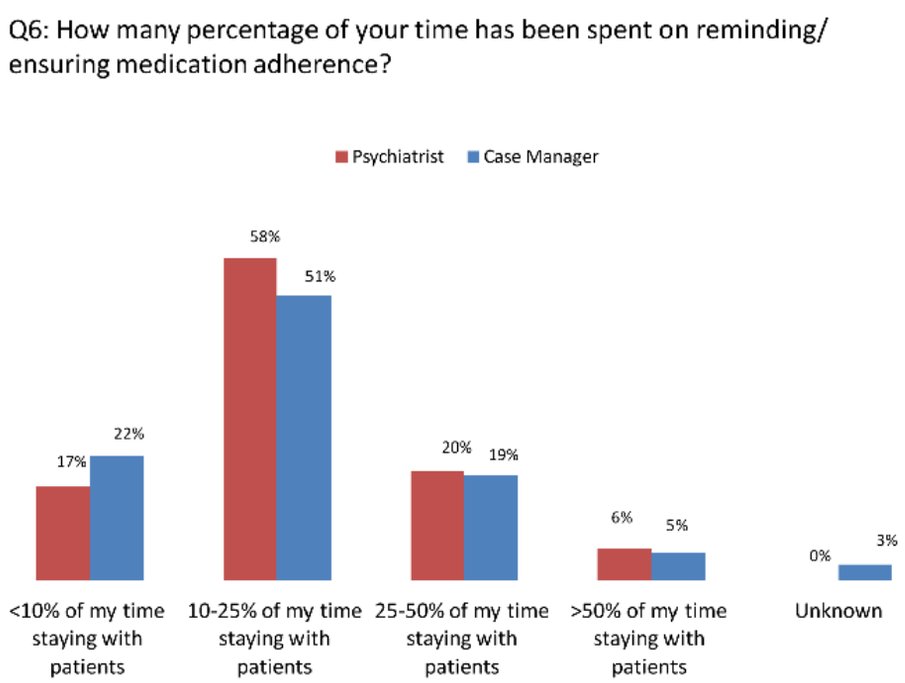


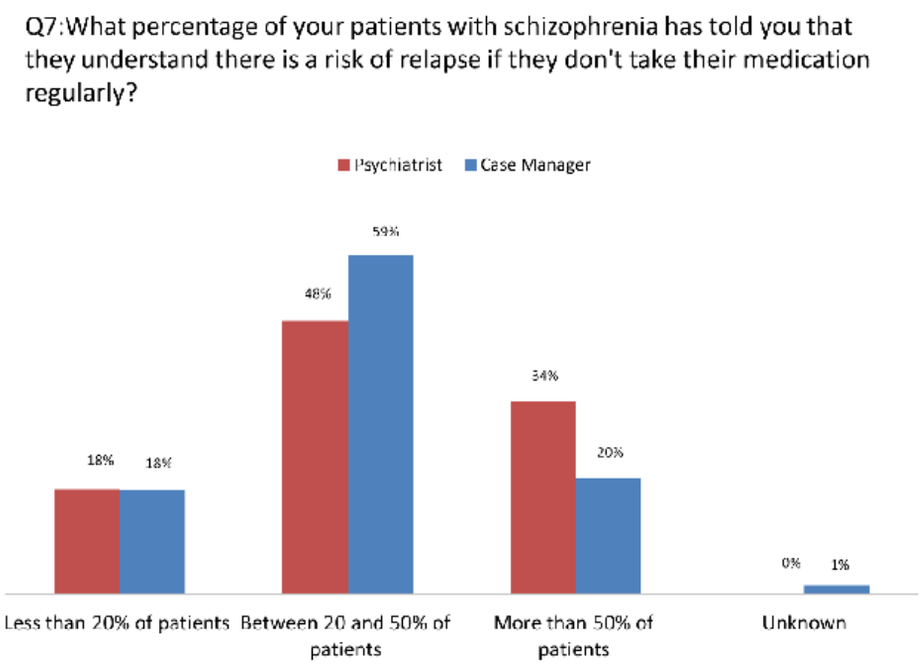
Figure 5. Survey results: percentage of time spent on reminding/ensuring adherence.



At least two thirds of the surveyees (66-77%) reported that ≤50% of their patients understood the risk of relapse if they failed to take their medication regularly. On the other hand, a larger portion of psychiatrists as compared with case managers (34% vs. 21% respectively) believed that >50% of patients understood the po-

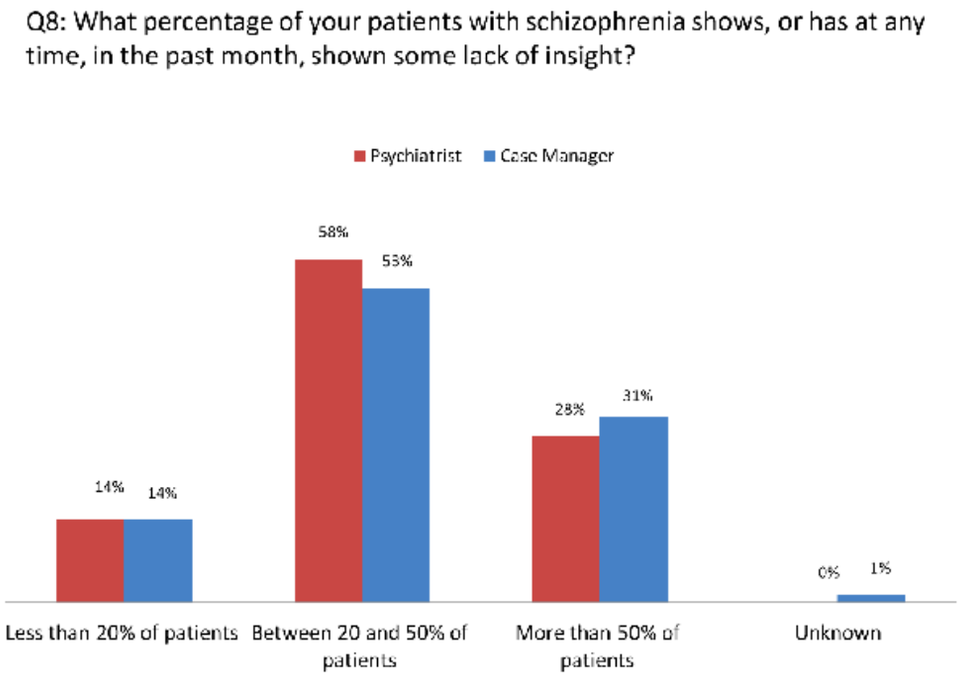
tential risk (Figure 6). A large proportion of patients do not understand the risk of relapse due to non-adherence. HCPs may need to spend more time explaining the harm of non-adherence to their patients. The difference in percentage (34% vs. 21%) may suggest that psychiatrists are more aware of patients' understanding of their illness.

Figure 6. Survey results: Percentage of patients with schizophrenia who reported that they understand the risk of relapse if they don't take their medication regularly.



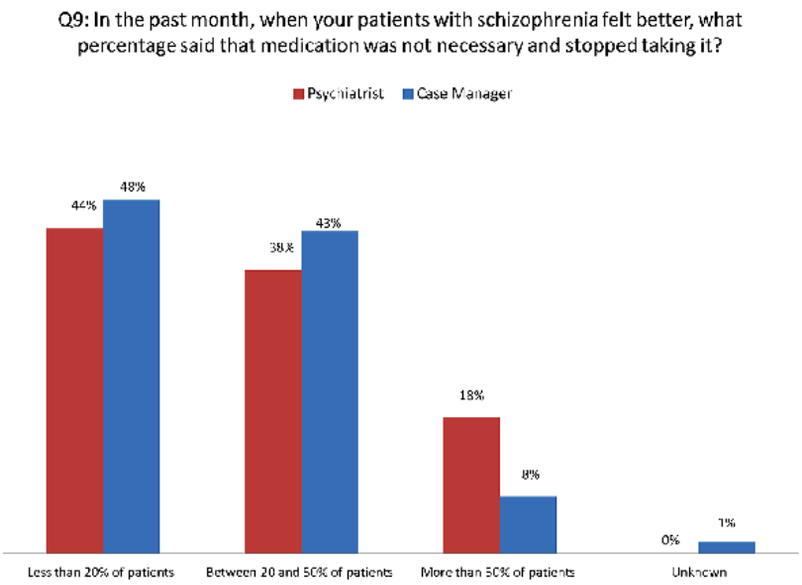
About 70% of the surveyees noticed that ≤50% of their patients showed some lack of insight into their illness during the past month , while the proportion of surveyees markedly reduced to about 30% for those who found that >50% of patients showing lack of insight. No apparent difference in opinions between psychiatrists and case managers can be found in terms of assessing patients' insight (Figure 7). A large proportion of patients (about one third) show lack of insight which may affect their medication taking behaviours and their recovery. HCPs need to explain the nature of the illness including diagnosis, treatment and prevention to their patients. More patient education programmes are needed in the community, and it is a long path for patients with schizophrenia to fully understand their illness. A survey targeted for patients may be needed to further elucidate their medication taking behaviours.

Figure 7. Survey results: Percentage of patients with schizophrenia who have shown some lack of insight in the past month.



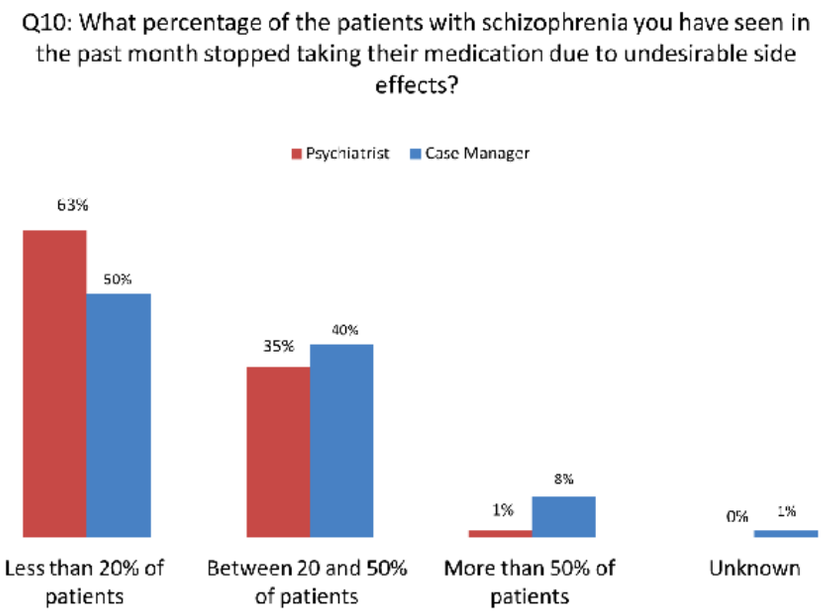
Approximately 40-50% of surveyees reflected that <20%/between 20-50% of their patients stopped taking their medication when feeling better. It is noteworthy that the proportion of psychiatrists was more than double the proportion of case managers in feeling that their patients stopped taking their medication upon feeling better (Figure 8). There are still patients who do not take medications as prescribed. HCPs need to be aware of those who stop their medication prematurely, as their risk of relapse may increase as a result.

Figure 8. Survey results: Percentage of patients with schizophrenia who said that they felt better and that medication was not necessary and therefore stopped taking it in the past month.



Almost all psychiatrists (98%) believed that ≤50% of their patients stopped taking their medication due to undesirable side effects in the past month, compared to 90% of case managers having the same thought (Figure 9). Side effects may not be the main reason of non-adherence. HCPs are advised to explore the main reasons behind non-adherence in order to improve adherence rate. Nonetheless, the percentage of overall patients who stopped taking their medication needs to be factored before making any conclusion. In addition, some patients may not completely stop their medication (i.e. become partially adherent) after experiencing side effects, and this situation also needs to be considered. Lastly, how HCPs determine the true adherence rate remains to be questioned.

Figure 9. Survey results: Percentage of patients with schizophrenia who stopped taking their medication due to undesirable side effects in the past month.



Discussion

The current study adopted the ADHES schizophrenia survey to gain insights into the general medication adherence issues in schizophrenia in Hong Kong, including the scope and causes of non-adherence, as well as the methods of assessing adherence by HCPs. The survey was distributed to local psychiatrists and case managers including nurses. The two professional sectors are considered different in terms of educational background, practice habits and clinical experience. The demographics such as the sex and age of surveyees were also not recorded. Indeed, there was a discrepancy of opinions between psychiatrists and case managers, suggesting a difference in their understanding of adherence issues in schizophrenia. The most noticeable discrepancy included the belief of case managers that stigma was a top three barrier to patient recovery and improved functioning but not psychiatrists. The use of objective approaches to assess adherence (such as pill counting, drug plasma level measurement, adherence assessment scales) was also more frequently adopted by case managers than by psychiatrists, and psychiatrists appeared to assess adherence more regularly when compared with case managers. Whether the differences in practice habits between psychiatrists and case managers induce a difference in patients' clinical outcome remain of interest and may require further investigation. Nonetheless, there are some major issues relating to the local management of schizophrenia that can be derived from the survey, and the details are discussed below.

Lack of treatment adherence

Between 52-60% of surveyees considered that their patients with schizophrenia were partially/non-adherent to their antipsychotic medication in the past month, and these results were consistent in a previous ADHES schizophrenia survey conducted in Asia Pacific countries, which found that 56% of patients with schizophrenia were partially or non-adherent to their medication (Olivares et al., 2013). The relatively high rate of poor adherence reported in this survey is alarming and needs to be addressed, as treatment adherence is essential for patients to achieve clinical remission (Masand et al., 2009). It is also noteworthy that adherence assessment by clinical judgment often results in underestimated rates (Olivares et al., 2013), and so partial/non-adherence in local patients remains a tough problem to tackle. The survey results indicated that the top barrier to patient recovery and improved functioning was "medication non-adherence", followed by "loss of insight into illness"

and “lack of integrated psychosocial support”. In particular, “medication non-adherence” and “loss of insight into illness” can be considered as major factors as over 50% of surveyees (both psychiatrists and case managers) thought that these 2 factors impeded patient recovery. Over 90% of psychiatrists believed that not adhering to treatment has a major impact on achieving remission. Since non-adherence sign

According to previous reports, using a combination of assertive community treatment, family involvement and social skills training (Barkhof, Meijer, de Sonneville, Linszen, & de Haan, 2012), as well as long-acting injectable atypical antipsychotics (LAIs) with fewer side effects as opposed to conventional antipsychotics can be possible solutions to address the problem of poor adherence (Kaplan, Casoy, & Zummo, 2013, Smeraldi et al., 2013). In particular, LAIs can promote face-to-face contact time between HCPs and patients, as injection is required to be administered at the clinics/hospitals (Smeraldi et al., 2013). The increased contact time may contribute to improved therapeutic alliance that may help enhance treatment adherence and symptom control (Johansen, Iversen, Melle, & Hestad, 2013). Indeed, it has been reported that patients on LAIs were at least twice as likely to stay on their treatment courses as compared with those on oral antipsychotics (Kaplan et al., 2013).

Lack of insight

Denial and lack of insight into illness was also considered a major barrier to remission. To address the conceptual issue of insight, accurate and up-to-date information regarding the nature and management of schizophrenia need to be provided for patients. Compliance therapy may also be considered as an effective intervention in improving insight and attitudes to illness (Chakraborty & Basu, 2010). The lack of integrated psychosocial support as noted by the surveyees suggested that it is important to explore ways to improve psychotherapy services in order to help patients overcome dysfunction and regain their lives and abilities. For instance, supportive therapy can be beneficial to patients by providing positive advice and efforts to minimise stress (Penn et al., 2004). Caregivers (such as family members and friends) and peer groups are also recommended to provide support and encouragement to those with schizophrenia. Indeed, recent evidence advocated the concept of an enhanced team-oriented approach to manage patients with schizophrenia in order to improve clinical outcome (Shuler, 2014). It is interesting to note that about one third of case managers believed that stigma and cultural attitudes are major barriers to patient recovery and improved functioning, as opposed to only 13% of psychiatrists who had this belief. Reasons behind this difference in opinions are unknown, but the results implied that positive attitudes towards mental illness are important in promoting patient recovery.

Difference in assessing adherence

The most common approach in assessing adherence was by using subjective methods, such as asking the patient or informant directly. However, subjective approaches are often not validated, and are susceptible to error, misinterpretation, or distortion (Velligan et al., 2006). For example, patients may overestimate the extent of adherence in order to avoid queries from their doctors or case managers (Birnbaum & Sharif, 2008). Cognitive dysfunction could also impair patients’ ability to recall their actions, prohibiting them from providing accurate information regarding their medication taking behaviour (Barkhof et al., 2012). It is noteworthy that while psychiatrists did not prefer the use of objective approaches such as pill count (1%) and drug plasma level measurement (1%), 10% of case managers regarded pill count as the most used approach in assessing adherence. This reflects the different working habits between psychiatrists and case managers. Nonetheless, the survey indicated that objective approaches using drug plasma concentrations, pharmacy records and pill counts were not popular in local practice. To improve the accuracy of adherence assessment, it has been suggested in a clinical review to include “at least 2 measures of adherence and at least 1 of these be a direct or objective measure such as pill count, urine analysis, blood analysis, electronic monitoring, pharmacy refill records, or the examination of tracer substances in blood or urine” (Velligan et al., 2006). A local validated practical adherence assessment scale which is lacking now may also be helpful.

Compared with case managers (66%), more psychiatrists (92%) assessed adherence level during each visit

with patients. On the other hand, more than one fourth of case managers (27%) reported assessing adherence every 2-3 visits. These results implied that case managers may not be fully aware of the importance of medication adherence, and they should be encouraged to assess adherence more frequently since adherence has a direct impact on patient outcome (Masand et al., 2009). More than half of the surveyees spent ≤25% of their time staying with patients on reminding/ensuring them to take medication as prescribed. However, as patients seldom fully adhere to treatment (Masand et al., 2009), it is advised that HCPs spend more time and become more proactive in promoting the importance of medication adherence to patients in relation to the risk of relapse. Training manuals may be required to increase the awareness of HCPs in adherence issues and instruct them on how to address such issues with patients.

Poor understanding of the consequences of not adhering to treatment

In the current study, it was generally agreed by the surveyees that a proportion of their patients showed some lack of insight into their illness and did not understand the risk of relapse if they failed to take their medication regularly. Accurate, up-to-date patient education programmes are recommended to inform patients on the consequences of non-adherence. HCPs should also encourage patients to learn coping skills to help them accept their illness that may in turn help enhance their adherence to treatment (Aldebot & Weisman de Mamani, 2009). Peer group sharing may also be helpful so that patients can learn from others' psychotic experiences.

Approximately 40% of the surveyees reflected that 20-50% of their patients stopped taking their medication in the past month, either due to improved condition or drug side effects. These findings further suggested that there was still a significant portion of patients who do not understand the importance of taking medication on a consistent basis. To encourage patients to continually take their medicines, psychiatrists could consider prescribing drugs with fewer side effects (such as atypical antipsychotics), especially for late stage patients, in order to further reduce the rate of treatment discontinuation.

Limitations of the study

Our findings on the antipsychotic adherence issues are based on the clinical experience of a small proportion of local HCPs (~20% of all psychiatrists and case managers in Hong Kong) during their everyday practice, and therefore it is unknown whether the survey results are representative of all HCPs in the field of mental health in Hong Kong. Another limitation of the study is that the demographic characteristics of the surveyees such as age, years of clinical experience, and practice setting were not recorded in details. Nevertheless, our findings provide a glimpse of the prevalence of partial/non-adherence and perceptions of local HCPs regarding the factors that affect medication taking behaviours of patients with schizophrenia. To further understand the implications of non-adherence in the management of schizophrenia, future studies could be conducted to examine other factors affecting adherence (e.g. severity of positive/negative symptoms, attitudes of caregivers such as expressed emotions, financial situation of patients, substance abuse, cultural and religious beliefs, etc.), as well as the usage rate of potential strategies to address adherence problems such as the use of LAIs, cognitive-behavioural therapy, compliance therapy, cognitive adaptation, and psychoeducation (Velligan et al., 2009).

Conflict of interest: None.

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Table 1. Survey questions adopted in the current study targeted for local psychiatrists and case managers.

Please mark your answers in the spaces provided or where relevant by putting a "X" in the appropriate box. Please answer the following questions based on the patients with schizophrenia that you have seen in the past month.

1	**Please check your professional role:**	
	Psychiatrist	☐
	Case Manager	☐
	Others: _____	☐
2	**Of your patients with schizophrenia, please select THREE major barriers to patient recovery and improved functioning**	
	Medication non-adherence	☐
	Lack of integrated psychosocial support	☐
	lack of shared decision-making in the therapeutic alliance	☐
	Loss of insight into illness	☐
	Stigma and cultural attitudes	☐
	Substance abuse	☐
	Negative family dynamics	☐
	Insufficient training of healthcare staff	☐
	Others: _____	☐
3	**Of the patients with schizophrenia you saw in the past month what percentage do you suspect may have non-adherent, partially adherent or fully adherent? Please fill in a percentage for each. Total must add up to 100%.**	
	% Non-adherent (took < 30% of prescribed doses)	%
	% Partially adherent (took at least 30% but no more than 90% of prescribed doses)	%
	% Adherent (took at least 90% of prescribed doses)	%
		100%
4	**During your consultations, which approach do you normally use to assess adherence? Please select the approach you use most as well as all approaches you use.**	

	Select the one you use most	Select all you use (including the one used most)
Ask the patient explicitly	☐	☐
Ask an informant (e.g. relative, friend, caregiver)	☐	☐
Pill counting	☐	☐
Drug Plasma levels	☐	☐
Logbook	☐	☐
Adherence assessment scales	☐	☐

5	**How often do you assess adherence in your patients?**	
	Regularly, during each visit	☐
	Every 2-3 visits	☐
	2-3 times a year	☐
	Never	☐
6	**How many percentage of your time has been spent on reminding / ensuring medication adherence?**	
	<10% of my time staying with patients	☐
	10-25% of my time staying with patients	☐
	25-50% of my time staying with patients	☐
	>50% of my time staying with patients	☐
7	**What percentage of your patients with schizophrenia has told you that they understand there is a risk of relapse if they don't take their medication regularly?**	
	Less than 20% of patients	☐
	Between 20 and 50% of patients	☐
	More than 50% of patients	☐
8	**What percentage of your patients with schizophrenia shows, or has at any time, in the past month, shown some lack of insight?**	
	Less than 20% of patients	☐
	Between 20 and 50% of patients	☐
	More than 50% of patients	☐
9	**In the past month, when your patients with schizophrenia felt better, what percentage said that medication was not necessary and stopped taking it?**	
	Less than 20% of patients	☐
	Between 20 and 50% of patients	☐
	More than 50% of patients	☐
10	**What percentage of the patients with schizophrenia you have seen in the past month stopped taking their medication due to undesirable side effects?**	
	Less than 20% of patients	☐
	Between 20 and 50% of patients	☐
	More than 50% of patients	☐